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"What's past is prologue": our legacy - our future, 1990 National Interpreters Workshop

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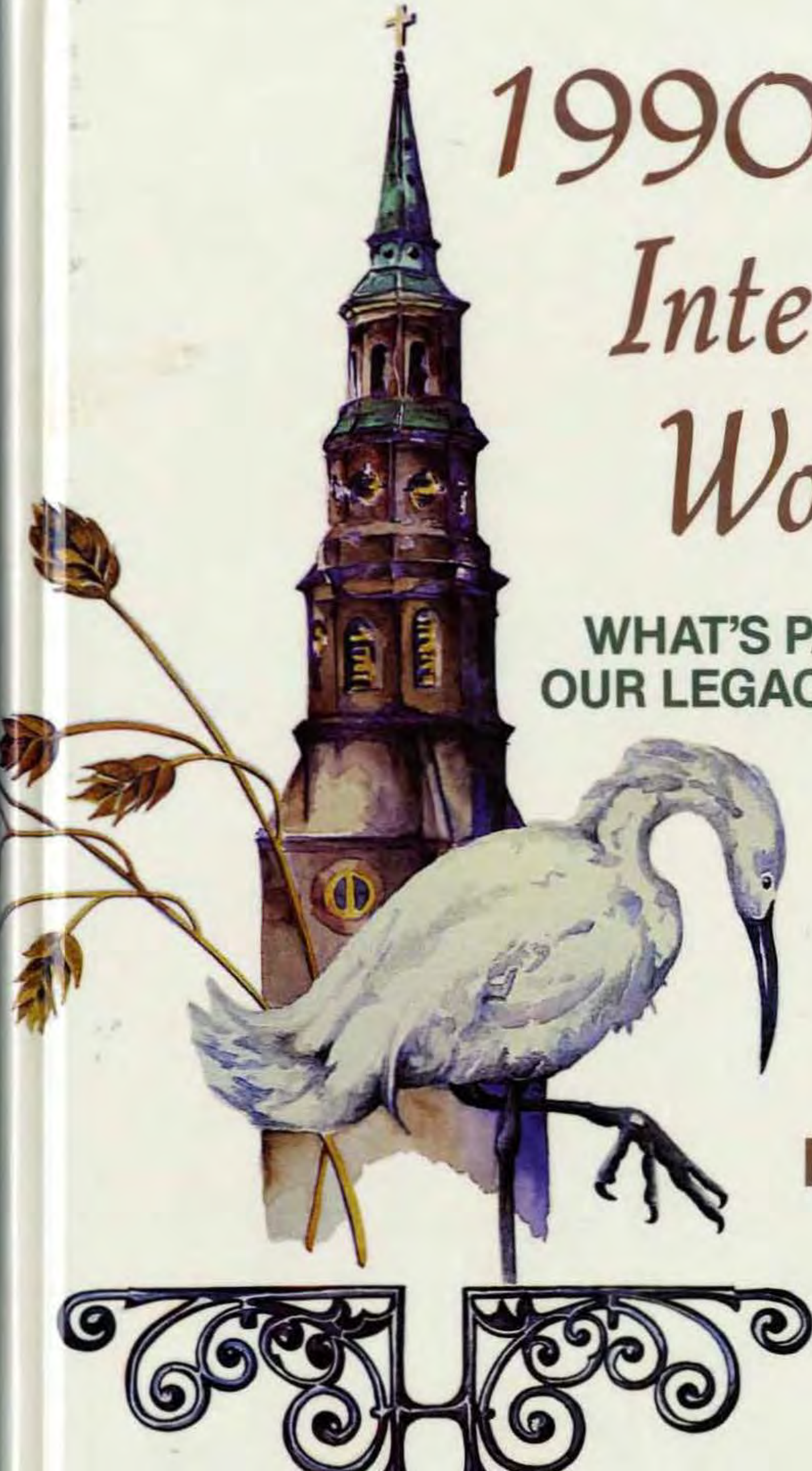

WHAT'S PAST IS PROLOGUE
OUR LEGACY ►◄ OUR FUTURE

NATIONAL ASSOCIATION FOR INTERPRETATION

Charleston, South Carolina

Coedited by: David L. Kulhavy and Michael H. Legg

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OUR LEGACY < > OUR FUTURE

1990 NATIONAL INTERPRETERS WORKSHOP CHARLESTON, SOUTH CAROLINA

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WHAT'S PAST IS PROLOGUE

William J. Lewis

Thirteen centuries ago, Aristotle wrote his *Rhetoric* which, as far as I know, was the first systematic recording of **the rules of good communication**. Nearly everyone who has written about communication since that time has made reference to this work which analyzed the communication event by examining what he said were its three components: the speaker, the message and the audience.

Two other classical writers, Quintillian who wrote *Institutes of Oratory* and maintained that **an effective communicator** had to be ethical, and Cicero, author of *De Oratore,* developed the speech structure we use today: introduction, body and conclusion, are also part of the past which is prologue to the present concern of the National Association for Interpretation for effective interpretive communication in a variety of settings and circumstances.

While these early writers were primarily concerned with speaking in legislative forums, some of their ideas are still very current such as the notion that an effective communicator must have high credibility; that **the first part of any message is of vital importance**; that communication which fails to consider the emotions of the audience will fail.

Current writers on communication reflect a debt to the past, but forge ahead into new territory. Peggy Noonan in her *What I Saw at the Revolution:* A Political Life in the Reagan Era, describes her experiences as a speech writer for Presidents Ronald Reagan and George Bush; how **the credibility of speakers** is less dependent on themselves than on a committee of writers whose output is checked by several layers of bureaucracy before the president ever sees it; how every message needs to be laced with short, pithy sound bites for use by the mass media, particularly television; how TV camera savvyness is essential.

The **impact of mass media** on our society is perhaps best described in Neil Postman's *Amusing Ourselves to Death:* Public Discourse in the Age of Show Business. Any interpreter should find fresh insight into how the mass media is affecting those who visit parks, museums, historic sites, etc.; should realize that presentations need to be adapted to a public changed by its exposure to the mass media.

The topics of the papers following this essay reflect an awareness that while many of **the basic principles of effective interpretation remain the same**, there's a changing world out there that must be accommodated. Several papers, for example, question, through research, the validity of long-held beliefs; other research papers ask how the effectiveness of interpretation can be measured. A concern with an exploding **population** and the consequent generation of waste, as presented in several papers, is a problem that Aristotle probably did not see as an issue.

Whereas earlier writers seemed to be more concerned with speeches to relatively silent, listening, amorphous audiences, current trends reflect **a growing involvement**

with the audience in producing the message. One such topic, for example, is called "Partnerships in Education: Collaboration for Excellence." Another explores "Park Rangers and Museum Educators in Collaboration." In addition to awareness with the mass media, other topics highlight diverse technological changes in our society such as **the use of aerial photography, video, and computers** as they apply to interpretation.

Perhaps the area that is undergoing the most change is the way we look at **audiences**. Whereas, in earlier times, interpreters may have seen audiences as large groups, the members of which were all very much alike, the emphasis is changing to an awareness of the uniqueness in any group. That is, the "public" is being broken into smaller and smaller units as reflected by such topics as interpreting for ethnic minorities, dealing with **cultural diversity**, *"Tasty Menus that Keep Teachers Coming Back for More,"* and people with developmental disabilities or are hearing-impaired. Moreover, questions are being asked about what interpretation is doing, should be doing, for audiences. Some papers are concerned with developing **perceptual awareness**; others see interpretation as therapy. Intriguingly, one topic is called "Archaeology as Therapy".

Another change, with roots in the past, is a growing need for consideration of communication within the interpretive organization and its subsequent effect on the public. How **networks** are established within and without the organization is explored. How can a higher quality interpreter be attracted and trained is asked.

Just as audiences are being broken down into smaller and smaller units with attention being given to interpretation for and with small groups, as well as individuals on a one-to-one basis, **historical topics** are becoming more specific. It's not just "history" anymore, it's historical interpretation of architecture, interpretation of historic literary sites, and the gathering of oral history.

While there's a concern for smaller groups and individuals, the paper topics reflect **a growing awareness of larger global issues** and the need to deal with large topics such as evolution and slavery in the Southern States. These topics lead to another area of growing frustration; dealing with controversy and politics and its concomitant: How do we move audiences from awareness to action? or should we?, and how do we present"The International Trade in Plants and Animals."

Financing interpretation is another area which is gaining attention as reflected by topics such as teen volunteers and affordable quality. One paper interprets a parkland donor while another insists on a "Professional Approach to Public Relations and Marketing." Yet another asks **"How to Pay for It?"**

A proliferation of places where interpretation takes place is reflected in papers dealing with **interpretation in greenhouses, on rivers, in museums**, and "An Archaeologist Dug a Hole in the Middle of My Walking Tour!" Using **the fine arts** in interpretation continues to receive attention as song, dance, puppets, music and dramatic presentations are demonstrated.

In sum, the topics of the papers presented at **the 1990 National Interpreters Workshop reflect a dynamic NAI membership**. While firmly rooted to principles which have been developed in over a millennium, presenters show **a healthy use of past knowledge as prologue to an active, vital present**. Failure to adapt to changing conditions, failure to look at things from more than a single view, failure to realize that everything is in the process of becoming something else, would lead to a dying, static profession. Fortunately, it appears that the NAI shows robust health.

CONTENTS

KEYNOTE ADDRESS
NATIONAL ASSOCIATION FOR INTERPRETATION
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REPLACING OLD ILLUSIONS WITH NEW REALITIES

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ABSTRACT: Today's conditions demand critical examination of established ideas and ideals and of traditional goals measured in material terms. New needs require caring, sharing, and risk-taking. Environmental interpreters can lead in pledging allegiance to a green and peaceful plant.
KEYWORDS: myth, greed, transformation, education, native American, spiritual.

INTRODUCTION

I feel privileged to keynote this 1990 National Interpreters Workshop and pleased to address your theme, "The Past is Prologue—Our Legacy, Our Future." I can relate to it, having recently completed the manuscript of a new book, ***The Future of the National Parks***. Most of the book, as it turned out, treats history as the essential foundation for previewing the national parks of tomorrow and planning intelligently for them.

How can you know where you're going if you don't know where you've been? That question is basic. Yet it grieves me to continually meet good, well intentioned resource professionals inadequately grounded in the history of their own fields: foresters who know little of Gifford Pinchot, landscape architects and park people barely acquainted with Frederick Law Olmsted, wildlifers ignorant of C. Hart Merriam and Ding Darling, and toxicologists who have never read ***Silent Spring.***

Perhaps the inadequacy is no accident. America, after all, is ever the land of grand illusions, where it's easier to avoid the past, or to look at it as a pretty picture book, or a gala musical like ***"Oklahoma,"*** complete with song, dance and happy-ending romance. However, as Thomas Merton warned in ***Conjectures of a Guilty Bystander***, a myth is apt to become a daydream and the daydream an evasion.

Myths rationalize bigotry, exploitation, homelessness, hunger, war, and the degradation of the environment. For four hundred years the dominant European/ American policy toward the indigenous peoples of this country has been one of continuous genocide. And the same for indigenous animals. Even now the grizzly bear is widely regarded as a "savage killer." Snakes are "slimy," although their skin is actually very dry; the coyote is "cowardly," the mountain lion "ravenous and craven." The South was long a mythic paradise all its own, in which benevolent, cultured planters loved and protected slaves, those innocent, joyful, songful "darkies." Merton wrote that the word "frontier" began as the symbol of adventure and clear-eyed innocence but acquired pathetic overtones in Kennedy's "new frontier." trying to keep the myth alive, rather than recognize that America had become prisoner of the curse.

Modern America is the victim of a syndrome that glorifies greed, that pervades and weakens government and all our institutions and professions. Little wonder that priorities are lopsided. The world spends $1.7 million a minute on military forces and equipment, $800 billion per year. The United States, in particular, has spent vast sums for "security," with illegal and immoral acts in other countries while with a fraction of the amount it could have given humanitarian aid and eliminated the threat of war.

Something is out of whack in a country that spends more than a billion dollars for a telescope while failing to care for its hungry; that cannot help its mentally ill; that crowds its prisons and condemns the imprisoned to defeat, dependence, and despair.

> "A nation that continues year after to spend more money on military defense than on programs of social uplift is approaching spiritual death," wrote Martin Luther King.

Society needs transformation—a viewpoint of human concern, distress and love. I feel we need a revolution of ideals, a revolution of ideas in all fields, a revolution of ethics to sweep America and the world. We must, for one thing, alter the lifestyle that makes us enemies of ourselves, a lifestyle that confuses a standard of living with the quality of life. That, however, may be the simplest part. Each of us who wants to make a difference must understand more about the history of ideas that dominate the philosophy and policy of society, that dictate our obsession with facts and figures, more about the analytical type of thinking of western science that provides power over nature while smothering us in ignorance about ourselves as part of it.

I wish I could cite education as the answer, but education as we know it is about careers, jobs, success in a materialistic world. It's about elitism, rather than about caring and sharing. It's about facts and figures, cognitive values, rather than about feeling derived from the heart and soul. It's about conformity, being safe in a structured society, rather than about questioning and restructuring society,

Education has become part of the problem instead of the solution. During the recent summer I read an Associated Press report on campus racism. It showed that many schools have established programs to deal with bigotry, but they are for the most part tokens without genuine commitment or understanding behind them. That isn't surprising. Consider that when the world was created it had a certain unity to it. The world was incomplete, to be sure, and changing, even as it is now, but the parts all fit, each part contributing to the advancement of the earth. But today the human components, presumably the most sophisticated of God's creatures, work against each other: Rich against poor, men against women, straights versus gays, old versus young, black against white, Gentile against Jew, Moslem against Hindu, physically and mentally able against the disabled, the educated versus the uneducated.

It shouldn't be that way, considering that we are all sisters and brothers, born of the same Mother Earth, derived from the same living substance manifest in creation of the earth. But education too often is not a unifying influence. It tends to divide individuals and to repress respect for individuality. The Straight A student is the paragon. Straight A means the student is honored and regarded by parents, while the student who brings home less—because, perhaps, he or she perceives magic in butterflies or beetles—becomes a family problem. The level of talent is externally defined, even though life itself is the essence of talent.

The thought of reversing course may seem unrealistic and intimidating, but as Willis Harmon wrote in ***Global Mind Change***,

> "No economic, political or military power can compare with the power of a change of mind. By deliberately changing their internal image of reality, people are changing the world. First we must be willing to get rid of the poisonous beliefs that have led to the state of affairs as they exist at present."

In this same vein, but more pertinent to the individual, I will cite an interview with Brian Willson, which appeared in the wonderfully illuminating pacifist publication, ***Fellowship.*** You may remember Brian Willson as the nonviolent protester who in September 1987 sat on the tracks to block a train carrying weapons to Central America and lost both legs. In the interview, titled "The Road to Transformation," Brian explains that his disenchantment began as a lieutenant in Vietnam. Later he went to Nicaragua and began networking with people to explore ways of expressing individual conscience. By working to extricate himself from what he considers a complicity of madness, Brian underwent a healing process and intense personal transformation. "Nonviolence," he concluded, "is not so much a tactic as a way of experiencing the world within yourself, of understanding the sacred connection with all of life. It's an understanding of how everything is interconnected and how everything is in a state of interrelationship. We are going against our own nature when we start disrespecting all the other parts of life: people, plants, animals, water, sunlight, clouds. I think nonviolence is an attitude and way of life with a spiritual ecological dimension that is aware of how everything is interconnected and responds honestly to that."

Yes, ***Spiritus et Materia Unum:*** The antithesis between the material world and the spirit simply does not exist, since the material world is only the content of the spirit. To recognize this idea is the most important discovery of a lifetime, enriching and empowering the individual to do what he or she believes to be right, regardless of consequences. I love the words of John Trudell, the Indian leader, at he 1980 Black Hills Survival Gathering:

> "We must go beyond the arrogance of human rights. We must understand natural rights, because all the natural world has a right to exist. The energy and the power of the elements—that is, the sun and the wind and the rain—is the only real power. There is no such thing as military power; there is only military terrorism. There is no such thing as economic power; there is only economic exploitation. That is all it is. We are an extension of the Earth, we are not separate from it. The Earth is spirit and we are an extension of that spirit. We are spirit. We are power."

John's words are rich and challenging, calling those who hope to heal the earth to join with those who hope to heal the souls of humankind to bring something new to a society in distress. They underscore lessons of history, including current history, still to be learned. For example, despite brief periods of concern or support for the native peoples, there has never been a mass movement of non-Indians demanding that our government honor its treaties and grant them basic rights of autonomy and self-determination. The tribal council system was imposed by the United States government in 1930 to replace the traditional leadership that would not sign away their lands to oil and mineral companies.

Likewise, the **Alaska Native Settlement Claims Act of 1971** was designed not to benefit natives but to open the North Slope for oil development. Now, under the guise of settling a fabricated Hopi-Navajo land dispute, our government and both tribal councils have been trying to force traditional people from their land to clear the way for coal strip mines and other mineral exploitation. At the heart of the Indians' struggles for their land and their way of life is the understanding that this must be a spiritual struggle.

I urge interpreters to embrace the spiritual struggle and to face the issues of the troubled world. Though nuclear weapons will never force nations to join in recognizing the limits of a fragile earth, environmental interpreters can lead in pledging allegiance to a green and peaceful planet. I realize that this isn't easy, but the individual with conscience and courage will find the way.

For example, my friend, Gilbert Stucker made his first visit to Dinosaur National Monument, along the Colorado-Utah border, in 1953 completely on his own, not primarily as a professional paleontologist but as a citizen preservationist deeply concerned with proposals to construct two dams across the rivers within the national monument. Like many others, he feared that allowing such a project in Dinosaur would place the entire national park system in jeopardy. Gil encouraged the Park Service to develop the dinosaur quarry as a positive project, displaying and interpreting dinosaur remains while at the same time interesting the public in the surrounding canyons and the threats to them. Presently, as the project got underway, he was offered, and accepted, a temporary appointment as ranger-naturalist. Visitors would ask questions, giving him the chance to lecture to large and small groups.

I realized full well that when I discussed the proposed dams, I was exceeding my authority," Gil recalled later, "I was supposed to explain the quarry to the visiting public, not ask people to write their congressmen. At one point the park superintendent called me into his office and said, 'I just had a telegram from the Secretary of the Interior directing that no Park Service employee is to discuss the threat of dams in Dinosaur National Monument. I know you've been talking against the dams. If you continue, I will have to separate you or discharge you. I have no choice.'

But I knew that I must talk against the dams and somehow rode it through until the question was settled—and Dinosaur was saved.

Another example: One morning at Gatlinburg, Tennessee, in 1966 the Tennessee Commissioner of Conservation testified in support of the dreadful transmountain road across the Great Smoky Mountains as conceived and proposed by the director of the National Park Service. That very afternoon a young state park interpretive naturalist, Mack Prichard, testified as a private individual against the road. Some years later I asked Mack if he considered his independent action fitting and proper. He responded : "No, I don't think it was fitting. It was pretty risky, in fact. I felt if it cost me my job it was worth it-being honest about the fact I thought it was a lousy idea. You do what you have to do sometimes. I thought it was a sorry idea to build another road. The park would be better off without the road it's got. Then you'd have twice as much wilderness."

You do what you have to do sometimes, because your career is a mission, not a job, and there's something bigger in life that a paycheck. In 1987, when I spoke at the University of Wisconsin-Green Bay, a graduate student told me of applying for a position as a summer naturalist at a camp for children operated by the Wisconsin Department of Natural Resources. On the application form he pondered one particular question, "Would you approve the use of pesticides?" He wondered whether to play it safe or to answer with his true feeling. He chose to respond that he would ***not*** approve the use of pesticides, a response that stirred hostility in his interview for the job. "You mean," he was asked, "you would not use a pesticide even if the children were threatened with poison ivy?" "No," my friend replied. "I would much rather explain poison ivy to the children." He didn't get the job, though he would have made an excellent naturalist, the kind that is most needed. But I'm sure he's doing something else rewarding and fulfilling.

My friend Alfred Runte, the historian, while working as an interpreter in Yosemite National Park during the summer of 1980, talked to visitors about national park ethics and ideology. He would begin by asking his audience to recognize that national parks are in jeopardy, then adding:

"What would you be willing to do to see that national parks remain part of the fabric of American society for generations to come? Would you give up some power so that geothermal development would not destroy Old Faithful? Would you use less lighting at home so that strip mines and coal-fired power plants would not be needed in the Southwest?"

For his troubles Runte was directed to a week of "rehabilitation training," if you can imagine that for a scholar and university professor. He took it all in and subsequently delivered his message as he chose. Runte's travail, however, was not over. Brilliant historian and masterful teacher though he may be, was denied tenure at the University of Washington. But when one door closes another will open, as evidenced by Alfred Runte's successful new book, ***Yosemite, The Embattled Wilderness.*** He learned that a program, any program, whether in a university or a public setting, without a theme, a message, is pointless. Dispensing information for information's sake is not what the National Park Service, or any interpreter in it, ought to be doing.

This leads me to mention a recent letter from a Huxley College alumnus about his resignation from the National Park Service. "I used to love this job," wrote Chuck. "I can't begin to tell you what a difficult decision it was." but the politics imposed upon professionals working in the national parks got to be too much for him.

I felt disturbed and wrote the regional director. I wrote that I was not really surprised at the departure of a caring and competent person. I told the regional director that I had lately been to Mount Rainier, where the Paradise visitor complex was like a tourist ghetto. One evening I attended an interpretive program. The subject was listed as *"Wilderness,"* but the interpreter knew little if anything about the Wilderness Act 1964, one of the great landmark laws in the history of conservation, or about the National Wilderness Preservation System; the program on "Wilderness" was disappointing and dismal. The next day I heard one seasonal interpreter, whom I know, endeavor to discuss the status of the spotted owl, the symbol of our vestigial Northwest forests. But another seasonal called him aside with a reprimand, "You know very well that our superiors have instructed us to avoid controversy."

I did, in fact, receive, a courteous and considerate response to my letter from the regional director.

> "Many of us agree with you that Chuck is a dedicated and competent employee. He has been recognized by the National Park Service through special awards and as the nominee of the Region for the Freeman Tilden Award, the highest honor in NPS interpretation." Then he went on. "Poorly trained seasonals certainly exist in the NPS, but from my own observations there are many permanents and seasonals alike who are passionately dedicated to wilderness and preservation values."

That's the tragedy of it: that caring people feel stressed and repressed by job restraints that keep them from speaking from the heart. Some have lost their chance for advancement, or rehire, or getting hired, by sticking to principle when expediency dictated otherwise. This must not be.

In 1968 I read an exciting article entitled *"Concerning Dangers in National Parks,"* by an interpretive naturalist in the Everglades named Gale Zimmer. She was moved to express her viewpoint by the tragic death of two campers, who had been killed by grizzly bears in Glacier National Park. I have never meet Gale, but read her article in a Park Service house organ. I would never find anything like it today, considering the Park Service publications stick close to the party line, thus are bland, sterile and sanitized.

"Maybe danger belongs in a national park," ***Gale wrote.*** "I think it's being there is what we mean by a 'wilderness experience,' a 'national park experience.' National parks are not cozy roadside tourist attractions, designed to satisfy the curiosity of mankind in padded comfort. They are slices of the natural world as they should be. And in the natural world there is 'danger.'

People should know what a national park is—and isn't—before they commit themselves to spend their vacation or a weekend there. They should know if it's going to be rough and primitive and if they want the rough and primitive, fine. I think we have an obligation to inform people—honestly. But I think we betray the ideal behind the whole National Park System if we try to plane down all the rough spots, shoot all the touchy animals, fence off all the cliffs and offer visitors 'a national park scene in the comfort of your own living room.' With Thoreau I'd like to know an entire heaven and an entire earth, and I think basically our natural national parks should offer an entire heaven and an entire earth.

That's beautiful to me. I thank Gale for it, wherever she may be, and hope she may know her expression is not forgotten. The time is at hand, now more than ever, to speak openly, as she did. Those who give the most often don't get the recognition—that is true—but there is no limit to what you can accomplish as long as you don't care who gets the credit. Let us remember the words of Mark Twain: "To do good works is noble. To teach others to do good works is nobler, and not trouble."

FOR ADDITIONAL RELATED MATERIALS BY THE AUTHOR, SEE:

The Future of the National Parks, University of Arizona Press, Tucson, 1991.

Conscience of a Conservationist. University of Tennessee Press, Knoxville, 1989.

"Only the Individualist Succeeds," Chapter 22, pp. 157-164, in Interpretive Views (Gary E. Machlis, Ed.), National Parks and Conservation Association, Washington, 1986.

"Outdoor Educators Must Stop Playing it Safe," High Country News, Paonia, CO, April 24, 1989, pp. 19-20.

THE BUSINESS(ES) OF INTERPRETATION ANDENVIRONMENTAL EDUCATION

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INTRODUCTION

I must start by admitting that I have had very little formal education/training in either interpretation or outdoor education. My primary training and emphasis is business and economics. However, over the last ten years I have had the opportunity to work with, and observe, some top notch interpretation and environmental education people. It all started with Paul Risk who, even though I was very resistant to taking a course in interpretation, provided me with a basic understanding of interpretation.

Bill Randall, who as many of you know, eagerly takes advantage of any opportunity to interpret almost anything, helped me develop an appreciation of the dedication and enthusiasm common among interpreters and environmental educators. He also helped me to see the linkages between interpretation and marketing. Over the last seven years, I have watched Maureen McDonough work tirelessly to assist interpretive organizations become better planners, communicators and researchers. Ann Wright and her (brilliant, innovative, but weird) colleagues at Land Between the Lakes have clearly demonstrated the ability of interpreters and environmental educators to effectively utilize business concepts and methods.

TEAM MEMBER

I have also been a team member on a number of different interpretive projects. During the last two years, including a recent one year sabbatical, I have had the opportunity to work closely with some of the major natural resource agencies in North America (e.g., U.S. Forest Service, Canadian National Park Service, Bureau of Land Management, Ontario Ministry of Natural Resource).

The combination of these associations and involvement has resulted in **a very positive perception and appreciation of interpretation and outdoor education**. So much so, that I now regularly recommend that interpretation and environmental education be considered when natural resource agencies and tourism/recreation businesses develop their strategic, marketing and public relations strategies.

Although my interactions and involvement with interpreters and environmental educators have generally been rewarding and stimulating, I must honestly say, that at times, they have been painfully frustrating. I still regularly come into contact with "interpretation types" who aggressively oppose the idea that interpretation or environmental education be approached in a more "businesslike" fashion.

THE "B" WORD

The mere mention of the "B" word sends them off in heated philosophical (almost religious) sermons about interpretation, and (their perceptions) that becoming more businesslike can lead to unethical behavior, an orientation to profit at the cost of quality programs/service, disregard for resource/environmental protection, and deceptive marketing. Fortunately, this represents a decreasing minority of persons in the fields of interpretation and environmental education.

Most persons in the field, even those who have no formal business training, recognize the need to at least objectively investigate the potential benefits from taking a more "businesslike" approach. Many are already successfully moving in this direction.

Increased interest, and concern for the environment and historic and cultural resources, will create potential market and funding opportunities for organizations involved in interpretation and environmental education. I also sense a greater awareness (among some decision makers in natural resource agencies) of the potential contribution/role of interpretation and environmental education (e.g., instilling environmental/user ethics).

At the same time, interpreters and outdoor educators will confront a number of the same **challenges** that confront businesses including: quick and dramatic changes in the environment (e.g., economy, technology), increasing competition, more fragmented and demanding markets, adjusting to the aging of our population, rising costs, and pressure to diversify and do more with fewer resources.

A "BUSINESSLIKE" APPROACH

A more "businesslike" approach will better enable agencies and organizations to anticipate and deal with emerging problems/threats, and efficiently capitalize on appropriate emerging opportunities. Becoming more "businesslike" entails among other things: greater attention to strategic planning, securing better information on existing and potential customers/publics, service marketing, regular program and "product (service) line" audits, pro-active comprehensive quality assurance, and marketing interpretation and environmental education.

STRATEGIC PLANNING AND MANAGEMENT

The present environment in which organizations must make decisions, acquire resources, and operate is characterized by significant (and often sudden) changes. Peter Drucker has described it as the age of discontinuities. **Successful managers** in agencies, organizations and businesses recognize that if they are to succeed in accomplishing their mission and strategic goals, they must be ready to adopt to relevant changes in their environment (market preferences and behavior, technology, competition).

They also know that readiness for change must be planned for (Linneman, 1980). That is why an increasing number of business experts argue that today, strategic planning is managements most important responsibility. If organizations fail to do strategic planning, they plan to fail.

Strategic planning directs attention on what possible/ likely external/ environmental changes an organization should prepare for. It has been described as, "The **never ending process of keeping an organization constantly ready to seize the**

very best external opportunities that become available to it, meanwhile steering the organization away from threats to its continuation (Shanklin and Ryans 1985)." Strategic planning is pro-active rather than reactive. It is more difficult than tactical planning because it requires those doing the planning to be futurists, and entrepreneurs because it requires consideration of non-traditional approaches.

Strategic planning involves:

(1) verifying or developing the mission statement of the organization. The mission should provide an organizations' employees and publics (e.g., contributors, volunteers, budget decision makers) a clear idea of why it exists - its essential purpose. It is the basis for goals, objectives and strategies,

(2) establishing a hierarchy of mutually consistent organizational wide goals and objectives,

(3) monitoring and assessment of key factors in the environment (e.g., cultural and social patterns, population trends, economic conditions, and actions/ offerings of competitors) for the purpose of identifying opportunities and threats, and

(4) analysis of organizational strengths and weakness including, but not limited to: resources (e.g., financial, land, facilities, staff) and the quality of existing facilities/ programs/services.

TACTICAL PLANS

Tactical plans (e.g., site and facility plans) are, and will continue to be, important. But organizations which engage only, or primarily, in tactical planning tend to concentrate on what they are already doing (Linneman 1980). The emphasis is often on doing more, and/or a better job at what they are already doing.

The fact of the matter is that doing a better job at what you have (maybe always) been doing does not guarantee success if the market(s) you have been serving no longer exists (e.g., changing preferences, demographic changes), or the competition has developed a product or service which better and more conveniently meets the need/desires you have been servicing. Doing things right is no longer adequate; **we must do the "right things right."**

While most interpreters and environmental educators with whom I have worked recognize the importance of being more strategic, I regularly encounter comments like: "We can't really plan because of all the uncertainties," "Strategic planning requires too much time, we are too busy and already do too much planning," "Our program and organization is so small that we don't need a strategic plan," "I don't have time to think about the future—I have too many current problems."

I believe most people when they say that they are busy and their organization/agency already does a great deal of planning. I am not necessarily advocating that we increase the amount of resources going into planning. What I am recommending is that more attention be given to strategic planning. It's not necessarily an issue of more planning, but rather, are we doing enough of the right types of planning?

BETTER INFORMATION

Becoming more "businesslike" should/must begin with better information on:

(1) customers—their characteristics, needs, expectations and perceptions, and

(2) environmental factors which impact market/public preferences and behavior. Today's most influential business experts and authors like Tom Peters contend that high quality organizations are such because they are close to their customers and more importantly they always learn from them (Peters 1987). Zemke and Schaff (1987) argue that the priority of all service organizations—agencies, not-for-profits and businesses—should be to **listen** to customers/clients and then **respond creatively.**

KNOW YOUR CUSTOMERS

Many managers and organizations claim to know their customers and publics. Some even go as far as saying that they know more about what their customers/publics want (or "should want") then they know themselves. And, of course, there are still some professionals (??) who are comfortable, in fact, prefer to operate solely or primarily on their instincts and/or perceptions of what their customers want and expect. After all, it is easier for some to keep doing what they think is right, or like doing, if there is no information on what customers/clients really desire, expect, and think about what they are doing.

It has been my experience that a significant number of organizations and agencies (including some of the larger providers of interpretive programs and services) lack important current information on their existing and potential customers. Many important facility and program decisions are based upon perceptions and assumptions of who their existing and potential customers are, what they desire/expect, and their degree of satisfaction with various facilities and programs.

Organizations which really do understand their customers share a number of important characteristics. They recognize that they don't know all the answers, and understand that **customer expectations are constantly changing.**

TAKE A PRO-ACTIVE APPROACH

They take a very pro-active approach to securing information about their existing and potential customers. They don't wait for customers to come to them with their comments and complaints. Maybe most importantly, they commit themselves not only to collect customer information, but also to act on the findings.

Although an increasing number of interpreters and environmental educators recognize the importance of knowing their customers/clients/publics, some are still reluctant to invest money and time in research. In part, the resistance is due to the belief that research is not affordable, is too technical or complicated, and/or will not tell them anything they think they don't already know.

What some fail to recognize is that customer research does not have to be costly, complicated, or quantitative to provide accurate and useful information. Nor do they have to be trained researchers to design and implement effective customer research programs and information systems.

"WINNING" BUSINESSES

Many "winning" businesses use a variety of methods, or listening devices, to secure and maintain information on their customers including: observation, regular informal discussions with customers, comment cards and complaints, regular polling of employees, focus groups, customer surveys, and even experiments.

It is important that interpretive and environmental education organizations obtain, monitor and regularly **analyze information** about their customers. They must view it as an essential and continuous activity. Without this information it is difficult, and will become more so, to design and operate effective programs and facilities, or to do effective marketing and quality assurance.

SERVICE MARKETING

Over the last several years marketing has received a great deal of attention in the professional literature, and at this and other workshops. However, it has been my experience (and marketing has been my primary focus for twelve years) that there are still many who do not understand marketing concepts or processes, and this includes some who are actively engaged in "marketing type" activities. A great deal of what people, and especially some in natural resource agencies, are calling marketing, is in my opinion not marketing.

ESSENTIAL MARKETING CONCEPTS

In part this is because some essential marketing concepts (e.g., market segmentation and target marketing) are difficult for some persons in service agencies and not-for-profit organizations to accept and/or implement. As a result, they apply/utilize only certain elements of the marketing process and ignore or discard others.

The problem with this "take it or leave it" approach is that a principal advantage of marketing is the development of an integrated effort (mix) focused on accomplishment of a hierarchy of consistent objectives. Each element of a marketing strategy (e.g., pricing decisions) builds on previous elements/decisions, and should support the other elements. It is difficult to insure consistency and integration when important steps/elements are left out.

Organizations and persons engaged in interpretation and/or environmental education are, whether they accept it or not, primarily in the service "business." Facilities, nature trails, museum exhibits, and technology are only tools/equipment used in the production of service experiences. And tools, although important, should not be the primary focus or "driving force" of any service organizations.

A service is an activity that has value (provided that it is designed with customer needs/wants in mind) to a buyer, as opposed to an object, thing or device (Goonroos 1983). They are ephemeral and experiential in nature. They can be experienced but not possessed; there is no transfer of ownership to the consumer/participant. Services are also produced and consumed simultaneously, and the consumer is actively involved in the process of producing/creating their own experiences. Because of these characteristics, quality is more elusive and difficult to measure.

CHARACTERISTICS OF INTERPRETATION AND ENVIRONMENTAL EDUCATION SERVICES

The characteristics of interpretation and environmental education services also requires a different approach to marketing, and the process for developing marketing strategies. According to Shostack (1977) service marketing, to be effective, "Requires a mirror-opposite view of conventional product practices." This includes a different and expanded marketing mix, continuous quality assurance, and an expanded role for employees as marketing representatives.

A number of interpretation and environmental education organizations have successfully adopted service based marketing. However, in other instances marketing has failed because only concepts and methods developed to market manufactured products were employed.

Marketing is an approach and philosophy of doing business which is based on the marketing concept. According to Kotler (1976)," The marketing concept is a customer needs orientation backed by an integrated marketing (mix) effort aimed at satisfying customers comprising different target markets/publics."

Obviously this requires that organizations recognize, and incorporate customer needs and expectations into the design of programs and services. Promoting a program or service which was not designed with careful attention to the customer/client/public is not marketing, it is selling. Promoting a program/facility or service for which there is no longer a market is "inefficient selling."

To be effective, marketing strategy and activities must be consistent with, and contribute to, accomplishing of the organizations' mission, goals and objectives. That is why strategic planning is so important; it verifies the mission, and identifies the goals and objectives which guide marketing. Sometimes, "marketing type" activities (e.g., promotions) which appear to be successful, are not really effective because they are designed without consideration to if, and how, they contribute to organizational priorities.

Unfortunately, this is often because agencies/organizations do not have clearly stated missions, goals, and/or objectives.

DEFINING AND ANALYZING SEGMENTS OF THE MARKET

Defining and analyzing different segments of the market/public, assessing their potential (i.e., size ability of the organizations to service their need/wants), and selecting some as target markets, are early and essential decisions in developing a marketing strategy. Target marketing is a decision process to find a market(s) that: **(1)** is/are consistent with the organization's mission, objectives and capabilities; and,

(2) the organization can reasonably expect to attract and satisfy.

The concept of selecting target markets/publics does not mean that other (non-targeted) segments are excluded from participating in programs or visiting the facilities. All it means is that organizations should design their offerings with special consideration to the needs, wants and expectations of the target market(s).

Nor does target marketing mean that service agencies/organizations should ignore low income persons or other segments who have limited "ability to pay." If the stated mission of the organization is to provide opportunities at low or no cost for lower income persons, then obviously, this represents at least one of their target markets.

DEVELOPMENT OF INTEGRATED MARKETING

Development of integrated marketing mixes—service, price, place/ accessibility/ location, and promotion/ communication—is essential to effective marketing. The marketing mix should be viewed as an integrated and consistent package of offerings that reflects the characteristics, and satisfies the needs/ wants/ expectations of target customers/ publics. According to Shapiro (1985), the marketing mix provides managers with a way to insure that all elements of their program—program attributes, fees, promotional messages—are considered with an emphasis on the fit between the different elements.

The problem in many organizations is that different functional areas often have responsibility for, or significant influence on, elements of the marketing mixes of other functional areas. Sometimes, different functional areas do not share the same goals and/or objectives. Unless different functions share similar goals and objectives, or are at least aware of what other functions are attempting to accomplish, major marketing mix inconsistencies can, and do, result.

PROGRAM AND PRODUCT (SERVICE) LINE AUDITS

One of the greatest strengths of businesses is that they go out of business if their products or services do not meet customer expectations. Unfortunately, government agencies and non-profits do not have the benefit of such a clear cut and immediate indicator of the success or failure of their efforts.

They can sometimes continue to offer programs and operate facilities which either inadequately serve the intended markets/publics, or serve markets which really don't exist. This makes it all the more important that agencies and non-profits regularly audit their programs and product (service) lines.

The word audit means a critical, unbiased review. There are two different levels at which audits are conducted:

(1) individual programs, facilities, services; and,

(2) the mix (product line) of programs, facilities and services offered by an organization.

Although significant attention has been directed at the importance of evaluating individual programs, facilities, and services, much less attention has been directed at "product (service) line" audits.

RESEARCH

Research has shown that organizations with the poorest performance, do not regularly audit their products and programs from the customer's point of view (Garvin, 1983). As one author put it, "If you can't (or don't) measure it, you can't improve it (Moore 1988)." The most effective businesses monitor and analyze (product/service) performance information collected from a variety of different methods.

They recognize that the only good reason to collect performance data is to assist in improvement; they don't fall into the common trap of collecting data only for collection sake. They also know that, "Performance information in the hands of many people is a very powerful way to gain both commitment and improvement (Androne 1988)," and therefore communicate performance information on a regular basis to employees throughout the organization. Maybe most importantly, they work hard at developing an organizational culture where employees view the results of performance assessments as an opportunity rather than as a threat or indictment of their individual performance.

DECISIONS

All organizations, including interpretation and environmental education providers, are continually confronted with decisions on how to best invest and disinvest their resources. These decisions are often not made in an objective and systematic manner. Frequently they are only conducted (in a hurried fashion) when budgets are reduced.

Over the last several years there has been much greater attention in the business literature to the need to regularly conduct "product (service) line" audits or what some refer to as "portfolio analysis." Although relatively few agencies or organizations regularly conduct this type of audit, I believe they can, and should.

Product-line audits focus on the "goodness of fit" of existing programs/services/products including:

(1) the degree of "fit" with the organization's mission, goals and objectives

(2) how well they "fit" the needs and expectations of the target market, and projections regarding the future size/growth of those markets

(3) the degree to which they "fit" with current and expected capabilities (resources) of the organization

(4) the "fit" with the organization's other programs and services, and

(5) their strengths/weaknesses relative to "similar" (i.e., serve the same customer needs) programs/services offered by other providers ("the competition").

No matter how well an organization is managed, at any given time they will have programs and services which exhibit varying degrees of "fit". Some programs will "fit" well. Others may not be adequately satisfying important target market(s)/public(s), but could be if they received additional resources.

Others should be phased out because they no longer (or never did) "fit" the mission of the organization, or the expectations of priority markets/publics. Product-line audits can assist interpretive and environmental education organization in making better investment, disinvestment (cutback), and re-allocation decisions.

QUALITY ASSURANCE

Persons who visit interpretive and environmental education facilities and/or participate in programs, are more discriminating than ever, and are expecting and demanding much more in terms of facility, program, and service quality (Mahoney and Warnell 1990).

It doesn't matter whether the facility or program is provided by a business, governmental agency, or not-for-profit organization. Failure to provide, and continually improve service/facility/ program quality will make it difficult for organizations and agencies to retain existing customers and attract new ones, maintain the support of their different publics, and attract resources (e.g., contributions, budget allocations, volunteers). As one author put it **"Today's quality is tomorrow's reputation (Mead 1985)."**

Given the increasing importance of "quality" and responsiveness to customers/publics, it is no wonder that quality assurance is a topic of considerable interest and discussion among managers and employees of service organizations. However, relatively few service organizations or agencies have developed and implemented systematic quality assurance programs.

One of the reasons is that service providers, including some interpretative and environmental education organizations/agencies, have a hard time defining quality. It is true that many characteristics of services-intangibility, active involvement of customers, importance of employee-customer interactions-makes it difficult for organizations to specify service quality. However, it is still important and possible to define and manage service quality.

While definitions of quality vary, most quality assurance experts agree that any definition must be customer/client focused and relevant. John Guspari, a recognized expert in the field of quality assurance, argues forcefully that **"The customer (client) is the final arbitrator when it comes to quality" (Guspari, 1988).**

Hagan (1984) states:

> It is not those who offer the product/service (e.g., interpreters) but those whom it serves - customers, users - who will have the final word on how well a product/service fulfills needs and expectations (Hagan, 1984)." Any definition of quality that does not include the customer's viewpoint is incomplete, and any concept of quality that is not oriented to user satisfaction will not be adequate.

Unfortunately, some interpreters and environmental educators have difficulty accepting that the era when businesses or organizations decided on what is best for their customers (and what constitutes quality) is at an end (Sarazen 1987). They still believe that they "know what's best," and stubbornly hold to this belief even in the face of declining visitation and institutional support.

Guspari observed that,

> "Quality (even service quality) is not complex, in fact it is rather straight forward. But it is hard. Quality is precisely about:
>
> (1) details
>
> (2) treating customers like people; and,
>
> (3) making sure that customers get what they (expect) pay for."

This will require that agencies/organizations develop, implement and monitor cohesive, integrated and customer focused quality assurance programs (Mahoney and Warnell 1990).

MARKETING INTERPRETATION AND ENVIRONMENTAL EDUCATION

All interpreters and environmental educators, regardless of their position/job or organization, are (should be) in the business marketing the importance and contribution of what they do, and the profession. This is often referred to as institutional (as opposed to product/ service) marketing.

It is important that interpreters and environmental educators make a concerted effort to tell their story and educate people, especially decision makers, about interpretation and environmental education. We also need to communicate more effectively how interpretation and outdoor education can assist organizations to accomplish their missions, goals and objectives. In other words, we need to do a more effective job of interpreting interpretation.

Successful service (and institutional) marketing always begins with a service (profession) that meets the needs and expectations of target markets and other important publics (e.g., contributors, budget decision makers). There is an old saying among marketing people, that not even the most high pressure sales person, or costly promotional campaign, can sell a bad product twice.

ABILITY TO EFFECTIVELY MARKET INTERPRETATION AND ENVIRONMENTAL EDUCATION

Our ability to effectively market interpretation and environmental education will in part depend on whether we:

(1) clearly understand and can communicate what business(es) we are in and not in, and the reasons/rationale for being in that business,

(2) provide, and effectively market, the type and quality of service desired and expected by different target customers/publics; and,

(3) are, and can demonstrate that we are, efficient and effective managers of the resources we oversee and are provided. This will in part require that we approach interpretation and environmental education in a more "businesslike" manner.

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ENVIRONMENTAL PROBLEMS:DELIVER THE MESSAGE—BUT KEEP 'EM SMILING

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INTRODUCTION

Earth Day I in 1970 brought the need to communicate environmental issues to lay audiences without doom and gloom and to non-science teachers without the details of scientific principles. Such issues can be described through other disciplines. Thus, the topic of air pollution and acid rain will receive the attention of those who have a special interest in things of historical significance that are dissolving (the Parthenon in Greece) or other items of cultural and religious importance that are changing (da Vinci's Last Supper). The audience's attention is also gained through the humor that can be linked to fast foods, special fads, TV commercials, and even staid environmental topics. Now's the time to consider these possibilities—the 20th Anniversary of Earth Day occurred this year!

COMMUNICATE EFFECTIVELY

Effective communication about environmental issues is still a challenge. But it can be a much more pleasant task than imagined. Yes, there is a simple method for keeping members of your audience on the edge of their seats in anticipation of your next line.

Example! We once learned to read by using the primer with the story of Dick and Jane and Spot, the dog. However, if you're writing that story today, Spot should be on a leash...and neutered!

Looking at the act of communicating from a different angle reveals that many elementary students skip out of school every day singing a 20-second TV commercial they heard the night before. Have you noticed: They don't always whistle the message just received in the classroom or on your nature trail? Now why is that? I regret to say that we have some of the most creative minds in this country making TV commercials. Schools of Education need a few more required subjects, such as TV Commercial Script Writing; War and Peace Jingles; The Use of Life Savers in Photographing Blood Cells; How to Use 1987 Stock Market Graphs Sideways; and much more.

ENVIRONMENTAL ISSUES BY PRESENTING THE PRINCIPLES

We must look at environmental issues by presenting the principles on which they are based. But we can also inject some common sense as well as humor and a gimmick to catch the fancy of the audience.

There are several ways of looking at some of these problems, too. I've talked to thousands of audiences. I'm the culprit who started action that resulted in stopping the dam (spell that any way you wish) projects of the Corps of Engineers. During all of this action and interest, which started long before Earth Day I, I find that I can get away with more, and people are more apt to believe me, when I wear a dark blue suit...as I get more gray. Let's look at a few environmental issues and consider how some of the stories might be told.

The American Dream—having a green lawn around your house, all nicely manicured. The closest natural thing to a lawn is a prairie. Consider the energy and water used in maintaining a lawn of grass. Consider your harassment! No one will argue that your neighbors want YOU to have a nice lawn of grass. How can you do that? Well, the first advice one usually receives is to buy grass seed from a local nursery—because that seed has been either genetically engineered or plucked from a selected plant. That's right! Somebody spent a lot of time in the laboratory splicing genes and in the fields selecting plants, agricultural businesses and institutions spent much time, money, and space in growing various kinds of seeds in various parts of the country to determine the commercial feasibility of new strains. (All of this also provided financial support for graduate students.) But let's assume the work has been done, the correct genetic combination for your part of the country has been found, and you can now buy it at your local nursery.

Read the package carefully. It will tell you what kind and how much fertilizer to use at what time of the year. Forget that most of the nitrogen-rich fertilizers are made from natural gas. (Could it be someday we'll have to choose between keeping warm and having a green lawn? Believe me, your neighbors want you to have a green lawn.)

A rule of thumb indicates that the average 10,000 square-foot lawn in the United States required between five and ten 50-pound sacks of fertilizer.

Don't cheat and use less. The graduate student was paid to determine how much fertilizer your lawn needs. One 50-pound sack of nitrogen-rich fertilizer equals about 162,000 BTUs. The British Thermal Unit is not necessarily the best unit of measure for energy, but we got used to BTUs by way of window air conditioner units at least 25 years ago. It's not a good way to measure energy, but let's continue. 162,000 BTUs.

Why do we put this fertilizer on the lawn? To make the grass grow! But let's not have it grow too much. Remember, your neighbors also want you to have a nicely manicured lawn. And so the grass grows and we reap the crop. Each week we see the need to **CUT THE GRASS.** Here you must reflect on St. Matthew 9:37, where we are told that "The harvest truly **IS** plenteous, but the labourers **ARE** few."

In any case, you've got to cut it off before the bugs get it. (And the seed package also tells you what kind of insecticide to use. The graduate student worked on this too.) You see, you can spend money to purchase a product that took much energy to make, in order to pollute your own property.

Reaping the crop. That's when the man of the house goes out on a Saturday morning for his weekly exercise and sits in the seat of his lawnmower. To reap the harvest of the average 10,000 square-foot lawn takes about one-half million BTUs annually.

We just made it grow and now we cut it off. If fact, I think one of the unwritten laws of most community maintenance departments is: **IF IT GROWS—CUT IT OFF!**

And now you're stuck with a whole pile of grass. Those who sometimes are in the know put the harvest on the compost pile. Others put the harvest in a plastic sack—made from petroleum. This neat package is put on the curb, hoping it will be picked up next Monday and taken away to never-never land. And we don't want to know where that is!

It takes water to make all of this happen, and the seed package tells you how much water to use and how often to use it. We should remember that the water was treated...shall we say ***"to make it drinkable?"*** That treatment requires energy. Rather than drinking it, however, we put it on the lawn. Or we keep our cemeteries green. Believe me, when I'm gone and six feet under and ready to be recycled...don't water me! I'll never miss it.

The seed package is a veritable manual on Lawn Ecology. Unfortunately, the instructions do not exactly conform to ecological principles. What we lack is an operator's manual for Earth. We can learn many lessons in economics, energy, art, physics, mathematics, social studies, and more—If we just **LISTEN TO THE EARTH**.

All of this will never concern those who are really in the know. Remember in 1976 when everybody worked on a Bicentennial Project? Well, you didn't catch me painting fire hydrants to look like little Revolutionary War soldiers. This was right after the 1973-1974 oil embargo. The problems in getting fuel for the automobile were on our minds. We were tacitly thinking about energy.

And then I reflected on my boyhood and remembered that my father was **ALWAYS** putting in a lawn. Perhaps 1976 was the time to raise a prairie as my front lawn in Kansas City, Missouri. My very own Bicentennial Project in a part of the country that was once all prairie. I raised buffalograss. This kind of grass has been genetically designed by powers greater than ours. Buffalograss has rather strict environmental needs. It grows only on hard, compacted soil.

Well, I had that! Buffalograss won't grow if you add too much water. That suited me, too. And to maintain the lawn my neighbors wanted me to have meant that it had to be manicured. But the short-stem buffalograss had to be cut only once each month. My son liked that idea.The seeds were sown in June and watered until germination occurred. After that the only water my prairie got was that which came from the skies. Prairies only get water when it rains.

I saw to it that word got out about my Bicentennial Project. And from the initial stage, TV cameras and newspaper photographers were there. They came around about once a month to see how things were coming along. By the end of summer in 1976 my neighbors were worried about the brown fungi attacking their lawns, while I had the only green lawn in the neighborhood. Numerous commercial companies contacted me about the use of buffalograss on their properties. In any event, I got the story out and many people learned a lesson the easy way—and if they practiced what I was preaching, it saved them money.

It appears that we must continue to offer lessons we consider important to environmental issues, to conserve the natural resources of Earth.

How can we catch the eye and ear (and the brain) of our audience? We still waste natural resources...and we do not use our brains to the full. The human brain! Our best computer yet! Only slightly larger than two human fists...weighs less than two pounds...and it's portable. Unfortunately, our discs are too floppy!

This presentation treats the fine arts; the masters of the Renaissance; acid rain; the Parthenon in Greece; politics; economics; sociology; some of our new foods on the grocery shelf; and much more—with humor, but with truth.

INTERPRETATION FUTURES IN RESOURCE MANAGEMENT

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ABSTRACT: A growing urban population is becoming less and less understanding of agencies managing the public lands. While a communication or interpretive approach to developing public understanding has not been used in the past, it does look like we are making a breakthrough. New approaches in interpretation are being used by all resource management agencies today. The Windows On The Past program, the Scenic Byways, the variety of partnerships, the Passports In Time, partnerships in interpretation and "Friends of" groups are a few of the ways the resource management agencies are involving interpretation in their programs today. The future has greater potential.
KEYWORDS: communications, interpretation, associations, partnerships, objectives, management, natural resources.

INTRODUCTION

We are facing a future in which people the people we serve are becoming increasingly more urban, better educated, and more environmentally aware. And by more environmentally aware I mean they are hearing more about environmental and natural resource related issues but they are necessarily learning about them in any depth. They read a headline about the rainforests of Brazil or catch a story on the news about an endangered animal or plant or, even closer to home, are reminded of the need to recycle. You've heard the expression ***"a little knowledge can be dangerous."*** I look on this increased awareness as great news.

The more the public is aware of the world around them the more likely they are to be careful with that world. It doesn't matter if they are zipping around on their ATVs or visiting a historic area in the middle of downtown Los Angeles. The more they know about their surroundings the more respect they will have and the better they will protect it from themselves and others.

NATURAL RESOURCES

We, in the natural resource and land management communities, have never been better positioned to provide top quality interpretation to our visitors. They are ready to soak up whatever information we can provide. Studies show that today's vacationer is looking for more than just entertainment, more than just a t-shirt for souvenir. When they go home they want to do so with new information. It can be environmental, historical, cultural or anything else. We see it all the time with volunteer vacations, elderhostels, weeklong or weekend university courses. The public is definitely ready.

OUR CHALLENGE

I think our challenge is to convince resource managers of the benefits of interpretive education to programs other than recreation and visitor services. We need to show them how ***involving*** the public will gain them allies rather than enemies, will increase understanding rather than blind acceptance or rejection, and may even help them get the job done with community assistance in the form of volunteers and partners.

"MANAGER AND EXPERT WITNESS IS NOT ENOUGH"

In the August issue of the Journal of Forestry, Dr. John Hendee's article, "Manager and Expert Witness is not Enough" relates the need for the forestry profession to become more in tune with the citizens of the nation. He says that forestry's future success will depend on how natural resource professionals interact with the public. He says,

> First we need to be teachers. We must initiate other new programs that will help the public understand natural processes and instill a resource management ethic as the key to protection and production of resource values.

John Hendee's second point is:

> We need to be outdoor leaders. Forests are growing places for people as well as for trees. We need to feature that principle in our resource management leadership.

What an opportunity for interpretation in the future of resource management. All of us should stand up and yell, Amen! It has been a long time since we have heard from the colleges of natural resources and forestry in regard to environmental education or interpretation. This must become the wave of the future as our citizens become more urban and less knowledgeable of the fields and forests that surround their communities.

OBJECTIVES OF INTERPRETATION

In the book, Interpreting The Environment, by Grant W. Sharpe, the author discussed the three objectives that interpretation seeks to achieve.

> The *first* or primary objective of interpretation is to assist the visitor in developing a keener awareness, appreciation, and understanding of the area he or she is visiting. Interpretation should help to make the visit a rich and enjoyable experience.

The ***second*** objective of interpretation is to accomplish management goals. The ***third*** objective is to promote public understanding of an agency's goals and objectives. I will focus this paper on the first of these objectives and by doing so achieve the second and third, also.

In the past much of the efforts of the interpretive naturalist was to develop a sense of awareness on the part of the visitor rather than appreciation and understanding. And this was due in a large part to the limited time he or she had with the visitor. This was also true because we did not always have our goals worked out in advance of our program, nor did the Agency understand the potential of interpretive messages.

WE HAVE AN AUDIENCE

With three of four Americans interested in their environment, according to the latest Gallop Poll, we have an audience that wants to know and wants to understand what is happening to this global ecosystem we call Earth. With the advent of the National Forest Recreation Strategy, we have begun to refocus our thinking and action in regards to our efforts at interpreting the resources of the National Forests. Of the six commission reports given at the Lake Geneva, Wisconsin workshop in October of 1987 four of the commissions gave strong endorsement and support to a revitalized interpretive program in the National Forests.

WINDOWS ON THE PAST

Since then we have moved into several new areas related to interpreting the natural and cultural resources of the National Forests. The "Windows On The Past" program is just such an excellent example. With the various laws requiring the public agencies to find and identify cultural and historic resources before any significant action is taken on the ground, we have a variety of sites already located. There are many sites of special interest to the visitor and history buff.

"WINDOWS ON THE PAST"

During the past couple of years the "Windows On The Past" program has brought many of these sites and areas into light with interpretive programs, signs, on-site interpreters, brochures, and other publications. This has given rise to the "Passports In Time" efforts that allows the visitor to become involved in an archaeological dig or search.

This program is a growing one that involves thousands of visitors and volunteers in valuable archaeological work that is fund and rewarding to the participant. The interpretive efforts of this program will provide benefits for other visitors and users of the National Forests in years to come. With 191 million acres of National Forests the opportunities are great indeed.

From the management standpoint, our managers have found that the more the public knows about the cultural or historic sites, the more it is protected from vandals and those individuals seeking materials for a private collection. The use of a variety of interpretive techniques in this endeavor gives the cultural resource specialist and interpreter an opportunity to bring the sites more to life.

TREAD LIGHTLY

Tread Lightly....along with Windows is a good example of how when people are better educated about something they respect it and when they respect it they are more willing to take good care of it.

These are some fairly new programs but they have been very successful in sending a message to agency managers about how interpretive programs can actually lighten their workloads. For example, our law enforcement people are pleased with the decreased "pothunting" as result of the Windows program. Less pothunting and vandalism mean less work for them and if that's the case maybe they can spend some of their valuable time and money in interpretive work...

SCENIC BYWAYS

With the advent of this program to the present we have 68 scenic byways approved by the Chief of the Forest Service. Over the years the Forest Service Engineering staffs working with federal and state highway departments have created a number of highway designs that traverse the National Forests. Many of these designs take the visitor through scenic country.

The recognition and dedication of a highway as having high scenic quality draws additional vehicles and visitors to the area. Each highway must have an interpretive plan that can help in developing a keener awareness, appreciation, and understanding of the area he or she is visiting. The plan should help to achieve management's goals as well.

The Byways program is a smashing success and has a great future in resource management on the public lands. The efforts of the Bureau of Land Management with its "Backcountry Byways" is an other example of a program that has high public interest. The interpretive program that accompanies the identification of the route will be the key to its success or failure in the future. The biking trails with accessibility for the handicapped, the signs at pull ours, the information kiosk, the publications and the audiotape are all elements to bring the route to life, thereby enhancing the experience for the visitor. With the growth of this program video tape will become available that the visitor can purchase to bring back the memories of summers past. One of the key elements in the total recreation experience is reflection. Here again we have great opportunities for the future of interpretation in resource management.

INTERPRETIVE ASSOCIATIONS

During the past five years we have had growth in the number of associations and in gross sales and donations to the Forest Service. The concept of a non-profit association organized around the promotion of interpretive, informational and educational materials for the visitors to the National Forests had been mind to a number of individuals within the agency, but the associations are growing in number, size, gross sales and donations.

Why? Because people want to know about the flora, fauna, geology, the old mining camp and all the other things that happened or can happen on the Forests, grass lands, rivers, mountains, deserts, swamps, and other places that fancy their interest.

What an opportunity for the resource management agency to build appreciation and understanding. The potential for these associations to become more involved in living history programs, guide services and research is yet untapped. The work of the Pacific Northwest Park and Forest Association in the Park and Forest Seminar Series is a successful one with great opportunity for growth. The Elder Hostel program that is now underway in the Alaska Region has yet to reach the other Regions in the lower forty eight states, but is growing.

FRIENDS OF THE FOREST

The future of the "friends of" groups with regard to the public lands has great expectations. Several years ago William Mott, the former Director of the National Park Service told his Park Superintendent that he wanted a "Friend of" the park organization in every Park and Monument within the National Park System. While this has not yet happened there are a great number of friends groups related to the National Parks. The role of the Friends group is somewhat different than that of the Interpretive Associations. Their reason for being usually has

Monument within the National Park System. While this has not yet happened there are a great number of friends groups related to the National Parks. The role of the Friends group is somewhat different than that of the Interpretive Associations. Their reason for being usually has to do with fund raising, a new development, or establishment of some new program. Memberships and visibility are important to the group.

In the National Forests, the Tahoe Run Trail Association and the Friends of Mt. St. Helens are good examples of this type of association. They are organized about a specific mission. I think that we can look forward to their growth. With strong local support and interest in a particular wilderness, a river, trail, historic site or cultural resource we can expect to see increasing numbers of associations in the future.

PUBLIC AND PRIVATE PARTNERSHIPS

During the past three years the partnerships between the private sector and the public sector has grown materially. We can expect this trend to continue into the future with all the public land management agencies. We have a partnership in Interpretation endeavor that has been in its development stages on the Superior National Forests and has a great potential for a public/private partnerships.

The relationship of the university to the public agency and the private outfitter, resort owner, or guide service has great potential for a successful enterprise. A new brochure explaining this partnership is in the making, as is a video tape on the program that will be out next spring.

SUMMARY

At the beginning of this paper we talked about the future of interpretation in the Resource Management agencies. For a program that is without any funding source other than the generic recreation funds, the program is doing well and will continue to do well in the future, because the public is interested in this type of program.

In recent conversations with the people at Amtrak, we discussed the number of opportunities across the nation where an interpreter could enhance the passengers trip or provide new insights into the landscape through which the train is passing. With the interpreter on board the public gains new knowledge. Amtrak gains greater visibility and increase passenger use.

LAND MANAGEMENT AGENCIES

The land management agencies gain increased visibility and awareness of the natural world. This is but one small effort in the change that is taking place in the resource management agencies. With visitor expectations changing we in the public agencies must rise to meet the challenge. We are in the third wave society as Alvin Toffler has so eloquently pointed out.

THE OPPORTUNITY

The opportunity to receive communications about one subject or another surrounds us at every point on our way through the day. In conclusion....our customer base is much broader than many people realize. Our customers are urban as well as rural.

We must go to the cities and schools to share the message as well as wait for some of these people to come to us in the forests and parks. And our customers are internal as well as external.

We must convince land managers that interpretation is everyone's job not just those individuals whose position descriptions actually say naturalist or interpreter or information technician or visitor center director.

Interpretive programs are keyed to communication. The future looks good for interpretation in the Resource management agencies.

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FEDERAL INTERAGENCY COUNCIL WORKSHOPS

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ABSTRACT: The Federal Interagency Council on Interpretation and the National Association for Interpretation jointly developed the idea of sponsoring four regional, thematic, interdisciplinary workshops to explore and discuss the role of interpretation in the solutions of management problems. The workshops were to focus on developing a Federal strategy for interpretative efforts for the decade of the 1990's and into the next century. Five topics were selected for the workshops: Evaluating the Effectiveness of Interpretation, Managing and Preserving Cultural Resources Through Interpretation, Interpretation and the Future of Wetlands,Interpreting Climatic Changes and Global Warming, and The Environment and Economics—What Role Does Interpretation Have. To date (July 1990) three of the workshops have been held and two are scheduled to be held during the fall of 1990.
KEYWORDS: evaluation, cultural resources, global warming,wetlands, economics

INTRODUCTION

Each regional workshop was organized and sponsored by pairing two of the agencies on the Federal Interagency Council on Interpretation (FIAC). Limited attendance from each of the FIAC member agencies as well as NAI, state and local agencies, private organizations, and colleges and universities was permitted at each of the workshops. The purpose of the workshops was to focus on developing a Federal strategy for interpretive efforts for the decade of the 1990' and into the next century. What follows are the executive summaries from each of the three workshops that have been held to date (July 1990) and summaries of the purposes and what we hope to accomplish at the remaining two workshops.

EVALUATING THE EFFECTIVENESS OF INTERPRETATION

The workshop was held in Madison, Wisconsin, on 16-22 April 1990, and was attended by 21 representatives from all levels of Federal and State agencies, Canadian Parks Service, colleges and universities, and private individuals.

The purpose of the workshop was to develop a strategy for establishing standards for evaluating the effectiveness of interpretation which can be used by all Federal agencies well into the next century.

All parties agreed that acceptable operational definitions must be established before further work could proceed. As a result, the following definitions were established.

1. Evaluation is a process of ascribing value to an object, action or program.
2. Evaluation of interpretation is a multi-dimensional process used to determine the qualities of interpretation and is an integral part of all interpretive operations. The process includes input and feedback and considers the interrelationships among people, organizations, environments, and technologies. Evaluation includes many techniques ranging from quantitative to qualitative.
3. Effective evaluation of interpretation identifies strengths and weaknesses of interpretive programs and services and results in appropriate responses. It is practical, efficient, reliable, valid, empathetic, ethical, flexible, and timely. Effective evaluation results in improved

interpretation, increased efficiency, or verifies its effectiveness.

The workshop then developed a model which illustrates the basic components of interpretive evaluation. All components are interrelated. These components are affected by and in turn effect the resource environment, management organizations, and visitors.

The workshop participants then developed detailed outlines which addressed each of the components of the model. Specific conclusions and recommendations of the workshop participants related to the specific parts of the model are as follows:

The National Association For Interpretation should work toward the development and acceptance of specific standards, guidelines for application, pitfalls and caveats, and examples and illustrations.

Universities, professional organizations and agencies have specific roles to play in the area of training and education. All three should work together using the workshop recommendations to establish specific training and education roles.

Research should lead to action (be goal oriented). Agencies should collect usable data instead of using collectable data. Specifically, the workshop recommended that research be conducted on visitor base, organization base, and environmental base.

The National Association For Interpretation should take the lead in establishing an information exchange service which will facilitate information exchange throughout the interpretive profession.

The specific details on each of the parts of the model can be obtained from the workshop report of findings which is available from the NAI National Office.

THE MANAGEMENT AND PROTECTION OF CULTURAL RESOURCES THROUGH INTERPRETATION

During the week of May 8-11, 1990, a group of 23 interpreters, cultural resource specialists, and park/resource managers representing each of the major U.S. land managing agencies, units of State and local government, and the private sector met at the Bureau of Land Management's Phoenix Training Center to discuss how interpretation could assist land managing agencies in meeting their cultural resource stewardship responsibilities. In addition, the group examined the special needs of ethnic minorities, senior citizens, and the physically challenged to determine how land managing agencies could overcome the real (and perceived) barriers effecting the public's full use and enjoyment of these nationally significant lands and resources.

The following is a summary of the major findings of the workshop participants.

1. Each participating agency provides interpretative programs oriented around cultural/historic resources. Individual authorizing legislation has a significant impact on the scope of agency interpretive efforts. When recreation and related uses are a primary focus of management, interpretation is an integral part of the operation. When commodity resource development is, or has been , a priority, interpretative efforts are inconsistent and are generally the result of individual, rather than agency initiative. Interpretive programs tend to focus on information rather than attempting to influence attitudes and behavior.

2. Generally, agencies have limited their interpretive programs to the resources located within individual administrative units (parks, forests, refuges, etc.). Efforts to reach out into population centers where most of the public lives have not been a management priority. This inward focus has also contributed to a lack of coordination among agencies and/or has lead to unnecessary duplication of interpretive services provided to the public.

3. Ethnic and cultural differences impact public perceptions and the level of community involvement. Agencies have not done an adequate job of examining their audiences and developing communication approaches tailored to meet the needs of each target audience.

4. Long-standing agency policies and a reluctance among professional archaeologists regarding limiting public information about the location of cultural resources has not proved to be an effective protection measure. Isolation and lack of people (both visitors and agency personnel) on site have contributed to vandalism and looting problems.

5. On-site cultural resource interpretation programs often lack depth and/or do not provide opportunities for public involvement. This has contributed to a lack of repeat visitation at many administrative units.

6. The number of trained, professional interpreters has declined in recent years. As a result, agencies have had to rely on their cultural resource management staffs to provide interpretive services to the public. While qualified to perform their primary duties as archaeologists and historians, many do not have training or experience to speak or write for the casual, non-professional audience.

Following is a summary of recommendations made by the participants in the workshop.

1. Interpretation must be directed outside unit boundaries with an emphasis on developing a sense of public ownership, identification and appreciation for cultural resources. While programs must continue to provide accurate and factual information, future interpretive efforts must also focus on resource values, laws, and appropriate uses. Whenever possible, interpretation should encourage community/public involvement to help foster support for the management and protection of cultural resources.

2. Agencies should reassess their long standing policies of withholding information about the location of cultural resources from the public. The public should be encouraged to visit cultural sites in order to provide additional human presence in remote areas. Protect sites through signs, brochures and physical developments (trails, barriers, overlooks, etc.) which direct visitors to appropriate locations while on site.

All signing and publications should inform the public of their legal obligations to leave sites and artifacts alone. In the case of truly sensitive locations, site information should be withheld with signs being located so as to be seen only when a visitor is on the site.

3. Effective cultural resource management programs must include a public outreach component. In developing management and protection measures, trained interpretive staff and/or outside communications experts need to be involved early and often in the process to ensure that correct and accurate information is being provided to the public. Evaluating the effectiveness on interpretive programs in the context of changes in visitor behavior attributed to interpretive services must be included whenever possible.

4. Coordination between professionals in interpretive services and those involved in cultural resource management must be improved. Functional areas where immediate improvements in coordination can be achieved include the review of publications, public presentations and media programs and the identification of research needs.

5. Encourage agencies to support professional growth in the field of interpretation. Provide training in public speaking and popular writing skills for cultural resource specialists and others involved in public contact and interpretation. Where possible, encourage colleges and universities to include course work in these skills as part of their undergraduate requirements.

6. Agencies must do a better job of assessing the makeup of the various publics using their facilities and areas in order to determine the most effective communications approach for each group. Develop interpretive messages tailored to each identified target audience.

7. Reach out to groups which are currently under represented in public land visitation statistics (ethnic minorities, the physically challenges, senior citizens, etc.) by involving them in both the planning and implementation of interpretive projects. Actively recruit members of such groups for interpretive positions in order to help break down real and artificial barriers preventing full use and enjoyment of public lands and facilities.

Finally, agencies should direct a portion of their interpretive energies to sites and areas that convey the contributions that ethnic populations have made to the settlement of the country and/or are important to these populations.

8. Agencies at all levels of government must improve the level of coordination regarding interpretive efforts. Recommendations include the establishing of a centralized clearinghouse for cultural resource interpretive information, implementing interpretive planning efforts on a regional basis, developing interagency public affairs programs designed to provide consistent resource protection messages, and developing cost sharing arrangements between agencies, educational organizations, private groups, and concession operators.

INTERPRETATION AND THE FUTURE OF WETLANDS

This workshop was sponsored by the Federal Interagency Council on Interpretation, the National Association for Interpretation, the U.S. Fish and Wildlife Service and the Tennessee Valley Authority. It was held in Atlanta, Georgia, on May 8-11, 1990. It's purpose was to explore and discuss the role of interpretation in the solution of wetland problems facing the management of wetland resources in North America during the next decade.

The workshop brought together 26 individuals (9 speakers and 17 participants) representing Federal and state agencies and university organizations.

The goals of the workshop were to:

1) provide a forum for an interagency discussion on how interpretation can help to manage the
future of wetlands,

2) produce a position paper summarizing the results of the discussion , and

3) take the first step in establishing a common ground for all of us to use when interpreting the diverse and complex nature of wetland issues to the various publics.

The first day and a half of the workshop was devoted to speaker presentations and discussion. Participants were then divided into small groups to draft a general topics outline: an introduction, human impacts, natural processes, and management and legislation. Each group was assigned on of the topics to develop thoroughly. The entire group reconvened for an editing exercise on the final day.

The resulting position paper provides important background information on wetlands, a list of recommendations on what can and should be done by all agencies to assist the management of wetlands, and specific actions that can be taken by interpreters to educate and involve targeted groups in wetland issues. The paper also includes several of the speaker's presentations and a list of references for further background information.

CONCLUSIONS

General conclusions and recommendations made by the group include:

1. Wetlands produce numerous benefits for society. As the nursery for much of life, they provide habitat for many species of fish and wildlife. Wetlands play an important role in reducing flooding problems by temporarily storing large quantities of water and by slowing the velocity of flood waters. They also help to maintain water quality by filtering out pollutants and sediments.

In addition, they serve to control erosion by trapping soil washed from nearby farmlands. And they are an important source of recreation and natural products for commercial use such as hay, rice, and timber. Wetlands are a vital element in the ecosystem, but they are rapidly disappearing. Why they are disappearing and how education/interpretation can slow the loss is discussed in the paper.

2. We as interpreters have a responsibility to inform the public about the need to protect our remaining natural wetlands, to restore wetlands that have been drained, and to create new wetlands wherever possible.

We should also inform them of existing Federal and state laws and regulations regarding wetlands and be able to identify organizations working to help protect our wetlands. We need to remain informed on current wetland laws and issues. This requires continuing involvement in workshops, seminars, and other training on wetland issues.

3. There is a significant lack of understanding and appreciation by the public for the aesthetic, recreational, biological, or educational values of wetlands. The public often feels far removed from the problems affecting these important environments. Furthermore, many people harbor somewhat negative feelings (or prejudices) about wetlands. Working in cooperative partnership with identified target groups can significantly reduce those negative feelings and consequential impacts.

4. The National Association for Interpretation could take a leadership role in the development of a standardized "curriculum" on interpretation of wetlands that all agencies could use. The workshop attenders were able to identify key issues that all interpreters should address when interpreting wetlands.

5. We as interpreters should support attempts to create a consistent national wetland management policy. We should also support cooperative research to develop better techniques for managing wetlands.

The specific details on each of the topics discussed can be found in the workshop report of findings, which is available from the National Association for Interpretation's National Office.

INTERPRETING CLIMATIC CHANGE

The Workshop on Interpreting Climatic Change was postponed from May 7-10 to October 22-25, 1990. At this writing (July 1990) this report must be prospective, although the workshop will have been concluded before the Charleston National Workshop.

Leadership of the workshop is vested in NAI, Interpretation: Canada, the Canadian Parks

Service and the National Park Service, with each represented on the steering committee. Morris Davison (CPS) and Bill Randall (NAI) are the co-chairs.

The workshop will be conducted in the Campus Center of the University of Massachusetts in Amherst. Details for prospective participants and registrations procession have been provided by Judy Giles in the NAI National Office. Each of the FIAC agencies and organizations has three allocated openings for participants, to be selected by its interpretive chief (or president).

The workshop will be forged from the following perspectives.

Ever since retreat of the Wisconsin ice the climate of many parts of the world have been warming, with fluctuations in rate and even cooling interludes. Sea level has been rising and many glaciers have been retreating.

With increased air pollution concern has arisen and activists and environmental organizations have been raising public concern about the "greenhouse effect". Legislators are feeling this pressure which is being augmented by increasing coverage by the mass media. More and more legislators are coming to feel impelled to respond to constituent concerns. A number of interpreters are among the crusaders.

On the other hand, many scientists (but not all) are unwilling to take similar stands. They claim there is no solid evidence of undue recent warming trends and there is uncertainty as to whether the greenhouse effect is, or will, cause such warming. The recent NASA (Huntsville)/University of Alabama project of satellite monitoring of world climates reported regional ups-and-downs, but no over-all change.

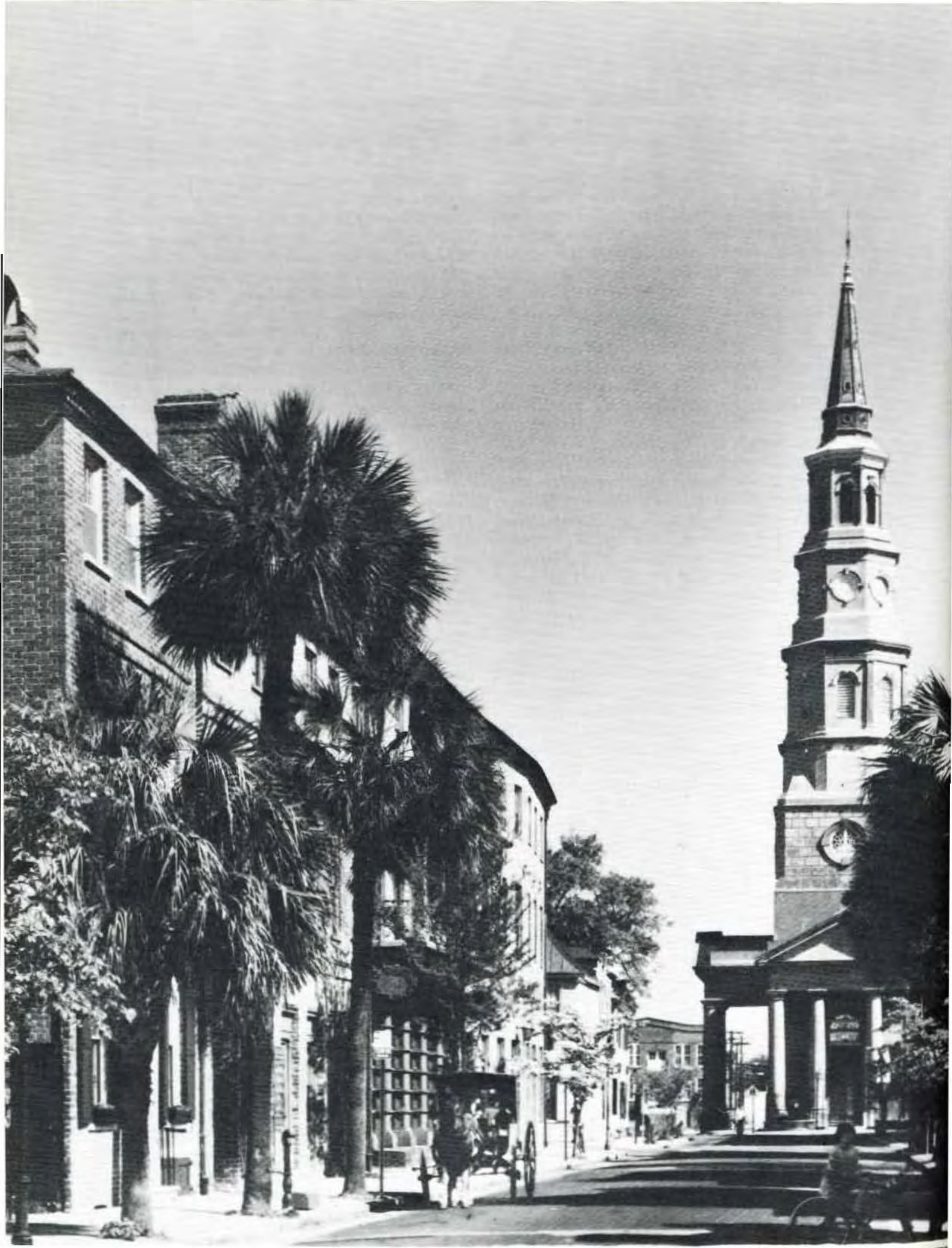
A recent mailing by an advisory service for investors, which claims great success and sophistication in predicting trends says: "And some studies have shown that, instead of creating a trap for heat, pollution actually seems to be 'brightening' cloud formations so they reflect more heat back to space. Instead of getting hotter, the world may actually be getting colder, trapped in an "icehouse" of bright, heat reflective clouds."

In the face of these conflicting views responsible action by the profession sees to consist of an up-to-date consideration by key interpretive personnel of the various perspectives so they may develop some recommendations and findings which can be published in LEGACY.

WORKSHOP

The plan for the workshop consists of four elements: the **first** is interaction with a selection of scientists with such specializations as climatic change and forests, climatic change and sea level, climatic change and water supply, climatic change and weather records, climatic change and the Federal perspective. The keynoter, Ian Rutherford, is Director of the Canadian Parks Service, and a recognized meteorologist.

Secondly, discussion with environmental advocacy representatives to probe their perspective shall be included. Also contemplated (thirdly) is consideration of the roles and responsibilities of interpreters in the face of uncertainty. **Finally**, the plan envisions formulation of synthesized statements and recommendations for interpreters.



INTERPRETIVE MANAGEMENT TECHNIQUES

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Sooner or later, anyone who spends much time in the interpretive field has to face the reality of *managing* interpretive programs and personnel. For most of us, this isn't nearly as much fun or as rewarding as the actual presentation of interpretive programs and the face-to-face interactions with our customers that is the reason many of us chose this profession.

"Profession" indicates *professionalism.* As this new decade of the 1990's begins, it is time for us to be looking ahead into the next century. It is now less than ten years away and it is appropriate for us to learn from some of our current successful interpretive management examples and to look ahead to new techniques and programs that will assure the continued satisfaction of our visitor's needs.

There were over twenty presentations at the 1990 National Interpreters Workshop that met these challenges, and the following papers will provide you with the tools to build other successful programs or adapt these interpretive management techniques to your own situations.

The range of papers is impressive, and reflects the progress of interpretation towards the identification and meeting of visitors needs. You will find that these papers explore interpretive management techniques from many different perspectives; enough to get you interested, involved and committed to better interpretation.

These papers discuss the management of volunteer programs from several perspectives; interpretive planning from Hawaii to Canada; marketing of interpretive and nature centers' creating a 21st Century interpretive program, political interaction strategies; public involvement techniques; exciting techniques for the selection, training and evaluation of interpretive programs; internal organizational interpretation; philosophy for change in the interpretive profession...and more. There is a gold mine here, folks!

As better mouse-traps are pushed aside by cromated laser-activated rodent-repulsers; it is time for you to take a look into your interpretive management toolbox and make room for new ideas and new approaches to interpretation. The following papers should be the first stop on your shopping spree for new interpretive tools.

MANAGING VOLUNTEERS IN THE 1990'S

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ABSTRACT: "Managing Volunteers In The 1990's" is a subject of deep interest to many park managers today. Few managers understand how to maximize their volunteer program's potential in a park or museum setting. This paper serves as a guide to set up a quality volunteer program or to revise your present one for better results. Methods of recruitment, communication, training and rewarding volunteers are discussed. In short, this paper will show you how to capitalize on your community—how to attract and use your local talent.
KEYWORDS: AARP; Awards; Badges; Certificates; Concessionaires; Database; Demographics; Firing; Interpretive; Management; Network; Newsletter; Newspapers; Nonprofit; Pre-planning; Projects; Radio; Recruit; Recruitment; Supervising; Survey; TV; Uniform; Volunteer; Youth

SECTION ONE: DO YOU REALLY WANT VOLUNTEERS?

Declining budgets, staffing cutbacks and increased visitation in today's park areas makes the decision to recruit volunteers a most important one. Unfortunately, most park managers lack a "complete handbook" on how to develop an active volunteer program; a program that is able to attract and, more importantly, retain good quality volunteers who can add to your park in more ways than just filling a open space at your visitor information desk. This paper will show you how to capitalize on your community—how to attract and use your local talent.

Volunteers can supplement your overtaxed resources and manpower or become an overwhelming source of frustration and personal anxiety on the part of the volunteer coordinator. The key, like all good management techniques, is good organization and thorough planning.

The first question is, do you want volunteers? Few managers will answer no, but those who answer yes must realize once they embark on this path they *must* be prepared to budget funds, promote the program and provide the necessary time for paid staff to adequately plan, manage and supervise. It is relatively easy to attract volunteers but the real challenge is to retain them and oversee the growth of a lively program.

Much time is needed to develop your new volunteer program or revitalize an old one. Top management must be in complete support of the concept of volunteerism, assisting the volunteer coordinator in preparing staff to accept these assistants. If paid staff see volunteers as a threat to their own jobs, then managers *must* develop strategies to overcome this fear.

Management must insure that volunteers never permanently replace vacant paid staff positions. Volunteers should be used to provide additional services or provide time in routine operations allowing staff to complete higher skilled duties.

A BUDGET

A budget is needed to start up your planning and initial training program. Training and other expenditures will be needed to promote the program even after it is up and running. The program coordinator must view the managing and supervising of volunteers like any other **primary** aspect of their job.

Before your first volunteer arrives in your park you need to identify potential positions. Formal position descriptions *must* be written for each of these jobs. One important overlooked area is using volunteers for project-oriented activities.

While trail maintenance or park clean up parties are great for big one-day youth group outings, you should target long-term single project activities, like the 3 year backlog of uninventoried slide and photo files or recent library acquisitions. Castillo de San Marcos NM recently completed our computerized national catalogue inventory of over 5,000 artifacts with a team of volunteers finishing the entire project in 1 1/2 years with one staff member overseeing the input operation.

SECTION 2: HOW DO YOU RECRUIT AND START OUT NEW VOLUNTEERS?

The American Red Cross recently completed the *Volunteer 2000 Study* which is perhaps the best synthesis of volunteer demographics to date. You will be competing with an increasing number of noble causes for your volunteers. The United Way of America estimates there are seven million organizations within the nonprofit sector, with assets totaling $130 billion. Two out of three existing nonprofit groups have come into existence since 1960.

In the 1950's and 1960's volunteerism was focused on a number of small, private foundations. Today, the rise of volunteerism is greatest in the number of new fields and self-help groups like: teen-age pregnancy, hospice care, hunger, drunk driving or environment. How do you compete?

A comparison of volunteer recruitment methods from 1969 through 1982 was compiled by the organization Volunteer, The National Center. The overwhelming reason why people volunteered was that they were personally asked by someone from the organization. Personal contacts to recruit volunteers accounted for nearly 70 percent. Potential volunteers, seeing an activity on their own, accounted for 25 percent. The most surprising information was that TV, radio and the newspapers reached only 6 to 7 percent of potential volunteers (American Red Cross, Volunteer 2000 Study).

Become a member of your local volunteer clearinghouse [usually supported by the United Way] or tap into your local chapter of the American Association for Retired Persons [AARP]. Scouting and environmental action chapters can be used for additional help. Volunteer clearinghouses will account for many of the dedicated long-term volunteers. These organizations will not recruit for your program without position descriptions. Again, pre-planning is necessary.

Next, how do you attract these people to your park? to introduce your park to potential volunteers. First, you need an easy to find location. Unless you have an excellent meeting facility inside your park, you should consider going outside to a conveniently identifiable location. Public libraries, hospitals or bank meeting rooms are often attractive and superbly equipped free facilities. Remember, first impressions are important to a potential volunteer.

You should have a streamlined agenda lasting no more than four hours, a complete listing of volunteer positions and select position descriptions of the most popular activities should be available. Always have the new volunteers sign forms at the end of the class; it will give them a chance to "bow out gracefully" if they feel this type of volunteering isn't for them. Keep your agenda very general and remember to keep your program professional.

OPENING THE PRESENTATION

You should consider opening the presentation with a introductory sound/slide program that focuses on your park. This helps to show the volunteer where they fit in. I *always* end the presentation with a 30-45 minute free forum roundtable with one of the best park volunteers. They independently organize a 15 minute "why I decided to volunteer & what do I get from this experience" segment followed by a question and answer period.

With the recruitment finished, now comes your biggest challenge—to call the potential volunteer and get them working. Recognize that only 30-50% of these new persons will become long term, productive volunteers. Their initial introduction to the park is very important. They need to be made to feel like they are part of the park "team." You have to do an effective on-the-job orientation and have enough work planned for the volunteer so they will feel like they are contributing something important.

SECTION 3: HOW TO TAKE THE "PULSE OF YOUR PROGRAM"

Computerize your volunteer information and mailing list using a good database program or a "shareware" program like ***"The Volunteer Network."*** Begin a quarterly or bimonthly newsletter for volunteers and have a different volunteer write a section for each issue. A progressive training schedule should be developed for volunteers starting with the orientation course and then progressing to specialized courses in specific park needs.

A uniform helps to build an *esprit de corps* among your volunteers. Long term volunteers should also have engraved (plastic or medal) identification badges made for them.

Supervising volunteers can be time consuming for a staff member but periodically, remind the volunteers that you appreciate their work. When correcting their mistakes, it should be done with diplomacy and tact. Sometimes redirecting an interest will transform a poor interpretive volunteer and make them an excellent librarian or archivist. Firing the volunteer will undoubtedly be the most uncomfortable aspect of managing a program. But be honest and frank, and like all personnel actions, it should not be a surprise.

SECTION 4: AWARDS AND REWARDS

You need to stage some type of annual thank you for your volunteers. Low budget programs can be a simple awarding of certificates. Elaborate presentations can include the donation of awards and money from concessionaires, associations, interested citizens and businesses. Catered picnics combined with special medallions, framed prints, specialized volunteer T-shirts are appropriate to those areas who have hundreds of volunteers donating thousands of hours of time.

Rewards are many for a park manager. You get thousands of hours of quality labor for projects that would otherwise go unfinished. However, remember that you must be the leader of your volunteer program. Don't let the program dictate park policy.

The biggest intangible benefit of volunteerism is that you have broadened the support for your park within the community. This grassroots support will prove invaluable while you capitalizes on your community's finest asset.

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EVALUATING VOLUNTEER INTERPRETERS

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ABSTRACT: Evaluating the performance of volunteers may differ significantly from staff evaluations. The Monterey Bay Aquarium designed a successful evaluation process applied to over 350 interpretive volunteers. Evaluations address factual knowledge and interpretive technique. Evaluation process design and application, and special considerations for volunteers, are discussed.
KEYWORDS: evaluation, volunteers

INTRODUCTION

Evaluating the performance of volunteers providing interpretive services to the public differs significantly from the evaluation process applied to staff positions. We often hear from volunteers that they want regular feedback to help improve performance. When evaluating volunteers, consider the following:

• **Background:** The background volunteers bring with them may vary tremendously; this diversity can be an important strength in your program. This background will affect the ability to perform certain tasks in particular subject areas, and should be recognized in developing expectations of that volunteer.

• **Training:** The volunteer training program should establish a standard level of competence with skills and knowledge that enable the volunteer to perform their job. When evaluating you must be careful that you expectations do not exceed the level of training.

• **Level of commitment:** The trend in volunteerism in this country is toward short-term commitments that provide new experiences and growth opportunities for the participants. The typical volunteer may not view their position as would a career staff person, so their responsiveness to feedback may be quite different.

• **Motivation:** Volunteers may be looking for a job, seeking variety from other routine duties in their life, looking for social affiliations, or responding to many other motives. An effective feedback process should consider these motives and how the volunteer may better address their needs as well as those of the organization.

• **Expectations:** It is important that the expectations of the organization are clear from the onset and that evaluations start with meeting those expectations. A good evaluation also will modify those expectations to account for increasing knowledge and experience. It also should consider the expectations to account for increasing knowledge and experience. It also should consider the expectations the volunteer has of the organization and how these are being met and modified.

EVALUATION PROCESS

At the Monterey Bay Aquarium we have over 350 volunteers, called guides, that interpret exhibits to visitors. After trying several evaluation strategies with mixed success, we identified some key elements of a satisfactory program:

1. Evaluations should be non-threatening. Just the word inspires anxiety in many folks, and some volunteers were very intimidated by the thought of being evaluated.

2. Evaluations should be interactive, allowing the volunteer to respond to comments and feedback, and some volunteers were very intimidated by the thought of being evaluated.

3. Evaluations should consider the individual. While minimum standards apply to all, each individual should be challenged to do their personal best.

4.Evaluations should be consistent. The process must be standardized to a level where it is applied in the same way each time in order to avoid one volunteer receiving mixed messages from various staff members.

5.Documentation must be organized and detailed so that any staff member can follow up on an evaluation performed by other staff.

6.Most importantly, *the evaluation should be an opportunity to celebrate the success of the volunteer*, and should not be applied or perceived as punitive, judgmental or critical.

In our particular application we decided that there are two principal areas of need for evaluations. The **first** is content or factual information. We have observed that there is a certain rate of decay in accuracy that starts shortly after training in completed and accelerates in the absence of feedback.

The **second** area for evaluation is interpretive technique, the interaction between our guides and visitors to transmit information. Interpretive technique is an area that responds very well to the increased motivation that can result from a good evaluation.

RETENTION

Evaluating the level of retention of factual information and accuracy of that information is relatively simple. To meet both our needs and criteria a comprehensive exam was developed. The exam questions were pulled from tests used in training, from common visitor questions, and from exhibit information. There were also questions that were designed to correct common misinformation. The exam was designed overall as a teaching tool, so that correct knowledge would be reinforced and incorrect information would be identified and modified.

This exam was administered as a self-test with volunteers taking the test at home, and correcting it themselves. We provided answer keys that also listed where the information could be found in the training manual issued to each guide. If someone wanted to "cheat" and look up the answers, they still learned the correct answers which fulfilled the objective of the test. The following week we went over the exam with everyone in a small group format.

Volunteers had a chance to raise questions and staff had a chance to focus on particular problem areas. This did not seem to be threatening, and everyone felt that the process was fair and dignified. A nice benefit was that we were also able to identify weak subject areas and can then target those with follow-up training.

OBSERVING VOLUNTEER GUIDES

The next phase of the evaluation process involved observing volunteer guides interacting with visitors at exhibits to monitor the application of interpretive techniques. A two-page check list was developed to standardize observations to a degree, but also included many open-ended items as well as specific areas for response from the volunteer.

Volunteers were given a copy of the check list in advance both for comment and to show them the criteria that would be used in the evaluation process. Exhibits that provide good opportunities for interaction with visitors and for observing those interactions were used consistently during this phase of the process.

Staff tried to be as unobtrusive as possible while making observations. We then asked the volunteer to meet with us during a break or after shift to go over the results. At this point we could sit in a quiet place with the guide, complete the notes as we discussed the observations, and incorporate their ideas as well.

Particular focus was placed on reinforcing good techniques; when areas of need were identified we were careful to ask how we could work with the volunteer to address that need. We finished by asking the volunteer how we as a staff were doing in serving their needs and how we could improve. Again, more good ideas for training and communications came from this process. Overall, volunteers appreciated the time and attention they received from staff and were quite positive and receptive.

The entire cycle takes approximately four months to complete with three staff members evaluating about 350 guides. We have found that winter is a good time to start as as the staff has more time. This evaluation process is also used when a volunteer guide returns to the program after an absence of more than three months.

We will go through several evaluation cycles before we can truly measure the effectiveness of this system, and undoubtedly there will be more improvements made in the process. This program as already proved workable and effective and is worth considering as a model where similar needs and conditions apply.

EFFECTIVE TEEN VOLUNTEERS: MYTHS AND REALITY

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ABSTRACT: Teenage volunteers at first glance exhibit enormous potential as volunteers in interpretive program and project operations. They seemingly have all the basic ingredients for being successful volunteers. Their energy, willingness and ability to learn, available free time and flexibility to new situations are all assets to the volunteer coordinator. However, the interpretive staff must realize the limitations, expectations and management problems before developing a teen volunteer program
KEYWORDS: volunteers, interpretative staff

HISTORY

For many years Hidden Oaks Nature Center, a facility of the Fairfax County Park Authority had been utilizing teenage neighborhood kids, for a variety of exhibit/animal care projects. These youth were generally around the age of 12-15 years old. After further discussion the idea evolved that an organized training program might be appropriate so as to get these highly enthusiastic kids channeled in a productive manner. 1983 saw the birth of the first Naturalist Volunteer-in-Training.

Using the typical ways of publicity we advertised that we had six openings for interested applicants. Over 20 teens applied, all were interviewed and the six were chosen. They went through four days of training, were expected to complete 20 hours of volunteer hours and complete a project that enable the visitor to enjoy their visit more.

To say the least, it was a tremendous success. Hidden Pond Nature Center started their program in 1984 and since that time nearly 100 teens have graduated from both programs. Approximately one third of the teens come back the next year and about 1/4 will return the year after that. With over 4000 hours of contributed time since 1983, the teen program has earned a considerable reputation.

OPERATIONAL PLAN PLANNING TIME LINE

- April—Determine how many teen volunteers can be allowed into the program so as to ensure that the site staff can give them sufficient time needed for training and projects. Decide which staff member will be associate coordinator and assist in areas of training, project supervision and the selecting process.

- Prepare a letter/flyer to be sent to local intermediate schools (public + private), libraries and civic associations. For teens on division mailing list a special letter about the program is sent.

- By late April letter/flyers are mailed. Signs announcing the program go up around the site and other parks. There also is advertising in our local park system program information booklet.

- May—The training schedule is now complete for the program. The training will cover everything that is part of a nature center's operations except the drudgery of paperwork.

- Project idea's list is completed. Though many teens have great project ideas of their own, many do not so this helps them come up with a project that meets the need of the center.

- June—Selection process—two to three staff go over all the applications. The process involves selecting the applicants for interviewing by scoring them on a scale of 1-10 with 10 being the best. The top eight to ten candidates with the highest cumulative scores are chosen for interviews. Criteria for ranking are: quality of the application; interests; where they live; prior experience at the center.

- Interviewing—for the most part the candidates interviewed are those chosen for the summer. However, it gives the staff a chance to meet and review the program with the teens.

•July—Three days of training held that cover most aspects of park/nature center operations. Upon completion, a summer work schedule is developed along with a project plan.

•August—Special end of summer party, get together with current and past participants.

BENEFITS TO TEENS

The benefits of the program are both direct and indirect, but among the prominent ones are:

•Organized and professional training in Natural History skills.

•Opportunity to utilize their own skills in a way that others can see (programs, art skills, public speaking).

•Chance to investigate, first hand, environmental careers and opportunities.

•Contribute to their community and develop a sense of volunteerism.

•Professional and consistent supervision in a informal educational setting.

•Opportunity to work with live animals.

•Source for letters of reference for school and jobs.

BENEFIT TO ORGANIZATIONS

Among the most prominent.:

•Energetic volunteers with time to share.

•Opportunity to help develop future environmental lists.

•Develop corps of participants for year-round teen activities that may be planned/conducted.

•High profile volunteer program in the community.

•Good to excellent products developed as their project.

REALITIES OF TEEN VOLUNTEERS

The staff must realize these very prominent factors of teen volunteers:

•Time consuming

•Watch for rowdiness and play

•Need more supervision

•Demand attention

•Don't understand planning/review process

Resources

Children As Volunteers by Susan Ellis. Available through the Society of Nonprofit Organization, 6314 Odana Rd., Suite 1, Madison, WI 53719 (608)274-9777 Cost: $10.00.

Service Opportunities for Youth. Contact Children's Defense Fund, 122 C Street, N. W., Suite 400, Washington, D.C. 20001. Cost: $4.50

A THOUSAND POINTS OF LIGHT NEED ELECTRICITY

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ABSTRACT: All organizations are in search of better public relations. An effective volunteer program is one way to attain that desired goal. A interpreters, it seems apparent that when support needs to be garnered, a group of knowledgeable volunteers who have a high regard for the work of the agency can be of great assistance in that effort. The University of Mississippi, with its sizeable student population and diverse academic disciplines, represents an enormous volunteer potential. The Sardis Lake Corps of Engineers, because of its close proximity to the University, is quite fortunate in gaining access to this viable volunteer pool.
KEYWORDS: volunteerism, involvement, awareness, constituency

BACKGROUND

What began as a small cooperative outdoor education activity between the University of Mississippi and the Sardis Lake Corps of Engineers, in March 1987, has since blossomed into an enormous volunteer effort. Students with the University's Recreation Degree Program have amassed thousands of hours in natural resource management, recreation management, and special event assistance at Sardis Lake. Their collective efforts represent a cost savings of approximately $24,000 to the Corps of Engineers. The Sardis Lake--University of Mississippi volunteer program was 1988 and 1989 national award winner in the **"Take Pride in America"** awards ceremony--educational institution category.

UNIVERSITY PARTICIPATION

The wood duck project at Sardis Lake is specifically designed to study the nesting habits of these ducks in North Mississippi. In the spring of 1987, with the Corps' assistance, students implemented the study by conducting field surveys at Sardis Lake to determine suitable nesting habitats. Thirty (30 wood duck nesting boxes were constructed and placed in the field. Periodic and systematic surveys of these field sites are conducted by recreation majors each semester to verify seasonal wood duck usage and nesting habits.

The spring of 1990 marked four complete nesting seasons. The student-collected data will be analyzed and the resultant information will help the Corps in their waterfowl management responsibilities. This continuing study has allowed the students opportunities to experience, first hand, concepts in concepts in recreation area management.

In January 1988, student volunteers spent hundreds of hours building and placing fish shelters at Sardis Lake. The project involved hauling cedar trees from a nearby reforestation site and constructing anchoring system. Then, while the lake was in its winter draw-down period, the students laboriously dragged the cumbersome fish shelters through a gelatinous mud and put them in place.

In early 1988, university students also initiated a volunteer beaver control and management program. The project initially stemmed from a need to lover and maintain the water level at an aquatic nature trail, while Corps workers rehabilitated the existing boardwalk through the normally wet area. However, the fur-bearer management program has since expanded to encompass other watersheds of Sardis Lake. The students' participation gives them practical, "hands-on" experience.

During the springs of 1988, 1989, and 1990, recreation degree faculty and students helped organize and coordinate "Conservation Carnivals" at Sardis Lake. During these special events, hundreds of elementary school children spend a day learning about everything from Red-Tailed Hawks to recycled trash. Guided by student volunteers, dressed as clowns, the children were treated to mini conservation seminars conducted by local, state, and federal resource agencies. Follow-up evaluations conducted by university students revealed an obviously enhanced awareness among the children concerning their environment.

Recreation majors in the fall of 1989, understood and completed a handicapped survey of Sardis Lake recreation facilities. The goal was to design accessible impact sites for mobility-impaired visitors. The study made detailed recommendations as to handicap access of buildings, campsites, information centers, sanitary dump stations, and playgrounds.

EFFECT ON PUBLIC AWARENESS

The Sardis Lake—University of Mississippi volunteer program has given recreation students opportunities for involvement in field conducted activities. It has helped foster better public relations between the University of Mississippi, the Corps of Engineers, and the general public. The positive fallout from the volunteer program reflects well regionally, statewide, and nationally on the integrity and creditability of the Ole Miss Recreation Degree Program, its faculty, and its students.

EFFECT ON PUBLIC RESOURCES

The collective data from the on-going wood duck study indicates a substantial amount of nesting in areas previously devoid of wood ducks. In addition, fish attractor placements have given lake fishermen enhanced recreational opportunities and beaver control programs have helped timber resources. The student generated report on mobility-impaired visitors will influence future management decisions concerning handicapped accessibility of Sardis Lake recreational facilities.

A THOUSAND POINTS OF LIGHT

What was the energy source that fueled a fledgling volunteer effort and allowed it to burgeon into something much larger? What was the catalyst for the successful marriage of two different public agencies--the University of Mississippi and the Sardis Lake Corps of Engineers?

Perhaps it was a simple but mutual understanding by both agencies--the Corps of Engineers recognizing the public relations benefits to its agency as a result of their involvement in the volunteer program, and the University of Mississippi recognizing the inherent value of student volunteer activities. Undoubtedly, student participation in resource management activities helped fulfill Corps management goals at Sardis Lake. Many of the volunteer resource projects which were undertaken and completed would not have been possible otherwise, given manpower and budgetary constraints. Overall, the electricity which illuminated a thousand points of light in this case, was a sincere commitment by both agencies to a common goal-constituency involvement through volunteerism.

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ALASKAN TECHNIQUES OF PUBLIC INVOLVEMENT

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ABSTRACT: In 1987, the Public Affairs Office of the Forest Service in Alaska, worked out a public involvement plan to reach large and yet specific audiences with the facts about management of the Tongass national Forest. The Forest Service was going to start the revision of the Tongass Land Management Plan. We wanted as much input as possible from as many individuals and groups as possible . We also looked for new ways to share pertinent information with as many people as possible. Three years later, we know which techniques have worked to involve our public, both locally and nationally. These successful techniques of public involvement have application value in many places outside Alaska.
KEYWORDS: Alaska, public involvement,VIP tour, volunteer writers, public access, television

INTRODUCTION

After spending months assessing past public involvement techniques, a strategic plan was developed for use with the upcoming revision of the Tongass Land Management Plan. Some of the techniques had been used within Alaska already, some were new and innovative , and at least one was perceived as a little radical. These techniques included: VIP Trips, Briefing Books, Public Access TV, and Volunteer Writers and Photographers. All are still used today..

VIP TRIPS:

Every year, the Alaskan Region of the Forest Service hosts between 10 and 20 trips for Congressional staffers and elected officials, for selected group key influencers (such as college Deans of Resource Schools or Audubon), and for local special interest groups and community leaders. These on-the-ground field trips show current Forest Service integrated management throughout the forest, with particular focus on the interests of each VIP group.

CHECKLIST

A checklist was developed to make sure each trip is smooth. This list has several categories: correspondence, itinerary, travel/ transportation, accommodations/ meals, public relations, spouse programs, special events, briefing book, meeting rooms, evaluation and follow-up. Our visitors are able to concentrate on the sites and types of management they came to see.

Several hundred key influencers return home each year, with accurate, current knowledge about what is really happening on the Tongass National Forest. They are able to correct misconceptions and falsehoods about Forest Service management and help influence wise legislation for future management.

BRIEFING BOOKS:

Integral to our VIP trips and as background material for our Volunteer Writers is the Briefing Book. These 30-60 page spiral-bound, desk-top published books are created for each group or person. Each book contains an itinerary, a welcome section explaining who we are and what is our mission in Alaska, color maps of the areas they will be visiting with the route and numbered points of interest shown, brief points of interest , Situation or Issue Papers, and blank pages for Notes.

It took three years to develop the current format. Trial and error went into what could be similar in each book and still be useful, how much information was too much, and what our VIP's really liked and disliked about each book.

THE PERSONALIZED TOUCH

We discovered the personalized touch really made a difference to them. They wanted short, concise, up-to-date information about the issues of concern to them. (Each situation Paper is seldom over one page.) They really wanted a map to know where they were going and had been, with brief, three to six sentence blocks about the points of importance along the route.

Our computer stores over 100 points of interest about the Tongass National Forest, over 35 Situation papers on different issues, and the entire welcome section. We just pull up the pertinent information needed for each group, add their itinerary, compile the organization of the book, create a footer with that groups' name and date, and create a cover with their title, then print the book. Since we usually print 10-20 books, we make the original maps needed and have color-copies made ($3.00 each) and then include these color copies into each book. ***(Sample of a book is available from Pamela at address shown on first page.)***

What didn't work was to have several tables with facts and figures in the book. These numbers on: amount of jobs in various industries, number of visitors on the national forest for different types of use, how many million board feet were harvested, etc. changed too frequently to keep the books accurate, even with each book dated in the footer on each page.

The Briefing Books have become so popular and helpful for VIP trips, we have helped at least 2 other agencies develop their own Briefing Book.

PUBLIC ACCESS TV:

There are over 9,000 operational cable TV systems in the U.S, serving some 25,000 communities. These systems reach about 47 million subscribers, over 130 million people. These cable systems are required by law to carry at least one noncommercial educational station. Most large cable companies have a Public Access channel which will air your program for the price of a videotape. Some companies have a local studio where you can produce a program, host a debate, or tape a one minute announcement of upcoming special events.

We contacted over 30 cable companies nationwide in selected cities and only 2 were not interested in our video programs. They do prefer 15 or 30 minute completed programs on 3/4" videotape. By running a tag at end of each of our programs about where to receive more information, we solicited over 500 responses for more information on the Tongass National Forest.

These responses included universities, congressional staff, environmental groups and the general public. We were able to work a schedule with each station of when our programs would be shown, so we publicize it in various in-house and industry trade publications. (This can be a excellent tool to get your story out both locally, regionally, and nationally for a small cost.)

VOLUNTEER WRITERS:

We have successfully used volunteer writers and photographers to help us tell the story of the management of the Tongass National Forest. Experienced, professional writers frequently are very interested in producing articles, books, and photo features on your area, with a little encouragement and assistance from you.

We contacted writers from magazines and trade journals where we wanted to have articles published and asked them if they were interested in working with us on several story ideas. We also contacted the nearby college department of journalism to see if they were interested. Within two years we were turning away writers.

STORY IDEAS

We come up with the story ideas, do part of the research (who to contact, where they will be staying, unique angles, historical information from our files, etc), plan their itinerary, and write up the Volunteer Agreement, which both parties sign prior to any work. This Agreement states what the Forest Service will provide and pay for (transportation within Alaska, lodging at bunkhouses, subsistence for meals, use of phones, photo and historical library access, and technical expertise relating to the nature of the story) and what the Volunteer is responsible for (writing stories, marketing stories, taking or finding the necessary photos, giving appropriate credits). The agreement describes the story lines to be covered, the dates for the research, field work, and draft submittals to the Forest Service.

OVER 40 ARTICLES PUBLISHED

Over 40 articles have been published in various magazines and trade journals. These articles range in subject from "Alaska's Forest Cops" to recreation management of the Juneau Icefield to how the Valdez Oil Spill affected the Chugach National Forest. Four books on different subjects have been published, including one on recreation at the over 200 National Forest public use cabins in Alaska. We will actively continue this program in the future.

CONCLUSION

With modification and adaptation, these public involvement techniques can work for you. I have enjoyed helping develop these techniques and would be glad to help you adapt them to your forest, park, museum, or interpretative area.

COMMUNITY NATURE CENTERS: THEIR HISTORY, DEVELOPMENT, AND IMPACT ON ENVIRONMENTAL AWARENESS

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ABSTRACT: The community nature center as a concept and functioning entity is one of the least heralded yet most successful developments of the American environmental movement. Not only did this "land-for-learning" idea precede the environmental revolution currently manifested in America and worldwide but in some ways it actually contributed to it. A nature center is a land facility, planned, developed, and managed specifically for advancing conservation education and environmental awareness. It is a manned teaching and training facility in an appropriate outdoor setting.. In this kind of a center, situated largely in an urban or suburban environment, it performs a vital mission in education. While education of the young is most important, all age groups are reached.
KEYWORDS: nature centers, environmental awareness, conservation education

HISTORY

Recently America and other nations of the world celebrated the 20th anniversary of Earth Day, that great stride forward that took us to the Environmental Revolution in 1970. Actually the quiet crisis that led to this day began more than a decade and a half earlier, centered around Udall's book, *The Quiet Crisis*. Many today will recall those electrifying years when conservation received its third shot in the arm.

The first shot began with leaders such as John Perkins Marsh, John Muir, Teddy Roosevelt and Gifford Pinchot. The second came in the early years of the administration of President Franklin Roosevelt. With such programs as the Civilian Conservation Corps (CCC), hundreds of thousands of young men, many from urban areas hit hard by the Great Depression, were sent into the outdoors to work in forests and parks, learning the dignity and value of work and getting training in various manual skills.

Trails were built in many parks and outdoor interpretation techniques learned and facilities developed. In the Florida Everglades the 262nd CCC camp stationed in Homestead cut out the first *Gumbo Limbo Trail* and constructed the first *Anhinga Boardwalk* in what was then Royal Palm State Park; this long before the Everglades National Park was officially created. This writer was one of the CCC's trained interpretive naturals. Miami was a tropical paradise of only 35,000 people then.

The third wave began right after World War II when a new conservation spirit began to breathe again in 1947. State natural resources agencies began to stress conservation education. Educators began to stress conservation education. Educators began to expound *resource-use* education.

In Cornell, nature education came into full swing. Captain Bill Vinul preached outdoor education and Bill Carr showed how to do it in his outdoor museum techniques at Bear Mountain, New York State Park. In Virginia, land-for-learning was taking hold in Izaak Walton League chapter "Walton" parks. Then came Freeman Tilden's popular book, *Interpreting Our Heritage*. The National Parks soon promulgated outdoor park interpretation and built facilities to carry it out.

In the fifties, children's outdoor natural history museums began to appear and their leader, John Ripley Forbes, became well known. The National Audubon Society developed some of the first nature centers; one at Greenwich, Connecticut and another at El Monte, California. A model children's farm and nature center arose in Stamford, Connecticut. With natureless cities developing and great exodus into suburbia, concern arose over young people and others soon finding themselves without nature and land roots in their lives.

Two individuals who became alarmed were Erard A. Matthiessen and Laurance S. Rockefeller who saw a need for nature centers in America and who conceived the value of a merger of the new Nature Centers for Young America, Inc. and the old, established National Audubon Society. The merger went through in July 1961 and the full weight of the National Audubon Society was placed behind the new nature center planning division. Nature centers began a great expansion in America. This writer was proud to be the Audubon director of that planning division, serving between 1961 and 1973.

DEVELOPMENT

One reason nature centers took off running was because it was a practical, virtuous, and much-needed concept. Second, the prestige and drive centered in the National Audubon Society was great—a big organization throwing its full force behind its planning assistance program, guidance, and promotional endeavors, plus cost-sharing field planning services. Soon Canada began creating nature parks; nature centers appeared in the Bahamas, Trinidad, Panama, England and Norway.

Development moved forward on three fronts—those that could be classified as strictly private nature centers, others developed as quasi-public centers with a government body owning or providing the land and a private organization formed to run and administer the center, and the public nature centers developed on government-owned land (city, county, state or federal), and run by the government agency itself, such as by a county park system or a state or federal land agency. Exemplary centers were developed and functioning in Virginia, Maine, Nebraska, Wisconsin, Illinois, Minnesota, and California.. Boys Mountain, Tennessee and Schlit-Audubon Center near Milwaukee became marvelous model centers. The idea of nature centers and outdoor interpretation spread to Amazonia, Africa, Sri Lanka, Nepal, Israel, and the Pacific islands.

In 1961 our goal was to have 1000 nature centers by 1990 and 2000 by the turn of the century. There are roughly 1200 nature centers in America and the original goal of 2000 by the end of the decade will be greatly exceeded. Never was there a land-for-learning idea more firmly accepted by the American people.

COMMUNITY NATURE CENTERS

Earlier, the average community nature center covered at least fifty acres of land, with carefully planned facilities, such as an interpretive building and carefully laid-out nature trails and many kinds of interpretive facilities and devices. It has a staff of fully trained administrators and teacher-naturalists who stress *learning* in the outdoor environment. Groups come to the center by appointment for special offerings in outdoor environmental education. Individuals and the general public can use the centers when the facilities are open. Over the years, no nature center has failed in its operations.

ENVIRONMENTAL AWARENESS

Social impact is hard to measure, but in the summer of 1973—three years after Earth Day—a travel and research grant enabled this writer to make a national and international survey of existing nature centers to determine their significance on the still-growing environmental movement. The existing 900 community nature centers played a substantial role in America's concern over environmental problems.

Some 200 million visitors a year came to American nature centers in the late seventies, with many individuals repeat visitors. A salubrious and enlightening impact on both individuals and groups was evident. Nature center enthusiasts certainly played a vital role in Earth Day in 1970 and 1990.

Also significant is the more than 100.000 acres of "islands of green" set aside in the urban and suburban areas for outdoor educator purposes. The average nature center now consists of 101.4 acres of reasonably natural land, devoted almost exclusively to learning. The total capital investment in facilities and programming—over the past thirty years—now exceeds 1.4 billion dollars.

Environmentally, we in America are losing ground. The curves of exploitation and environmental awareness are closing and, by the start of the 21st century, may come into balance. Most needed today is a rebirth of outwardness from too much self-centeredness, a return to cherished human values and decency, and an America and an Earth that is a credit to humankind and all life. Nature centers, with God's help, can play an increasing role.

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THE UNIQUE PLANNING OF AN HISTORIC CANAL CORRIDOR

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Canadian Parks Service

ABSTRACT: The Rideau Canal, operated by the Canadian Parks Service, is a 198 kilometre heritage corridor connecting the cities of Ottawa and Kingston in eastern Ontario. It is a unique combination of historic settlements, picturesque landscapes and 24 lockstations creating a charm which attracts hundreds of thousands of Visitors from around the world and is home to both permanent and seasonal residents.
KEYWORDS: Rideau canal, park service, visitors, landscapes

THE RIDEAU CANAL

The Rideau Canal is recognized internationally as the oldest continuously operated and best preserved 19th century canal in North America. It is not frozen in time but is an "operating artifact" filled with opportunities to see and experience Canada's heritage in action. The Rideau is an exceptional recreational corridor hosting a wide variety of land and water based activities including sport fishing, picnicking, boating, sightseeing and cycling.

WHY IS A CANAL UNIQUE?

Unlike traditional national parks whose lands lie entirely within federal jurisdiction, the Rideau Canal's linear corridor traverses numerous federal, provincial and municipal jurisdictions. Also active within the corridor are numerous agencies and special interest groups all of whom have specific agendas to represent. Any planned action of the federal government obviously has the potential to impact on their interests and perhaps more importantly—vice versa!

VISITOR ISSUES FACING THE RIDEAU CANAL

The issues and concerns facing a 19th century canal are numerous—such as managing the delicate balance between preservation and recreation, presentation of this legacy given limited resources, and conserving the natural and historic environment of the canal. The development of the Visitor Activities Plan followed, translating the policy into a working document for the management of visit or activities on the canal.

Identified in the plan was the need to define the "canal experience" that should be provided to canal users. It was realized that a number of other issues would be directly affected by defining the canal experience, including the appropriate type and level of visitor activities and the level and type of facilities, services and interpretation programs along the canal. Balanced against these were the constraints of an acceptable level of impact, the implications for public safety and the bottom line of programming levels.

THE SOLUTION: VISITOR OPPORTUNITY AREAS

The Visitor Activity Management Process (VAMP) utilizes a marketing philosophy in which visitor needs and satisfaction are considered in parallel with the park's conservation mandate. We do not manage **visitors** but rather the **opportunities** that the visitor is seeking—usually expressed by visitors as the reasons that they come for a preferred activity within a desired type of setting.

In the development of the visitor activities concept, it was realized that the Rideau Canal and Corridor offered visitor opportunities to understand, appreciate and enjoy the Rideau Canal through:

- enhanced heritage presentation programming
- self exploration and the provision of areas to experience solitude

exodus into suburbia, concern arose over young people and others soon finding themselves without nature and land roots in their lives.

Two individuals who became alarmed were Erard A. Matthiessen and Laurance S. Rockefeller who saw a need for nature centers in America and who conceived the value of a merger of the new Nature Centers for Young America, Inc. and the old, established National Audubon Society. The merger went through in July 1961 and the full weight of the National Audubon Society was placed behind the new nature center planning division. Nature centers began a great expansion in America. This writer was proud to be the Audubon director of that planning division, serving between 1961 and 1973.

DEVELOPMENT

One reason nature centers took off running was because it was a practical, virtuous, and much-needed concept. Second, the prestige and drive centered in the National Audubon Society was great—a big organization throwing its full force behind its planning assistance program, guidance, and promotional endeavors, plus cost-sharing field planning services. Soon Canada began creating nature parks; nature centers appeared in the Bahamas, Trinidad, Panama, England and Norway.

Development moved forward on three fronts—those that could be classified as strictly private nature centers, others developed as quasi-public centers with a government body owning or providing the land and a private organization formed to run and administer the center, and the public nature centers developed on government-owned land (city, county, state or federal), and run by the government agency itself, such as by a county park system or a state or federal land agency. Exemplary centers were developed and functioning in Virginia, Maine, Nebraska, Wisconsin, Illinois, Minnesota, and California.. Boys Mountain, Tennessee and Schlit-Audubon Center near Milwaukee became marvelous model centers. The idea of nature centers and outdoor interpretation spread to Amazonia, Africa, Sri Lanka, Nepal, Israel, and the Pacific islands.

In 1961 our goal was to have 1000 nature centers by 1990 and 2000 by the turn of the century. There are roughly 1200 nature centers in America and the original goal of 2000 by the end of the decade will be greatly exceeded. Never was there a land-for-learning idea more firmly accepted by the American people.

COMMUNITY NATURE CENTERS

Earlier, the average community nature center covered at least fifty acres of land, with carefully planned facilities, such as an interpretive building and carefully laid-out nature trails and many kinds of interpretive facilities and devices. It has a staff of fully trained administrators and teacher-naturalists who stress *learning* in the outdoor environment. Groups come to the center by appointment for special offerings in outdoor environmental education. Individuals and the general public can use the centers when the facilities are open. Over the years, no nature center has failed in its operations.

ENVIRONMENTAL AWARENESS

Social impact is hard to measure, but in the summer of 1973—three years after Earth Day—a travel and research grant enabled this writer to make a national and international survey of existing nature centers to determine their significance on the still-growing environmental movement. The existing 900 community nature centers played a substantial role in America's concern over environmental problems.

Some 200 million visitors a year came to American nature centers in the late seventies, with many individuals repeat visitors. A salubrious and enlightening impact on both individuals and groups was evident. Nature center enthusiasts certainly played a vital role in Earth Day in 1970 and 1990.

Also significant is the more than 100.000 acres of "islands of green" set aside in the urban and suburban areas for outdoor educator purposes. The average nature center now consists of 101.4 acres of reasonably natural land, devoted almost exclusively to learning. The total capital investment in facilities and programming—over the past thirty years—now exceeds 1.4 billion dollars.

Environmentally, we in America are losing ground. The curves of exploitation and environmental awareness are closing and, by the start of the 21st century, may come into balance. Most needed today is a rebirth of outwardness from too much self-centeredness, a return to cherished human values and decency, and an America and an Earth that is a credit to humankind and all life. Nature centers, with God's help, can play an increasing role.

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THE UNIQUE PLANNING OF AN HISTORIC CANAL CORRIDOR

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ABSTRACT: The Rideau Canal, operated by the Canadian Parks Service, is a 198 kilometre heritage corridor connecting the cities of Ottawa and Kingston in eastern Ontario. It is a unique combination of historic settlements, picturesque landscapes and 24 lockstations creating a charm which attracts hundreds of thousands of Visitors from around the world and is home to both permanent and seasonal residents.
KEYWORDS: Rideau canal, park service, visitors, landscapes

THE RIDEAU CANAL

The Rideau Canal is recognized internationally as the oldest continuously operated and best preserved 19th century canal in North America. It is not frozen in time but is an "operating artifact" filled with opportunities to see and experience Canada's heritage in action. The Rideau is an exceptional recreational corridor hosting a wide variety of land and water based activities including sport fishing, picnicking, boating, sightseeing and cycling.

WHY IS A CANAL UNIQUE?

Unlike traditional national parks whose lands lie entirely within federal jurisdiction, the Rideau Canal's linear corridor traverses numerous federal, provincial and municipal jurisdictions. Also active within the corridor are numerous agencies and special interest groups all of whom have specific agendas to represent. Any planned action of the federal government obviously has the potential to impact on their interests and perhaps more importantly—vice versa!

VISITOR ISSUES FACING THE RIDEAU CANAL

The issues and concerns facing a 19th century canal are numerous—such as managing the delicate balance between preservation and recreation, presentation of this legacy given limited resources, and conserving the natural and historic environment of the canal. The development of the Visitor Activities Plan followed, translating the policy into a working document for the management of visit or activities on the canal.

Identified in the plan was the need to define the "canal experience" that should be provided to canal users. It was realized that a number of other issues would be directly affected by defining the canal experience, including the appropriate type and level of visitor activities and the level and type of facilities, services and interpretation programs along the canal. Balanced against these were the constraints of an acceptable level of impact, the implications for public safety and the bottom line of programming levels.

THE SOLUTION: VISITOR OPPORTUNITY AREAS

The Visitor Activity Management Process (VAMP) utilizes a marketing philosophy in which visitor needs and satisfaction are considered in parallel with the park's conservation mandate. We do not manage **visitors** but rather the **opportunities** that the visitor is seeking—usually expressed by visitors as the reasons that they come for a preferred activity within a desired type of setting.

In the development of the visitor activities concept, it was realized that the Rideau Canal and Corridor offered visitor opportunities to understand, appreciate and enjoy the Rideau Canal through:

- enhanced heritage presentation programming
- self exploration and the provision of areas to experience solitude

•accommodating appropriate recreational activities in a heritage setting year round

•interaction with the natural, cultural and historical resource of the Rideau corridor.

From this, the concept identified areas on the Rideau Canal that provide visitors with these opportunities.

HERITAGE SITES

Heritage Sites are areas whose land base, landscape and abundance of historical and natural resources encourage visitors to learn about and experience the character and significance of a "Nineteenth Century Operating Canal" through enhanced interpretive facilities, services and programs.

SOLITUDE SITES

Solitude Sites are areas whose relative isolation and undeveloped land base encourages the maintenance of a distinctive traditional character and landscape with minimal enhancement, for visitors to explore and appreciate its historical and natural resources on their own, in a manner compatible with the protection of these resources.

RECREATIONAL SITES

Recreational Sites are areas at which the land base and setting are conducive to the encouragement of appropriate recreational activities and opportunities for social interaction, where support services and facilities for such activities complement and do not detract from the site's historical and natural setting.(Canadian Forest Service 1989)

Further details on the setting, appropriate activities and the associated level of service, and the target markets were identified for each site.

The concept clearly establishes the role of each lockstation/site in achieving overall canal objectives and provides management with direction for the development, operation and maintenance of facilities, services and programs. It enables managers to provide visitors with opportunities to participate in a variety of activities on the canal—which are appropriate to the experience that a visitor is seeking. In the current climate of fiscal restraint, it also helps to optimize management of the canal given the limited personnel and financial resources.

The plan was prepared on the basis of internal partnerships with management, supervisory and operational staff, thereby creating "ownership" of the plan early in the process. This has ensured that there is a uniform understanding of, and consensus on what we should be offering to the visitors and the relative priority of future service planning efforts.

VISITOR ACTIVITIES PLAN

The visitor Activities Plan guides the management of the current visitor activities program for the next five years and provides consistent, proactive and market-sensitive input to various high-profile canal projects where co-operation with other agencies is required consideration of not only the canal's historical and natural resources but also the multitude of jurisdictions and partners whose ownership, actions and needs affect the canal and its visitors.

VISITOR ACTIVITY CONCEPT

The visitor activity concept has successfully embraced the canal's past and its contemporary role and will guide future development for the 24 lockstations. Through management planning, currently in progress, the canal will build on this direction and work with the corridor partners in preserving the corridor's unique heritage character.

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INTRODUCTION TO THE VISITOR ACTIVITY MANAGEMENT PROCESS

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ABSTRACT: This paper introduces an innovative process for interpretation and visitor services which attempts to integrate interpretation and visitor services more closely with heritage area management planning. The process, developed by the Canadian Parks Service of Environment Canada and termed the Visitor Activity Management Process (VAMP), utilizes techniques from market research to identify visitor activity groups and to develop service strategies which meet the requirements of these groups but also conform to existing management direction as represented by legislation and policy.
KEYWORDS: legislation, policy, VAMP, national park planning, visitor activity groups.

INTRODUCTION

The *Visitor Activity Management Process* (VAMP) is a management process involving technical and administrative steps which was developed over a number of years by the Canadian Parks Service. As Tayler, one of the initiators of VAMP recently pointed out (1990, 235-6), programs, services and even facilities for visitors to Canadian National Parks were being developed out on a project-by-project, park-by-park basis. Moreover, since there were no established standards of service from park to park, evaluation which, through the 1970's was more and more a requirement of the Canadian federal government, was difficult to perform.

Another component of the pressure from outside the agency which helped bring VAMP to fruition was the realization on the part of senior management that, like it or not, National Parks were in the tourism business. As a tourism destination, national promotions featured National Parks such as Banff. At provincial levels, governments in less-affluent parts of Canada looked to National Parks to stimulate nascent tourism industries. However, admitting that people were important to National Parks was only the first step in an up-hill struggle. Like other agencies such as the National Park Service, the USDA Forest Service or the Bureau of Land Management in the U. S., the Canadian Parks Service found that claiming people were important was much easier than developing the means to reach out to those people (Payne, 1990).

For the Canadian Parks Service, the result of these internal deliberations, VAMP, is beginning to yield positive results. As staff become more familiar with the process, VAMP is beginning to find its way deeper into the operations of the agency.

VAMP AND NATIONAL PARK PLANNING

VAMP is implicated in National Park planning (Graham, Nilsen and Payne, 1988) at three levels.

Canada does not yet have National Parks in all thirty-nine terrestrial natural regions. In the last five years, New National Parks (or, in the case of Canada's two northern territories, National Park Reserves) have been established in southern Saskatchewan (Grasslands), in the Yukon Territory (North Yukon), in Ontario (Bruce Peninsula) and in British Columbia (South Moresby). At the park establishment stage, VAMP is useful in identifying themes for later interpretation, visitor activity groups which might use the park and, perhaps most importantly, socio-economic impacts on nearby communities.

CONTRIBUTIONS

However, it is at the level of management planning where one begins better to appreciate the potential benefits of using VAMP. VAMP is meant to parallel the established resource management process and, like it, provide input to the park management planning process. The contributions include opportunity assessment, determination of appropriate visitor activities and guiding visitor data collection and manipulation to identify visitor activity groups. While it is not yet a reality, it is anticipated that VAMP will be used to provide visitor-oriented input into park zoning decisions in much the same manner as the Recreation Opportunity Spectrum does in U. S. National Forests.

The third application of VAMP brings the focus to interpretation and visitor services or, as they are now termed in the Canadian Parks Service, "Visitor Activities". Stemming from the park management plan and the visitor concept determined there, VAMP is meant to guide service planning for interpretation, visitor services and public safety (Canadian Parks Service, 1988). Just how this is done requires an understanding of visitor activity groups.

VISITOR ACTIVITY GROUPS

Decisions concerning what activities are appropriate for National Parks depend on policy (Parks Canada, 1979) and, since the advent of VAMP, the nature of the activity itself. VAMP helped focus attention of the nature of the particular activity in question. Consider nordic skiing (Graham, Payne and Nilsen, 1988, 53). Nordic skiing is not an uni-dimensional activity. Variations in equipment (touring vs. racing skis, for example), in styles (classic vs. skating) which in turn further differentiates equipment, and motivations of participants yield several significantly different variants of the activity.

DIFFERENCES

Such differences are more than merely interesting; they hint at differing service requirements and even facility management. Skating, a new technique in nordic skiing, has resulted in different skis and poles and a wider track than needed for classic skiing. This new technique also is oriented to racing more than individual or family enjoyment. To cater to skaters on National Park trails, the trails themselves would need to be doubled in width; to cater to the racing fraternity, trails would also require substantial modification, often with profound environmental impact implications. Such modifications are not supported by National Park policy. Hence, a decision has been made, supported by the VAMP framework, concerning levels of service.

APPROPRIATE ACTIVITIES

However, perhaps more significant than the check on appropriate activities, is that once activities such as nordic skiing have been broken into sub-activities, opportunities to communicate with participants in those sub-activities begin to suggest themselves.

By knowing how participants are similar, one to another, whether in terms of motivations or demographics or skill levels, and, by knowing how they differ from participants in other sub-activities of nordic skiing, opportunities for communicating with them become clear, levels of service they require are clarified and chances that they will be pleased (or, if you like, satisfied) with those services improve.

SEGMENTATION

Note that VAMP uses a common enough technique, segmentation (Graham, 1990), in making these break-downs, but in focusing on activities rather than on the more abstract socio-economic or socio-demographic groupings common to market research, VAMP enables interpretive planners to appreciate the needs and desires of visitors quite quickly and relatively simply. What's more, VAMP is not necessarily "data-driven"; it is possible to use it using informal information possessed by staff.

CONCLUSION

The Visitor Activity Management Process developed by the Canadian Parks Service has, in a sense, revolutionized interpretation by bringing it more completely into the mainstream of decision making in Canadian National Parks. No longer is interpretation an added component in a setting where the "real" business of management is natural heritage protection. VAMP implicitly recognizes that managing people, by communicating with them, by providing appropriate service and programs and by meeting the expectations behind their visits, will support the management of natural settings in National Parks.

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INTERPRETIVE PLANNING STRATEGIES FOR THE 1990's

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ABSTRACT: What does an aquarium and a pelican have in common? The pouch under a pelican's bill can hold up to 25 pounds of fish, or 3 gallons of water.
KEYWORDS: planning, interpretation, strategies

INTERPRETATIVE PLANNING

A funny thing sometimes happens with interpretive planning—often the planning gets left out, and lots of interesting (but often not needed) facts gets put in. I once reviewed a interpretive plan that listed every tree, bug, berry, and bog inhabitant, but forgot to consider that the plan was for how the agency was to communicate with/to visitors about the site. Visitors were never mentioned.

This short paper will discuss some of the issues and ideas I feel are important to be sure to remember in interpretive planning for the 1990's and beyond.

WHERE IS THE PLANNING?

I feel that one issue to be mentioned at the beginning is the need for a good planning model or outline. We use a modified version of the Peart/Woods (1976) model, which includes sections on:

- Mission Statement
- Agency Interpretive Goals and Objectives
- Complete Resource Analysis
- Theme and concept determination
- How/When/Where to offer various interpretive Services or Media.
- So What (Evaluation)
- Implementation and Operations (how to make the plan "happen")

We develop a plan for planning, to make sure that we don't leave anything out, or spend to much time on some areas, and not enough on others.

WHO ARE WE PLANNING FOR?

A critical section for any type of interpretive planning is the consideration for the visitors (current or proposed) who you want to serve. Many planners have very little knowledge about visitor marketing needs, and how to use visitor demographic information in interpretive planning. We must remember that the plan is our tool to help communicate TO/WITH visitors, so we must know as much about them as possible. Some trends for the future to consider include:

- an aging population
- more bus or group touring/visitation
- more foreign visitors
- changing motivations/expectations for visits
- changing motivations for attending programs/services
- competition with other attractions for visitors (or members).

WHY ARE WE PLANNING?

Sometimes the exact reason for the interpretive plan may not be clearly understood. The "plan" should have objectives - things that need to be accomplished by the plan. Some of these issues or needs may include:

- site or resource protection
- visitor flow or use distribution
- visitor enjoyment and education
- recreational learning opportunities

- facility needs assessment
- facility programming (goals, objectives, etc.)
- to serve as a marketing tool
- to serve as a fund raising tool
- to serve as a "political" tool
- to serve as a development/work plan

These are just a few of the reasons that a interpretive plan is prepared. Depending on which reasons the plan is done, each may require a different presentation style, content coverage, or a different format. You have to know why the plan is being done, and how it will be used to create an effective document.

COST-EFFECTIVE INTERPRETIVE PLANNING?

For a plan to be cost-effective (worth the money and effort that it cost to prepare) several things must occur. First, there must be measurable objectives for the plan, or for components in the plan (i.e. trails, auto tours, historic sites, etc.).

Without objectives, you can never know for sure if the plan is actually achieving anything!! Secondly, there must be a built in evaluation strategy - a way to see if the objectives are being met. All interpretive plans should have a evaluation strategy section in them.

PLAN FOR CHANGE

If one thing is for certain, it is that the plan will begin to change sometime after it has been written! This normal evolution of needs, circumstances, politics, etc. should be allowed for. We try to prepare all of our plans in 3-ring notebooks so then can easily be updated for changes.

Plan for new technologies as well. A interpretive planner should keep up on new materials for signs, sign posts, viewing platforms, self-guiding devices, etc. For example, in a few years many visitors may be using self-guiding video walk-mans on trails instead of brochures.

SUMMARY

The interpretive planner for the 1990's and beyond must constantly remember three important factors:

1. The dynamics of the visiting public (target market) is always changing. The planner must know who the plan and interpretive services is for in order to effectively plan for the desired experiences for the visitor.

2. Technology is always changing. The planner needs to know what new tools are (or will be) available to help him/her better communicate with the visiting public. This includes media, materials, as well as research results from studies that explore the effectiveness of media in communicating with visitors.

3. Agency acceptance. To many good plans sit on shelves after they are done. Consult with appropriate agency members to determine if there are any special considerations, formats, etc. that will help the plan "be used"! Try to insure support/ involvement, as appropriate, through out the planning process.

A PROFESSIONAL APPROACH TO PUBLIC RELATIONS AND MARKETING

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ABSTRACT: This paper treats one subset of public relations and marketing as it interfaces with interpretation—publicity. It stresses the importance of planning and evaluation. It discusses how to develop press contacts and to obtain coverage. It describes the difference between news and feature angles. It de-emphasizes form and rules, instead emphasizing the "publicizable moment."
KEYWORDS: public relations, marketing, interpretation, publicity

INTRODUCTION

Many public relations discussions emphasize the form and the rules. A press release *must* have one-inch margins. It *must* end with -30- or ###. In fact, some of us who are public relations professionals know the real truth of the matter: the form is the least important thing. It is the story, the idea, the angle, the hook, the slant, the spin, that makes it or breaks it. News value, uniqueness of content and creativity of approach are more important than the width of the margin or even the press release itself. Forget the form and the rules and *use what works*.

THE INTERFACE OF PUBLIC RELATIONS AND INTERPRETATION

Many public relations discussions at interpretive conferences talk about public relations as an entity unto itself. In fact, a strong argument can be made that public relations and interpretation are, if not virtually synonymous, at least two disciplines with wide interface.

The same can be said of marketing and public relations, and marketing and interpretation. Interpreters are their agencies' public relations and marketing people, even if, as in some the national parks there are also public information or recreation marketing staff who deal with the press.

DEFINITIONS

Edward Bernays, often called "the father of public relations," defined public relations as "the engineering of consent." I define public relations a little differently. Imagine that each of the following disciplines or entities was a circle: interpretation, publicity (e.g. press coverage), marketing, advertising, publications (e.g. brochures, books), direct mail (e.g. fliers sent via the mail), fundraising, government relations and so on.

Merge these circles in such a way as a portion of each of them intersect and overlap, as in a Venn diagram or the old Reingold beer logo (see FIGURE 1). The area where they merge defines the broad discipline of public relations, or all those activities which in some way influence and impact any or all of an agency's publics.

For the purposes of this discussion, because of the limitations of space, we'll examine publicity, one aspect of public relations which people often erroneously consider to be fully synonymous with public relations.

IMPORTANCE OF PLANNING AND EVALUATION

Most public relations and marketing activities should begin with a planning process and a written plan. Few do. As with good interpretation, it is crucial that you begin by defining your objectives. Determine what you want to "say" and who you want to "say" it to.

That is, what is your message, and who are your publics or audiences?

Another thing public relations and marketing activities rarely do is to leave enough time. Start early, at least six months before you want results. For example, many magazines have three or four month deadlines.

Finally, evaluate results, both as they do or do not happen, and again afterwards. In the realm of publicity, the most tangible results are the stories that find their way into the media, which can be further evaluated on their number, size, quality and slant.

For publicity campaigns that relate to anything longer than a one-day event, evaluating all this as it happens allows you to modify your efforts to create better results, or play off what you have successfully achieved. And when the campaign is complete and the dust has settled, an evaluational ***"debriefing,"*** even if only between you and yourself, gives you invaluable insight for the next one.

DEVELOPING PRESS CONTACTS

All the planning and evaluation will do you no good if you don't know your way around the media you are targeting. For starters, you must study this media. If your targets center around one particular geographical area (e.g. a metropolitan area), read, watch and listen as much as you can. Who sets the media agenda of the area? That is, which medium is the leader who many or all of the others follow. In many cities, this is the biggest (or only) daily morning paper.

For example, in New York City a story that appears in the New York Times on Monday morning, may be on 10 different radio stations by noon, on three different evening news television programs, and in two other dailies the next morning. Naturally, you want to put extra attention and effort into getting to know the medium that sets this agenda, because your efforts go farther.

Keep track of who writes or speaks about what when, especially in the medium that sets the agenda. Get to know who has "beats" which relate to what you are trying to communicate, but be creative in your analysis. A paper might have an environment or history reporter, but if you're sponsoring a maple sugaring festival, the food reporter might be your best contact.

Remember your friendly reference librarian and the biggest corner newstand. The librarian may have various media directories or press lists which can at least give you a starting point. The news stand might just carry a paper or magazine you otherwise might not have known about.

Once you've mastered the media, try to get to know reporters and editors personally, and treat them as you would a friend. The Golden Rule applies here. Once you've gotten to know a reporter or editor, don't always contact them with your story, call them up with a non-selfish tip or just for lunch.

Acknowledge them when they do a good job. Remember, too, that in the media business, as in all business, who knows whom is a crucial operating principle.

OBTAINING COVERAGE

With all the aforementioned in hand, the key to obtaining coverage is the angle or "peg of the story you are promoting. There are two broad categories: news and feature or human interest.

When it comes to defining the former, some people rely on the old saw that "news is new." Some examples might be the opening of a new nature center, the first sighting of a bird in the state, or the introduction of a new resource management plan.

However, I once asked a very wise old reporter at the New York Times how he defined news. He said "I wish I knew," and then on reflection, said that "news is what the editor thinks is news." This, I think is closer to realty than "news is new," meaning that individual thinking and who knows whom definitely applies to the news judgement.

The other kind of angle or peg presents far more frequent opportunities in the world of interpretation, yet its definition is even more elusive. The feature or human interest angle is the "good news" story, the offbeat story, the celebrity story. Its concept is best mastered by looking at case histories or by reading, listening and watching to everything the media covers that doesn't seem to be hard news.

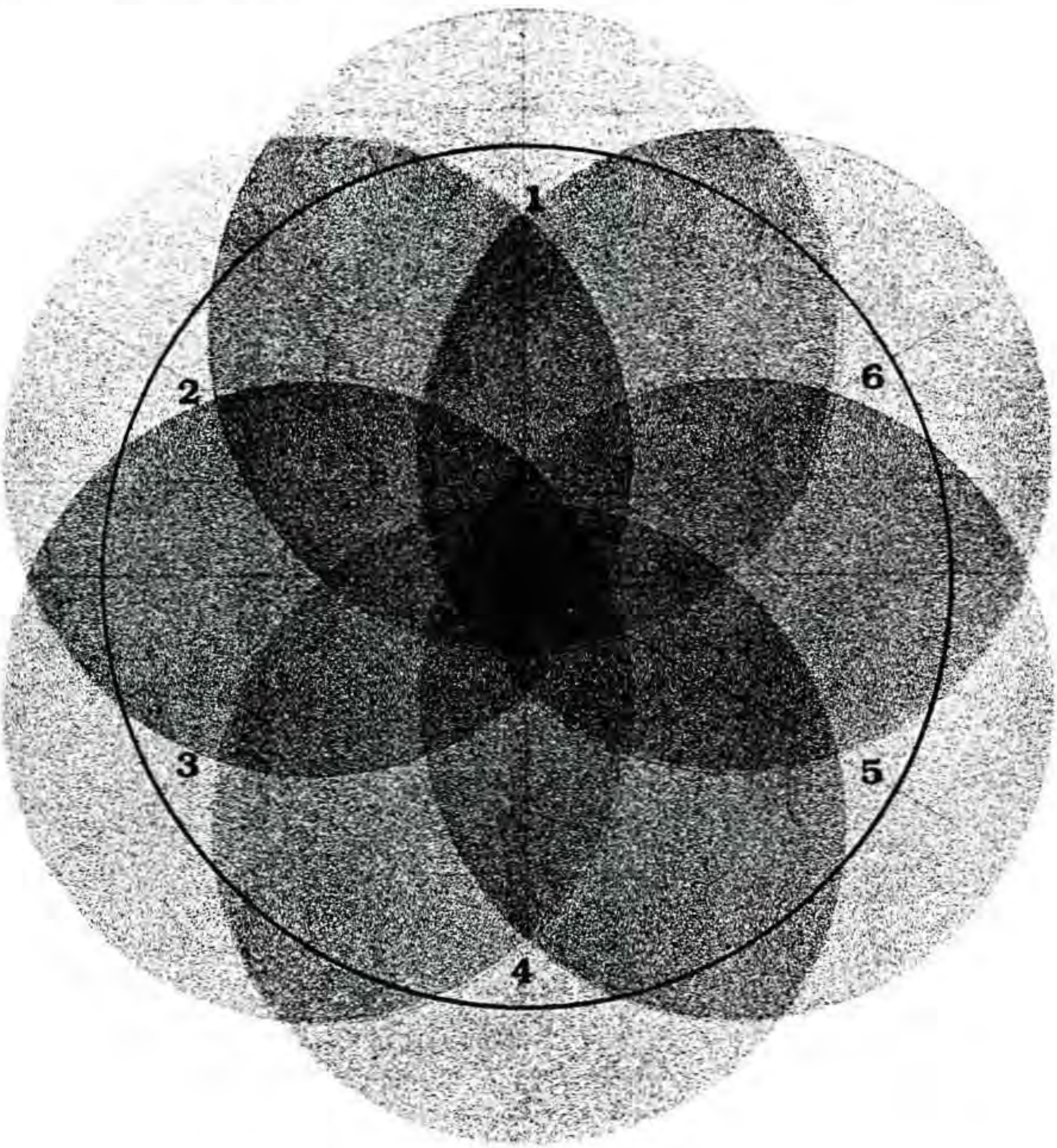
To be a master of finding a feature peg is to be a master at publicity. In that respect we are talking art, not science.

LOOK FOR A STORY

Look for a story in anything or everything. Capitalize. Think about the concept of the teachable moment, that opportunity which suddenly presents itself, begging for interpretation. And make that teachable moment a "publicizable moment." Forget the form.

Think of ways that you can create publicity without a press release.

Perhaps most importantly, acknowledge to yourself that what you are doing as an interpreter is a great and honorable pursuit, worthy of media coverage. And if you love what you promote and teach, your enthusiasm will be infectious.



PUBLIC RELATIONS

1–Advertising **2–Publicity**
3–Interpretation/Education **4–Publications**
5–Marketing/Direct Mail **6–Fundraising**

THE CHOIR'S GETTING BORED, AND THE PEWS ARE BARE; MARKETING FOR NATURE CENTERS

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ABSTRACT: Many nature center professionals misunderstand marketing as simply a matter of advertising. In fact, marketing is a much more complex process. The critical elements are identifying target audiences that you wish to reach, researching their interests and concerns, and finding ways to match those interests with your organization's mission and resources. Properly utilized, marketing can help nature centers to avoid the pitfalls of "preaching to the choir:, and thus can broaden and strengthen a center's educational impact. The New Canaan Nature Center has had particular marketing success with the development of an interactive exhibit gallery.
KEYWORDS: preaching, audiences, marketing, public relations, exhibits

INTRODUCTION

"Preaching to the choir" is a crime that has run rampant among nature centers and other public environmental education organizations. All too often we present program after program for the same relatively-small populations of supporters. These folk make for comfortable audiences: they're familiar with our organizations, are supportive of our cause, and don't excessively strain our resources or creative abilities. Unfortunately, they are also usually the ones who have already been "converted" to the cause of environmental concern and action.

The people who we *really* need to reach are the ones who would never dream of going on a nature hike, or attending a composting workshop, or sailing in search of whales. It is only when we find a way to reach these "holdouts" that we can expect environmental education to begin having its full potential impact upon our culture. Innovative marketing is the key to learning how to reach these people.

"**Marketing**" is a much-misunderstood word among educators who have not been trained in management techniques. It is not just advertising and publicity; rather, it is the process of targeting desired audiences, researching them to deduce their interests and concerns, and then trying to match those interests with your mission of environmental education. This last part, the "matching", is critical. The point of marketing is not just to turn your organization towards doing *whatever* it takes to attract different audiences; installing water slides and dirt bike tracks is *not* the answer. But if you adopt a marketing perspective, then you figure that the potential water sliders might be equally attracted to a rafting trip on a wild and scenic river, complete with plenty of opportunities for your staff to work-in tidbits of natural science and environmental education. (And perhaps marketing could even provide educational hope for the dirt bikers, though I'll admit to not having any bright ideas just now. Suggestions?)

No presentation or paper can give specific details on how to market all facets of nature center programming, but thankfully it is not necessary. The real point of marketing is the attitude of thinking first of the audiences' needs and desires, *then* of your own resources and educational priorities. As simple as that sounds, it has been all-too-rare in our profession. Even today there remain many nature centers where the staff sit down every so often, decide what programs they want to teach, write them up in newsletters, and then wonder dejectedly why they only attract the same old people. Those educators need to adopt the marketing attitude.

A welcome side benefit of good marketing is good public relations. The very process of researching the interests of potential audiences can often begin to sway those audiences towards participating in your activities. This research can be as simple as sitting down for an informal conversation with members of a targeted group, or as complex as carefully-crafted questionnaires and interviews with people who are not part of your normal "crowd". Nearly everyone loves to be asked for their opinions and interests, and the beginning marketer will find that many individuals and groups are more than happy to openly brainstorm about how their goals can be matched with yours. By approaching them with your interest, you will be instilling a good feeling for your nature center's community spirit and outreach.

Here at the New Canaan Nature Center we have had several marketing successes that have helped us to more than double our overall visitation, budget and staff in the course of only three years. The largest of these successes was the construction of a sizable, interactive and very professional exhibit gallery.

This project was done with the stated goal of providing an all-weather attraction to the community which would be fun for anyone, regardless of their level of interest in natural science. In addition, we were aiming to provide at least 30 - 45 minutes of indoor activity for families. The reasoning behind these plans was simple.

1. The typical outside attractions of nature centers lose much of their appeal in bad weather, especially to those people who are not already nature lovers. Therefore, providing indoor attractions will help draw more people to our facilities on the very days when we most need them. Anyone who doubts the effectiveness of such facilities should make two rainy Saturday visits: one to a hands-on science museum (which will be bustling), and the other to a typical nature center whose features are primarily outside (which will be nearly deserted). It's true, of course, that no exhibit gallery by itself can impart a full range of environmental education, but it can introduce people to your facility, entice them to pick up your brochures, and hopefully lead to future program sign-ups.

2. The length of the visit was judged to be critical because most families will not want to travel even a few minutes away from home if they do not have the expectation of *at least* half an hour of activities at their destination. Dozens of nature centers have terrific but small exhibit areas that just cannot meet this criteria.

"DISCOVERY CENTER"

Our **"Discovery Center" exhibit** gallery took almost four years from start to completion, temporarily burned out several staff, and cost nearly a half million dollars in all -- a daunting project for most any organization. But the overall effect has been so positive that no one here doubts that it was worth all the effort. Critical to its success were its marketing components: a membership survey revealed the initial interest in better exhibits, a community advisory committee helped steer the project, prototype exhibits were built to help gauge the public's reaction, and post-construction improvements have occurred due, in part, to visitors' suggestions.

Marketing need not be an intimidating task; you don't have to be a rocket scientist or have an M.B.A. in order to be successful at it. Mostly, you just need to adopt the marketing way of thinking. If you try, you will soon find that your pews are filling back up with new faces, while the choir begins singing louder than ever because of your organization's renewed strength.

TOURISM VS. ENVIRONMENTAL INTEGRITY AND LIVABILITY—USING INTERPRETIVE PLANNING TO SOLVE TOURISM MANAGEMENT PROBLEMS

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ABSTRACT: On Lanai, Hawaii, tourism has had minimal impact—until recently, when the major landowner decided to develop two luxury hotels. Concerned citizens worked with the owner to develop measures for mitigating the negative impacts of the development. One of the measures was an interpretive program. The overall goals identified for the program were to attract tourists and enhance their recreational experience, but without reducing the livability of the island, and without sacrificing the environment—a prime tourist attraction, and a key ingredient to livability. The interpretive planning process presented can be used as a model for similar problems, where communication with leisure-pimpminded visitors in recreational settings is part of the solution.
KEYWORDS: interpretive planning, interpretation, planning, tourism, management

INTRODUCTION

One purpose in examining this project is to extend the limits of our profession—to highlight other arenas that we can operate within. The Lanai Interpretive Master Planning project was unusual in that the reason for developing an interpretive program was primarily to help solve management problems, and the array of management problems included maintaining a cultural lifestyle in the face of tourism—not a typical problem for an interpretive program.

But more importantly, the project offers a vehicle for asking why interpretive planning and programs haven't been more universally recognized as key tools for solving problems of this type. Have we, as a group of professionals, worked so hard to set ourselves apart, that we don't fit in?

ARE TOURISM, ENVIRONMENTAL INTEGRITY AND LIVABILITY COMPATIBLE?

This question is being asked in many parts of the world where tourism is degrading the natural and cultural environment. Examples of negative impacts from tourism can be found anywhere tourism exists, but these impacts were considered a reasonable price to pay for the positive impact on the economy—until now. The costs of increased traffic, crowding, pressure on services, noise, and other problems have convinced some residents that the price is too steep. Lincoln City, Oregon recently turned down a grant from the state to build a visitor center because they didn't want more tourists.

So this question on tourism reflects a significant current problem. In Hawaii, the question is being asked forcefully because residents have seen livability, environment and culture vanish under the onslaught of tourism. On Lanai, the opportunity existed to avoid the mistakes of the past.

THE LANAI SITUATION

Lanai is not a stereotypical Hawaiian island. In 1989 it had one town, an 11-room hotel built in 1925, one restaurant, 2500 residents, and very few tourists. Lanai was the "Pineapple Isle" where James Dole started a pineapple plantation in 1922. With virtually one owner and one industry, Lanai became a "company" island with a single "company" town—Lanai City—and a non-tourist economy.

The principal owner on Lanai recently decided to move into the tourist business. Two luxury hotels were planned for the island; one to open in December, 1989, and the other in the summer of 1991. When news of the pending development broke, many residents became concerned. Lanai, with its uncrowded beaches, lack of traffic, wide open spaces, and leisurely pace, was their home. Everyone on Lanai knew everyone else; crime was almost non-existent.

The concern led to a Memorandum of Agreement (MOA) between the county, the developer, and the community. The MOA listed measures to help "preserve the cultural resources and assets of the past and to recognize their enrichment value to our present and future" in the project area for the Manele Bay hotel. Among the measures was development of an interpretive plan.

On Lanai, an interpretive program was considered by some to be an important tool in maintaining the integrity of the cultural resources. It became apparent during the planning process that the program was also considered to be a tool in maintaining livability, and the integrity of the natural resources. But for the interpretive plan to be successful, it had to also address the main concern of the developer —enhancing tourism.

THE PLANNING PROCESS

Planning is a systematic process for making decisions (Fazio and Gilbert, 1981). This applies to planning in all fields. Consequently, good planning models have similar characteristics—goals are established, the circumstances under which the goals must be attained are analyzed, options are examined, and solutions are selected that work under those circumstances. If goals and circumstances are clearly and correctly identified and analyzed, good decisions should follow.

In interpretive planning, the major circumstances involve human factors (audience) and non-human factors (opportunities and parameters). We try to communicate a message to an audience, within a specific set of parameters and opportunities, in order to achieve a goal. So it stands to reason that if goals, audience, opportunities and parameters are clearly defined, we will have a sound basis for our planning decisions. The planning steps are as follows:

PHASE I—THE BACKGROUND QUESTIONS

•Goals: What end results justify the expenditure of time, money, and other resources?

•Audience: Who are the target audiences? What are their needs, expectations and limitations?

•Opportunities: What significant sites, facilities, collections, stories, and events are available for use in the interpretive program?

•Parameters: Under what circumstances must the components of the interpretive program be created (time, $$, etc.) and under what conditions must they function (weather, vandalism, competing stimuli, etc.)?

PHASE II—THE PLANNING DECISIONS

•Themes: What messages should be sent?

•Media Prescription: What media should be used? What sites should be developed? What topics or stories should be used to send the messages?

•Priority: Which component should be developed 1st, 2nd, 3rd, etc.?

This process is similar to the one developed by Sam Ham, and it's the process I teach and use. It's also the process used in the Lanai project. But knowing the categories and the order is just a start. The key to good decisions is having the right information. So the key to planning is asking the right questions, in the right order.

WHAT ARE THE "RIGHT" QUESTIONS?

GOALS The key to using interpretation as a tool for solving management problems is in first asking basic management questions. In the case of Lanai, the first question asked was, "What are the overall management goals for Lanai?" Note that the question doesn't directly target interpretation. The principal answers were as follows:

1. To make the island an economically viable enterprise using tourism as a base economy.

2. To maintain livability of the island.

3. To protect the cultural and natural resources.

The next question was: "Can an interpretive program help achieve any of these management goals?" The answer was "yes!" That led to the third question, "How can an interpretive program help achieve those goals?" The answers included:

1. By attracting visitors to areas where the intrusion has minimal impact on residents.

2. By attracting visitors to areas that can withstand high impact, and away from fragile areas.

3. By providing employment opportunities for residents, as guides or concessionaires.

4. By attracting visitors, and by enhancing their visit.

The list goes on. Together, the answers comprise the basic goals of the interpretive program. The key point is that the interpretive program goals are tied directly to management goals, priorities, ... and money. This isn't a new idea. Sharpe identified achieving management goals as one of the three objectives of interpretation (Sharpe, 1976). Putney and Wagar advocated tieing interpretation to management priorities as a way of becoming a tool for resource management (Putney and Wagar, 1973). But the potential of interpretation as a management tool has not yet been realized. Part of the reason is that old habits die hard, and interpretation has not been a management habit.

Part of the reason may be a failure to ask the necessary questions, so goals of an interpretive program can be derived from management goals, not selected from the stereotypical array of goals used in interpretive planning, such as "enhancing a visitor's experience" and "protecting the natural and cultural resources through increased awareness and understanding." It's not that our standard goals aren't worthwhile; it's that we aren't selling them within the context of management priorities. We're not an integral part of resource management because we haven't integrated ourselves. And integration must start at the goal level.

AUDIENCE

Publics should be categorized in a way that achieve goals (Fazio and Gilbert 1981). Grouping of target audiences into senior citizens, children, physically disadvantaged, families, etc. is a recognition of the different techniques or methods required for communicating with each. The identification and analysis must be taken further. Our identification of publics should be based on characteristics that affect the communication process.

VISITOR INFORMATION

What information do visitor's need? What information do the expect, and how do they expect that information to be transmitted. How are they limited in their ability to become involved, and stay involved, in a communication process? Those with commons needs, expectations and limitations constitute a target audience for interpretive planning. Looking at target audiences in this way creates an opportunity to custom-design your approach, thus reducing the risk of failure.

For example, Lanai had two major target audiences—hotel guests and residents—with quite different characteristics. The two groups differed in the need for orientation information and expectations for information and experiences. They also differed significantly in limitations due to available time, existing knowledge, ability to learn, and interests. Analysis of these factors led to custom-designed interpretive opportunities for each group.

INVENTORY

Lanai has rare gardenia trees, a stand of dryland forest (one of the fastest disappearing ecosystems in the world), the largest concentration of undisturbed archaeological sites in Hawaii, extensive fields of pineapple, and numerous other attractions. But again, listing was only a start.

Good planning decisions require good, relevant information, such as: What sites are related geographically? What sites are related topically? What interpretive opportunities are available at the site? What is the significance of the site? How can the site be accessed? What constraints does the site have in relation to interpretation?

Answers to these questions were critical for determining if specific sites should be used, if they could be included in guided or self-guided tours, what media should be used for interpreting the site, and what stories could be told.

PARAMETERS

Parameters—or non-human factors affecting the communication process—are the set of circumstances most often left out of interpretive planning. The major questions in this category include not only identifying circumstances that have an effect on the communication process, but asking what effect those circumstances have.

For example, cool, rainy weather at the Lodge at Koele created a need for both indoor and outdoor opportunities; vandalism eliminated signs as a practical technique in remote areas of the island; the distribution of appropriate, interpretable sites determined whether interpretive auto tours and trails were appropriate techniques; and the location of fragile archaeological sites helped determine the route of those self-guided trails and tours.

THE DECISIONS

We recommended developing over 30 separate interpretive opportunities, all using one or more of six major recommended themes as frameworks for presenting information. Each opportunity in some way could make progress towards one or more of the major goals. For example, we recommended:

•a Hawaiian cowboy tour where participants could plant trees, as the cowboys on Lanai did, to help recover the decimated watershed.

•interpreting petroglyphs at only one of the three major sites, and taking the other two sites off visitor maps.

•using already well-known archaeological sites for interpretive tours and eliminating the remaining sites from visitor maps.

• training and using local residents as guides.

• concentrating interpretive opportunities on half of the island, and leaving the other half free of tourists.

PLANNING DECISIONS

The key point is that the planning decisions were derived from, and based on background information. If media is selected beforehand—a typical scenario in our profession—then the media becomes a constraint. In those cases, we are being told that we must communicate messages to a target audience, under a specific set of circumstances, in order to achieve predetermined goals—but we have to do it using a specific technique. Planning decisions should be derived or the value of the planning process is negated.

SUMMARY

Can an integrated network of interpretive opportunities help achieve a balance between tourism, livability and the environment? Yes. I believe the interpretive opportunities recommended for Lanai—through influence on spatial use patterns, mental processes, and economic opportunities—will make significant progress toward an acceptable balance.

How can such a network be developed? By deriving solutions based on analysis of key factors—goals, audience, parameters, and opportunities—and beginning the process by tying interpretation to management so the solutions solve management problems.

If interpretation can be used specifically to solve management problems, why isn't it being used for that purpose more often? I believe the following factors contribute significantly to the problem:

1. We're short of problem-solvers. Maybe we've honed our skills at talks and walks, but not at the process of deciding whether to use those techniques in the first place. Yet the problem-solving process used for area-wide interpretive planning should be the same as the one used for planning a talk.

Our training should be process-oriented (here's a communication problem; solve it) rather than project-oriented (put together a talk or brochure).

2. We often don't see ourselves outside the stereotypical arenas we operate within. This planning process can be used to solve any communication problem—public relations, education, journalism, interpretation—doesn't matter. All the label does is to define a specific setting, or a mind-set, or a media. But all of these professions confront communication problems that can be solved with the same process we use.

I'm not suggesting that we abandon our identity as a profession and melt into the vaguely defined mass of "communication specialists." I'm saying that anytime a management problem can be solved by communicating to a "leisure-oriented" audience in a "recreational" setting, interpreters should be there.

3. Finally, we need to convince those with the money that we can do the job. We need to do a better job of interpreting our profession, and putting it in terms our key audience—management—can relate to.

To paraphrase Tilden's first principle, any attempt at communication that does not relate to the interests and experience of the receiver will be sterile. Let's practice what we preach and create some "potent" communication with management.

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POLITICAL INTERACTION: A KEY TO SUCCESS FOR INTERPRETIVE PROGRAM DEVELOPMENT

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ABSTRACT: Political interaction between agency-concerned citizenry and legislators is viewed as an "essential" key to successful interpretive program development for the 1990's. Field-level and management staff in conjunction with other support groups all play an important, collaborative role in achieving desired program goals. A few of the primary benefits of political interaction are presented as well as a few case studies where such interaction proved to be successful. Those agencies and support groups who actively solicit political interest and support as part of the development process will accomplish more of their goals than those agencies who refrain from such interaction.
KEYWORDS: political interaction, program development, goals, collaboration

INTRODUCTION

All of us are involved in some fashion with either specific aspects of interpretive program implementation or guiding and managing the overall operation itself. Regardless of our role, we need to remember that:

> it is necessary for agencies to plan effectively to maximize their use of scarce resources (after Shepard).

Despite the inherent benefits of strategic (and site) planning, public participation interaction, and short-term and long-term budgetary planning, a "critical" component in determining the success of our programs is the realization that legislators often make the final decisions regarding our proposed developments.

We can produce outstanding products (i.e. plans) and obtain important community support for these products, but if we do not engage in meaningful and continuous interaction with selected politicians who control the "purse strings", we will not financially reach our stated program goals.

All interpreters, managers, and concerned citizenry have an important role to play in this vital process. It is no longer appropriate (unless otherwise directed) for interpreters to ignore the importance of engaging in the political process. Field level staff as well as such support groups as citizen advisory committees ("friends" groups), universities, and concerned individuals all play an important, collaborative role in achieving desired program development goals.

This presentation will not serve as a specific guide to working with state or federal legislators. Instead, we would like to address the benefits of "political interaction" in achieving desired program development goals with a few case studies where such interaction has proven to be both very effective and successful to a certain point in the decision-making process.

BENEFITS OF POLITICAL INTERACTION

At the outset it must be stated that agency liaison with politicians, re: budgetary and program planning review is not necessarily a new phenomena. Each resource management agency has certain staff members identified a responsible for liaison with legislators, traditionally Division or Director level administrative staff. Only in the past few years has the interpretive profession addressed this issue.

We maintain that a progressive approach for interpretive program development for the 1990's will encompass a broad, collaborative approach where desired goals are equally shared between various levels of agency staff and concerned citizenry. Efforts between the various groups are coordinated to achieve maximum effectiveness.

What is relatively new to the interpretive profession is the realization by many organizations that working with legislators can prove to be mutually beneficial and is necessary in order to satisfy interpretive development goals and assures satisfactory implementation.

BENEFITS FROM POLITICAL INTERACTION

The major benefits derived from political interaction are:

1. If respective legislators are incorporated in the ongoing planning for a particular project, they will not only understand what you wish to develop and why, but they will also assume part ownership for the project.

Such feelings of pride and ownership on their part may well translate into budgetary support and approval for the project.

2. A collaborative approach will demonstrate broad community support for the project. The impact of citizen's advisory groups, university/ research center staff, and non-agency individuals on the political process (if properly focused) cannot be overstated.

> It is important to assess your potential sources of support in the community - people and groups that will help you influence your legislator (MNDNR 1988).

SELECTED CASE STUDIES

- Slides and discussion on the success of extensive political interaction for the development of a new visitor center at Whitewater State Park in Southeastern Minnesota;

- Slides and discussion on the impact of political interaction for the Wetland Restoration/Interpretation project on Lake Winona, Winona, Minnesota.

The preceding case studies and others clearly demonstrate the importance of political interaction in achieving interpretive development goals. You may not always be successful in your initial efforts, but it is clear that without such interaction your project proposals will not have much financial and moral support. Interpreters and agency managers alike must realize for example, that interpretive planning for a park doesn't end with the printing of the document.

An equally important aspect necessary for the actual development of interpretive facilities is how well we ply our new skills in working with respective legislators. Political interaction is clearly another "hat" the interpreter of the 1990's must don in order to effectively accomplish his/her goals. We all have a role to play politically in realizing the development of our interpretive projects and programs.

AGENCIES AND SUPPORT GROUPS

Clearly, those agencies and support groups who actively solicit political interest and support as a necessary component of site development will realize more of their goals than those agencies who ignore this important process. It is inconceivable that there are still government agencies who do not understand or accept the assistance of other organizations and community groups in working with legislators to achieve desired program goals.

At Winona State University's Environmental Interpretation program, we strongly endorse the vital relationship between program development and the need for political interaction. It is an important component of our curriculum for the '90's.

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A PHILOSOPHY FOR CHANGE

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ABSTRACT: This paper examines the underlying conceptual framework of interpretation and the ways in which traditional interpretation inherently excludes minorities through programming by and for a homogeneous population. Eight categories of barriers to including minorities are discussed: historical, communicative, attitudinal, programmatic, encouragement, companionship, and the definition of the issues. Overcoming these barriers is discussed in terms of the need to recognize participant diversity, increase staff sensitivity this diversity, and recruit minority staff members.
KEYWORDS: minorities, racial relations, affirmative action, staff management.

INTRODUCTION

Environmental educators often instruct their students of the advantages of diversity within biological communities. Diversity is missing when it comes to environmental education facility staffing and participant recruitment. This indicates a serious problem in the environmental movement which must be addressed if environmentalism is to survive the 1990s. I will address this issue, to demonstrate that the absence of minorities in environmental education poses a serious threat to the environmental movement; and discuss potential ways to remedy this problem.

ACKNOWLEDGING THE PROBLEM

The United States is becoming an increasingly heterogeneous society. "After the year 2000, one out of every three Americans will be non-white" (Grant 1988). This increasing diversity in the overall population of the United States is not reflected in natural area usership and environmental organization membership. "Not one major American environmental or conservation organization can boast of significant Black, Hispanic or Native American membership" (Berle 1987). Although the ethnic composition of the United States is diverse, the use and preservation of our nation's natural areas remains a white domain.

This trend is a serious concern for environmental educators. If it continues, environmental issues will be the concern of an increasingly small minority. Environmental advocacy needs to be unconstrained by ethnicity and culture, or environmental stewardship will be lost in a rising tide of under-exposure and apathy.

SIGNIFICANCE OF CONCEPTUAL FRAMEWORKS

Environmental advocacy will not escape the bonds of ethnicity and culture unless environmental educators recognize the significance of these issues.The concept of conceptual framework presented by Warren (1989) highlights their significance. Warren defines a conceptual framework as the set of basic beliefs, values, attitudes and assumptions that shape and reflect one's self and one's world view. It is a socially and culturally constructed system which will vary with culture, historical time and economic reality. Many factors contribute to defining the shape of the framework including race, ethnicity, religion, gender, age, physical ability, and socioeconomic status.

CONCEPTUAL FRAMEWORK OF ENVIRONMENTALISM

If we view the environmental movement in terms of the conceptual framework from which it originates, the exclusion of minorities becomes not only comprehensible but intuitively obvious. Consider for a moment the founders of the environmental movement: John Muir, Teddy Roosevelt, Aldo Leopold, David Brauer... They are all products of essentially identical cultures. Therefore, they undoubtedly all see the world through a similar conceptual framework. The environmental movement does not inherently belong to this group and this framework. The presence of such names as Rachel Carson and Phyllis Ford indicate that at least gender lines can be crossed.

Lines of ethnicity can also be crossed. To do so we must recognize that we are attempting to package an idea with homogeneous origins for a heterogeneous population. Rather than ignore the barriers this implies, we must recognize them and address them as pertinent issues.

MINORITY INVOLVEMENT IN ENVIRONMENTAL EDUCATION

Barriers to the involvement of ethnic minorities in environmental education can be divided into the following eight categories: historical, communicative, attitudinal, programmatic, encouragement, companionship (Gibson 1989, Gibson and Moriah 1989), and definition of the issue.

HISTORICALLY environmental issues have not been perceived as a pressing concern for ethnic minorities. It is difficult, if not impossible, to find minorities who are recognized as significant contributors to the environmental movement. This fact alone creates a barrier to minority involvement in the environmental movement. This is perhaps the least significant barrier, however; a hundred years ago an environmental conscious was foreign to essentially all ethnic groups.

COMMUNICATIVE BARRIERS operate on many levels. First, one must address the issue of which language or languages to use? Should environmental education be bilingual? Next, there is the question of which vernacular to use. Some audiences will be more comfortable with academic English while others will be most at home with their local slang. Which ever vernacular one chooses, one should also be aware of the verve used: the energy and style behind how something is said. Finally, there is all the non-verbal communication that accompanies any message. Even the subtle non-verbal communication can have a profound effect upon how comfortable a student will be in any given educational setting.

ATTITUDINAL BARRIERS may be the largest, yet least visible, hurdles. These barriers can act both to prevent environmental education facilities from catering to the needs and interests of minorities, and to keep minorities from taking advantage of the opportunities that do exist. There are also the attitudinal barriers that keep minorities from working in the field of environmental education. Its not a widely recognized or respected field.

PROGRAMMATIC BARRIERS also inhibit minority involvement in the environmental movement. There are limited offerings. Many of the offerings currently in existence exclude minorities. This exclusion may be the unintentional result of differing conceptual frameworks or bureaucratic inertia that maintains obsolete programming because "That's the ways it's always been."

ENCOURAGEMENT. Those who manage to overcome these barriers must typically do so with little or no encouragement. They may not receive any recognition or affirmation from their families or communities. They often find themselves with few role models of a similar cultural background. Furthermore, the staff of the environmental education centers may not be encouraging. This extends beyond the treatment of minority students into hiring practices. Minorities are rarely actively recruited. If minorities are hired, they may be left on their own to contend with cultural conflicts and racism.

COMPANIONSHIP. This leads to yet another barrier: the lack of companionship with others like oneself. Minorities may find themselves forced to choose between their interest in the environmental movement and their sense of ethnic community. This may appear to be a choice between a luxury and a need. When viewed in this way, one can not expect to find many minorities in the environmental movement.

DEFINITION OF THE ISSUE

The way educators choose to define environmental concerns may also create barriers to minority involvement. Environmentalists have focused on the emotional appeals and the esthetic: "Save the Seals." These appeals are most likely to be answered by those whose survival is assured. Perhaps environmental protection should be redefined as making the environment the best it can be. This definition is more universal and perhaps more widely attainable. The overall goals of environmental stewardship remain the same.

OVERCOMING THE BARRIERS

The first step to overcoming these barriers is to openly recognize them. Only them can we begin to fully recognize our participants, increase staff sensitivity to participant diversity, and recruit minority staff members.

RECOGNIZING PARTICIPANTS. Environmental education facility staff need to recognize those who attend the facility and attempt to make them feel welcome (Gibson 1989). This should also include recognizing their programming needs and interests. Whenever possible, this needs to be done by "collaboration between organized environmental groups and existing neighborhood organizations" (Berle 1987).

This collaboration has the potential to draw members of neighborhood groups into environmental organizations. Environmental education facilities can also work with "concerned minority representatives [to] establish goals and objectives for programming" (Gibson and Moriah 1989).

INCREASING FACILITY STAFF SENSITIVITY to the needs of various ethnic groups will also help to minimize the barriers to minority involvement in environmental education (Gibson 1989). There are several ways to do this. One specific improvement that could be made is to eliminate "exclusion by inclusion." This is the type of programming that includes minorities as exceptions—a policy that can be as excluding as ignoring minorities altogether.

When an apparent attempt is made to include minorities by pointing out each person belonging to a minority group and noting their contributions, there is a subtle implication that there is something strange about the fact that they have made a contribution despite their minority status.

A more inclusive and appropriate way to recognize cultural diversity would be to simply mention the ethnicity of all persons who have contributed to the environmental movement. If the information is presented in this way, there is no underlying implied "normal" ethnicity within the environmental movement. Instead, it becomes all inclusive.

RECRUITING MINORITY STAFF. The critical step to increasing minority involvement in environmental education is hiring (Gibson 1989, McDonald and Hutchison 1986). This needs to be a multi-step process. Environmental organizations need to actively recruit minority staff. You may create apprenticeship positions designed to encourage interested minority youth and train them to fill future positions (Gibson 1989, pers. comm.) A means of recruiting minority staff is to connect with "educational institutions, such as the historically Black colleges, to promote sharing of expertise among faculty, environmental professionals, and students" (Berle 1987).

Environmental education facilities need to offer attractive, competitive jobs..**First,** the jobs must be stable to allow staff time to adjust to the job requirements and work. Shifting job descriptions will only lead to staff frustration and rapid turnover rates. **Secondly**, positions must offer competitive salaries. Environmental education facilities cannot hope to attract quality staff to fill part-time, seasonal positions. **Thirdly**, minority staff need to work their way up through the job hierarchy to administrative positions.

"Minority membership on the board of directors of local and national environmental and conservation organizations" would have a very positive effect on minority participation in the environmental movement (Berle 1987). Minority visibility in all levels of environmental education facilities must be the litmus test of minority involvement in environmental issues.

CONCLUSION

There is no single quick and easy solution to the lack of minority involvement in environmental education. Solutions must be found or the constraints of ethnicity and culture will lead to the destruction of the environment. This paper has discussed the problem and offered potential solutions. This discussion must continue. This is a complex problem which can be resolved in many ways. Continued discussion of the challenges of environmental programming in a heterogeneous society and implementation of the solutions purposed by a variety of sources is mandatory for the survival of the environmental movement in the 1990s.

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INTERPRETATION: A DECENTRALIZED APPROACH

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ABSTRACT: Explore the use of partnerships with private or commercial enterprises to expand interpretive services and bolster interpretive budgets; a practical approach that uses a successful partnership as a case study to examine the advantages and disadvantages of a decentralized approach to interpretation.
KEYWORDS: partnerships, decentralization, management, organization.

INTRODUCTION

Visitor "Center". Nature "Center". "Center" for this and "Center" for that. Come to our "Center". While "Centers" offer some distinct advantages, they are not the only approach to interpretation. Sometimes decentralizing may be a more effective means of accomplishing your interpretive objectives.

While the most prominent visual feature of a nature center or visitor center is its facilities or buildings, let's, for the moment, set this picture of the "center" aside. Instead, let's focus on the centralized staff of most interpretive operations. The traditional organizational model is an office, some support services, a supervisor, and several interpreters.

CASE STUDY

Through the use of a case study, let's look at a different model. In 1986, our District wanted to expand interpretive services offered to the public. Hiring a seasonal interpreter to give programs at Forest Service campgrounds and area resorts was one alternative. Due to budget cuts and staff reductions (sound familiar?), this option was out of the question. Instead, we approached area resorts, campgrounds, and businesses with a partnership proposition.

If the resorts and chambers of commerce would hire, feed, and house interpreters, the Forest Service would recruit, train, and support them. It turned out to be a good deal for the businesses, the Forest Service, and the public. Custom, on-site interpretive programs for their guests allowed resort owners to diversify their business and expand their market base. Five new interpreters allowed the Forest Service to dramatically expand our environmental education efforts and interpretive services.

ADVANTAGES FOR A DECENTRALIZED SYSTEM

After five years of tinkering with and adapting to a decentralized system, we have realized that it offers some significant advantages for interpretive programs. It dramatically reduces the amount of travel time, the need for vehicles, and office space. It places the interpreters in close proximity to their audience increasing their availability and convenience to the customer.

Probably the biggest plus is that the interpreters literally live with their audience for extended periods of time. This allows the interpreters to get to know their audiences on a more personal basis, to build rapport, and to tailor programming to fit their customers' specific needs.

PROGRAMMING

The extended stay of the guests also allows for a chronological progression of programming. Many guests might be intimidated by the prospect of a wilderness canoe outing. Some may be afraid they would get lost. Others may feel they couldn't portage a canoe. Still others may not possess the skills to paddle a canoe. With a series of programs throughout the week, starting with a canoe paddling clinic and culminating with a wilderness canoe outing, the guest can be moved along incrementally in small, sure steps. Progessional programming allows the treatment of more complex and challenging subjects.

The informal, relaxed atmosphere at the resort provides a rich interpretive setting. Small groups at the lodge, on the lake shore, and around the campfire are the rule. Small group interpretation in a relaxed atmosphere fosters more personal contact and interaction between participants and the interpreter.

PLACING INTERPRETERS AT LOCATIONS

Another benefit of placing interpreters at locations where people recreate is that a wider cross-section of the public is contacted. People who frequent nature centers and environmental camps already have a natural interest or predilection toward nature study and are more likely to have a "heightened" environmental awareness. By bringing interpreters to the people there is a chance to kindle environmental awareness in whole segment of the population that may never come to a nature center.

Decentralization has also helped our organization in other ways. By placing our interpreters out in the community, we have also realized an improved public image and enjoyed closer ties to the community.

While a decentralized approach has worked well for us, there are some downside risks you need to be aware of. Among them are a possible loss of control through the use of partners, quality control of interpretive programs, interpreter isolation, and increased difficulty communicating with and supervising field interpreters. None of these problems are insurmountable.

WEBWORKS

A biweekly newsletter, Webworks, helps us to improve communication. Increased training, both initial and ongoing, increases the quality of interpretation and reduces interpreter isolation. Probably the biggest hurdle is supervision. While the interpreters are in close proximity to their audience, they are often quite some distance from their supervisors. This dictates that the supervisor must get out of the office and spend time with their interpreters at the remote sites.

This case study highlighted resorts as a good prospect for an interpretive partnership and as a way to decentralize your interpretive program. However, this approach can be adapted to almost any tourism-based economy where people stay for an extended period of time.

Nationwide, I am aware of the Forest Service using dude ranches, river rafters, ski areas, and cruise ships to apply this approach. If you are located in an area that has a tourism based economy, chances are good that you can expand the amount and kind of interpretive services that your organization offers through interpretive partnerships.

VISITOR ACTIVITY MANAGEMENT: PUKASKWA NATIONAL PARK

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PUKASKWA NATIONAL PARK - "the wild shore of an island sea" Pukaskwa National Park protects a 725 sq. mile expanse of boreal hinterland, rugged hummocky Canadian Shield and 50 miles of Lake Superior coastline. Woodland caribou, timber wolves, moose and black bear reflect the wilderness aura of the "wild shore". The awesome power of Superior is the "island sea". Park annual visitation is about 25,000. The vast majority of visitors stay within a 100 acre road accessible area, around Hattie Cove. Inland travel is on foot, along the 40 mile long costal hiking trail. Coastal travel is by boat (power, sail) sea kayak or canoe.
KEYWORDS: National park, visitor facilities, management process, VAMP

THE CHALLENGE

The park purpose and objectives statement of the Pukaskwa National Park Management Plan (1982) gives general direction of the development of visitor opportunities.

> Visitors may experience a natural boreal forest environment . . . or be inspired by the spectacular scenery . . . These are the types of experiences the park will offer through appropriate wilderness recreation activities . . .

Pukaskwa National Park, with the emphasis on preservation of the natural environment will add a wilderness dimension not presently available in the region for outdoor recreation enthusiasts.

The challenge at Pukaskwa was to determine how to respect and integrate the above in the development and operations of park facilities, programs and services.

Within the Canadian Parks Service there are well established resource protection policies and practices (National Park Zoning, Natural Resource Management Process, Environmental Assessment and Review Process). The latter are resource based processes, providing very limited information to determine, **(a)** the range and significance of visitor opportunities (recreational, educational, inspirational)**(b)** the essential and appropriate levels and locations of support facilities, services and programs, and **(c)** the relationship between visitor facilities and services and the interpretive objectives of the park.

In the absence of a visitor management process, facilities were designed and located so as to provide maximum site protection. Little consideration was given as to how effectively the facilities would accommodate user activity patterns, user needs and expectations. Such facilities (i.e. remote campsites) were often bypassed by users who opted to make do on sites more suited to their aspirations.

VISITOR ACTIVITY MANAGEMENT PROCESS (VAMP)

The Visitor Activity Management Process (VAMP) was consequently adopted as a parallel tool to the natural resource management processes. VAMP provided an innovative management framework through which the park could identify and define a spectrum of visitor opportunities.

Following a format similar to Recreational Opportunity Spectrum (R.O.S.) as implemented in the United States, VAMP determined a range of visitor opportunities based on five qualified criteria:

- access, ease and type
- social interaction; a mainland nature of contact
- site management; level of facilities; degree of site engineering

• resource protection; acceptable levels of impact

• use control; indirect strategies (degree of difficulty of access) or direct strategies (quota system).

The above resulted in the identification of four types of visitor opportunity areas;

• Front country

• Back country
  (a) semi primitive
  (b) primitive
  (c) wildlands.

Concurrently VAMP called for an objective assessment of the recreational and educational resources of the park. The local, regional and national/international significance of the recreational opportunities (i.e. paddling a wild whitewater river, hiking costal headlands, exploring interior hinterlands) were evaluated in much the same fashion as one might evaluate their natural significance. This exercise resulted in a short list of key recreational opportunities as well as rough base map showing where such activities would best occur.

The visitor opportunity areas and recreational opportunities were incorporated into a series of visitor activity concepts. In addition to determining the locations, type and levels of facilities, the concepts effectively identified the park's marketing strengths and produces (experiences) and major market groups.

VAMP is both influenced by and influences the parallel natural resources management processes. Through the resource protection criterion in the determination of visitor opportunity areas, resource managers could advise for or against the acceptability/suitability of site development, identify mitigating measures and recommend an acceptable level of visitor activities (by recommending the site as suitable for development at a wildlands, primitive or semi-primitive level). In reciprocal fashion VAMP located candidate development areas thus allowing resource managers to focus or expand the areas' resource description and analysis.

PARK THEMATIC INTERPRETIVE ELEMENTS

VAMP incorporated park thematic interpretive elements into its perspective development scenarios. The park visitor activity concepts included an interpretive resource analysis for each recreational opportunity area. Facilities and services envisioned for the areas would be subsequently designed and operated to maximize the visitor perception and understanding of the natural, human or cultural themes.

VAMP significantly enhanced its park's ability to identify, plan and manage visitor experiences'. The process provides continuity throughout all stages of the planning process and direction for program development and operations.

THE CHARLOTTE HAWKINS BROWN MEMORIAL: MASTER PLAN FOR INTERPRETING A SOUTHERN BLACK EDUCATOR'S VISION

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ABSTRACT: A discussion of the methodology used in developing a master plan for North Carolina's first state historic site to commemorate the accomplishments of an African-American. The field of social history will be considered as it impacted the selection of the site and the interpretive orientation of the proposed site programming. A discourse on the specific history of Dr. Brown and Palmer Memorial Institute will be used as a prologue to an assessment of the site's typology. Restoration philosophy and landscape re-creation also will be considered.
KEYWORDS: African-American history, master plan, social history, restoration philosophy

THE CHARLOTTE HAWKINS BROWN MEMORIAL

Recent trends in social history had a profound effect on the type of historic sites deemed appropriate for interpretation in the 1980's. At the urging of social historians who recognized the full spectrum of contributions, the previous orientation toward this country's "founding fathers" gave way to an understanding of the broader range of history which cumulatively made up this country's national patrimony. In this regard, North Carolina led the way with the publication of *The Way We Lived in North Carolina*, a series of books for 8th grade history students which used extant historic sites as the backdrop for discussing a broad range of topics from military history to the agrarian life of the average North Carolinian. Upon publication of the series, it became evident that certain aspects of the state's history, particularly the contribution of African-Americans, were not being recognized and interpreted. An effort to identify sites which could fill this void was undertaken.

In 1981 the campus of the defunct Palmer Memorial Institute came to the attention of the Historic Sites Section of the Division of Archives and History. Palmer and its founder, Dr. Charlotte Hawkins Brown, had been nationally prominent in advancements in the education of African-Americans during the first half of the twentieth century. Originally following the model established by Booker T. Washington in the education of blacks for manual and domestic work, Dr. Brown's curriculum evolved into college preparatory study.

LEGISLATIVE APPROPRIATION

By 1983, a legislative appropriation funded two staff positions to study creating a memorial to Dr. Brown. The campus had recently been acquired by the American Muslim Mission and initial efforts to purchase even a portion of the former school proved unsuccessful. But as the financial condition of the Mission became more bleak, the possibility of acquiring the entire campus of 40 acres and eleven buildings became a probability. By late 1987 a dedication ceremony had been planned.

Even though a toe-hold had been created at the site by converting the Teacher's Cottage into a temporary visitor center and installing exhibits, the short and long term goals for the site had not been established. So much effort had gone into securing state ownership of the site and getting it opened as a means of increasing public awareness, that there had been little time to determine short term and long term goals. A team was established to develop a master plan for the site which would address a full complement of concerns including the relationship between the state and an interested non-profit support group.

PALMER MEMORIAL INSTITUTE,

After reviewing the available research material on Palmer Memorial Institute, a nationally ranked black college preparatory school, and Dr. Brown, a prominent leader in education and race relations, a series of meetings ensued at which a full range of topics were discussed in a brainstorming format. What was important about the brainstorming was not only the unrestricted vision of what the site could be, but the exposition of the site's morphology and typology.

Through an exercise in which a list was created defining why the site was historically significant, Palmer's typology clearly emerged. In a similar manner, when the assets and liabilities of the campus were studied in detail, a morphology was exposed.

From the analysis of morphology and typology emerged the nature of the site as representative of a broader aspect of the state's history (i.e., strides in African-American education) and documentary of the particular history of Palmer Memorial Institute. Once it became clear the site was both representative and documentary, the programmatic uses of the considerable number of buildings became much clearer.

A second brainstorming session opened up the spectrum of programmatic alternatives; the possibilities seemed endless. With only two "givens" in the planning process, that Canary Cottage, Dr. Brown's private residence on the campus, would be a historic house museum, and that there would be space allotted for a black history resource center, the team was free to discuss all possibilities. Since the site's focus was education, the team immediately decided that a strong educational emphasis had to be maintained beyond the customary educational purpose of a state historic site.

HISTORY OF PALMER

Concerts, plays, poetry readings, and art exhibitions all were considered as valid interpretive programs within the context of the history of Palmer. Further, such changing events as these could provide a lively balance to the more static standards of audio-visual shows and fixed exhibits. The community had long benefited from the influence of Palmer, and through active relationship and Dr. Brown's ideas on education and culture could be preserved.

Because the new historic site was, in part, documentary, the philosophy for the restoration of the campus took a more routine course. The exteriors of all buildings would be faithfully restored to their appearance in the late 1940's. Not only was this Palmer's "Golden Era", it also was the time frame that included the majority of the campus's buildings. Some of the interior spaces, however, would have to be used adaptively in order to accommodate all the functions of an operating historic site.

Those interior spaces most significant to both the history of the school and a full understanding of how the school's curriculum was structured were identified for restoration rather than reuse. The dining hall, in particular, played a pivotal role in the school's history: the interior of that building would be restored and have a distinct interpretive purpose. Because it was the largest remaining space on the campus, it would also provide a multi-purpose function. Receptions, concerts, art exhibitions or community activities could be held in this space thereby meeting a need at the new state historic site and continuing the historic use of the building.

The landscape setting created by Dr. Brown was cited as another significant component of the campus. Her emulation of the New England prep school model is reinforced through the plant material and walkway configuration. Like the buildings, the landscape setting will recreate the school's appearance in the late 1940's. New features, such as parking lots and rest areas for visitors, will, however, be sensitively integrated.

The Charlotte Hawkins Brown Memorial master plan was written as a flexible document.Topics like handicapped accessibility, pedestrian and vehicular circulation, maintenance facilities, service roads, signage, water and sewer service and additional research needs were also addressed. Knowing that the process of securing funding through the state would be slow, it was anticipated that some items would change, that priorities would be altered. What was important, however, was the creation of the framework - no, the vision - of what the site should be and the resolve to remain true to that vision.

Though the first steps have been somewhat shaky, the understanding of where the site has been and where it is headed remains clear.

AMERICAN NATURE CENTERS: GUIDELINES FOR THEIR MANAGEMENT

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ABSTRACT: This is a report of the results of a series of intensive roundtable discussions by some of our leading nature center directors. It contains management guidelines pertaining to the issues of funding, educational programming, and architectural development.
KEYWORDS: nature center management, funding, education programming, architecture

INTRODUCTION

The Roger Tory Peterson Institute seeks to promote the emotional and intellectual linkages of people, especially children, to nature. It eagerly sought an opportunity to bring together and learn from a small group of America's leading nature center professionals. These people, and the hundreds more they represent, are doing some of the most exciting and essential work of our nature conservation and environmental effort. They create and direct connections of people, young and old, with the natural world.

According to Websters, a confab is "an informal talk." It is the term RTPI has chosen to denote a series of small conferences involving 15-20 national leaders in nature education. The first confab, *The American Nature Center: Leadership for the Nineties*, was held in early December 1989 and provided an opportunity for invited representatives from successful nature education organizations from around the country to discuss strategies and define guidelines for practice in the management of a nature center. The work centered on three questions related to architectural building programs, education, and funding. A formal process of facilitated small group discussion promoted an open exchange of thought based on successful experience. Guidelines were prioritized and listed in a set of recommendations that are summarized below.

ARCHITECTURE

It became clear during the deliberations that it was not an uncommon experience to have a major building projects become out of control. Control and project management are central concerns of people who have been through the process of managing a major capital building project from start to finish. You only get one chance and because of the expenses involved it has to be right the first time. A set of recommendations were developed to select an architect and manage a capital building project in a way that will assure the successful meeting of your goals within established budget parameters.

•1) MANAGE THE VISION. Blend creativity and enthusiasm with the practical to achieve conclusive decision making. Design and understand the philosophy of the entire project. Maintain a concern for how the project fits your community as well as your center. Adhere to a holistic mission and hold sight of environmental ethics and established goals.

•2) DEVELOP A FUNCTIONING, DYNAMIC PROJECT TEAM TO WORK WITH YOUR ARCHITECT TO DESIGN AN APPROPRIATE FACILITY FROM THE INITIAL CONCEPT THROUGH CONSTRUCTION. It is recommended that a 6-8 member committee be established to work directly with the architect and to serve as liaison with your board and your staff. It is most important to choose a chairperson who is a respected leader and who can establish ground rules for decision making from the beginning.

•3) DESIGN FOR APPROPRIATE ENVIRONMENTAL TECHNOLOGY. Make certain that important functions of your center determine the architectural design and not the other way around. The end product must work!

Be certain also that building and or site leaves the visitor with an impression that is in harmony with nature. For example, the design should use energy conscious utilities and require the lowest possible maintenance.

•4) ESTABLISH A PROCEDURE TO MANAGE THE PROCESS OF SELECTING AND MANAGING THE ARCHITECT. Here, the importance of a clear decision making process can not be overstated. Determine who on your team is responsible for various parts of the process such as developing requests for proposals and selecting the architect. Develop a table of organization that everyone involved understands. Establish a master plan that includes time lines. Conduct a feasibility study.

•5) DEFINE CRITERIA FOR SELECTING AN APPROPRIATE ARCHITECT. Consider the following: record of work relationships on past jobs; skills and functions of the firm; history on ability to meet deadlines, credit rating, lawsuits, etc.; familiarity with planning and zoning laws; and ability to deliver an appropriate environmental message through the design.

•6) HAVE AN ONGOING DESIGN PROCESS. Appoint an external review committee. Establish a schedule of meetings and progress reports. Establish a clear, written procedure for making change orders. Remain open to change.

•7) PERIODICALLY EVALUATE THE FACILITY FOLLOWING CONSTRUCTION TO DETERMINE WHETHER IT CONTINUES TO FIT YOUR PROGRAM NEEDS AND PHILOSOPHY. Here it is recommended that an evaluation team be established, made up of the architect, a board representative, the executive director, and appropriate staff.

EDUCATION

In a nutshell, education programs need to be both relevant to the needs and interests of the end user and remain true to the mission of the institution. The importance of defining and keeping the mission visible is fundamental to successful education programs. Ongoing change in light of user needs and program evaluation data were also stressed.

•1) MAKE SERVICES PERSONALLY RELEVANT. Where possible, focus programs and services on local and personal issues. This recognizes that people, in general, have an interest in and are motivated to learn about issues that directly affect them. Using such issues as jumping off points to teach about the environment and nature is effective.

•2) IDENTIFY WHO USES YOUR NATURE CENTER AND DETERMINE THEIR NEEDS. As an example, if schools are major users (or you would like them to be), review their existing curriculum requirements and match your offerings to their needs where possible.

•3) PROMOTE, MARKET, IMPLEMENT, AND EVALUATE YOUR PROGRAMMING. Develop a marketing plan that reflects an understanding of the markets you wish to reach. Include in the plan, the establishment of personal relationships with media. Maintain an ongoing system of evaluation and revision.

•4) DEVELOP AN EDUCATIONAL MISSION STATEMENT. This should be developed by a group process involving trustees, staff, volunteers, teachers and other user groups. Once there is a consensus, the mission statement should be formally adopted by the Board of Trustees and communicated throughout the organization. Make the mission statement a visible part of your daily operation.

•5) PROVIDE CONSISTENTLY HIGH QUALITY PROGRAMS. This will require the hiring of well qualified staff and a system to evaluate their performance. As with the need to consistently evaluate adherence to mission, programs must be monitored and modified to keep them up to date and of the highest quality. Recognize the importance of and provide ongoing support to staff training and the production of educational materials.

FUNDING

The three most important contributors to a solid financial footing are planning, planning, and planning. Cultivating a diverse base of donor sources, good media relations, and the ability to maintain a high level of integrity with respect to mission are all the results of good planning.

•1) DEVELOP A COMPREHENSIVE PUBLIC RELATIONS STRATEGY. The first step in fundraising is the development of a marketing strategy that assesses your needs, studies the market, and establishes a time line. Learn how the different media work. Establish a continuing relationship with the media in your area and use them to you advantage.

•2) DEVELOP BOTH A LONG RANGE STRATEGIC PLAN THAT ADDRESSES THE FUTURE OF YOUR ORGANIZATION IN TERMS OF ITS MISSION. The strategic plan deals with questions such as "How do we become what we want to be; what we say we are?" Properly written, it establishes goals, objectives, and budgetary constraints. It draws out your organizational chart showing how various functions and people relate to one another. It is recommended that the plan be published and then reviewed and revised annually.

•3) DEVELOP A FINANCIAL PLAN THAT EXPRESSES YOUR CENTER'S STRATEGIC GOALS. The plan must involve operational, capital, and endowment budget components. Apply a strategic framework process that comprises: time frame, market evaluation, and assessment of both critical needs and necessary products. Identify annual funding priorities to be incorporated in a written funding plan. Define the annual funding goal a budget for fund raising itself. Develop literature and cultivate funding sources with special events. Key concepts to keep in mind when developing funding sources are "involvement" and "education."

•4) DEVELOP A DIVERSITY OF FUNDING SOURCES. The "dependable" grant from a local industry may dry up in hard times. Creating a broad base of funding sources gives the nature center a safety net and ensures that it is not put in to a position of having to compromise its philosophical beliefs in order to continue to receive funding from a source that may be trying to influence its decision making. A nature center is urged to conduct donor research and thus become familiar with prominent individuals, organizations, and businesses. Learn their giving patterns and interests. Continually seek out new markets, new members, and create new fund raising events. The staff needs to be trained to promote the facility as an integral part of programming.

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ENSURING YOUR FUTURE—INTERVIEW PREPARATION PRODUCES THE BEST POSSIBLE EMPLOYEES

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ABSTRACT: Usually there are no shortages of qualified applicants for professional interpretative positions . . . so how do you design a selection procedure to ensure that the person you end up with (the future of your organization) will be the best possible choice? As with almost anything you may do in like, PREPARATION is the most important step; and this exercise is no exception. However, you will discover, happily, that if you have been doing a good job of planning and documenting the future of you organization, you have already accomplished much of you task, leaving only the most dreaded part—ORGANIZING! This paper attempts to help in the areas of preparation and organizing for a successful selection of the best employee for your organization.
KEYWORDS: interview, interpretation, human resources, preparation, organization

INTRODUCTION

For many years, all sorts of professional organizations have begun, grown, sometimes prospered and continued, or in some cases faltered and ended rather disappointingly ahead of their time.

Of course, there are many reasons for the successes or failures of any organization. (This paper does not contain a discussion of all of these!)

Some reasons you, as an individual, cannot exercise a great deal of control over other ones you can. This paper attempts to deal with one such aspect that you as a selecting supervisor, not only should be in control of, but should be held responsible for—staffing your organization!

The paper will discuss in general or procedural form the steps involved in designing a specific or tailored interview selection technique that will, in this case, enable the professional interpreter to seed out and hire the right staff to ensure the long life and continued success of the organization.

INTERVIEW PREPARATION

This article will not deal with advertising for positions—it rather pre-supposes that you have already prepared job descriptions and advertisements for use in professional journals and that you have received many rather interesting resumes. Now what?! Panic! Hire the first one through the door?

REMEMBER THE APPLICANTS

The last? . . . Of course not! Remember the applicants will be more nervous than you are! Hard to believe! Remember the applicants will be more nervous than you are! Hard to believe? Well, it is true and is all the more reason to leave nothing to chance. Start preparing for the most important part of whole hiring scenario--the interview.

Try to think of the interview as a method for matching an individual's knowledge, skills, abilities and future aspirations with an organization's momentary needs and long-term goals. Your job as the responsible or selecting supervisor is to develop the best listing of job-related questions so that when asked each person interviewed will yield an adequate and accurate rational for making a selection.

To assist in creating such a procedure, I have outlined a suggested approach:

I. Basic Steps for Interview Preparation

- Identify job requirements
- Identify organizational goals and objectives
- Develop the necessary knowledge, skill and abilities required to perform the job
- Review the applicant information
- Decide what information to share with the applicants
- Arrange the place and set times for interviews

II. Decisions For Interviewing

- The use of multiple interviewers and special tasks of each interview
- Note taking
- Avoidance of illegal discrimination

III.The "Structured" Interview

- Designing an adequate Structured Interview Form
- Types of questions to ask
- Types of questions to avoid

IV.Interviewing the Candidates

- Establish rapport
- Establish agenda for the interview
- Gather information
- Answer questions and close the interview

V. Making the Choice

- Assemble information on candidates from:
- application materials
- structured interviews

VI. Examine the results and start process of elimination (bottom to top)

- Choose top candidate
- Document your decision

CONCLUSION

It is a proven fact that organizations like people can only know where they are going when they are following a plan. Therefore,, it follows a plan. Therefore,, it follows that employers select the best suited employees only when they share the organizations goals with the candidates they are interviewing thus allowing both parties to match goals and objectives--or blend their futures. Remember, all you ideas in this regard are useful as long as all candidates are treated the same.

DOCUMENT THE RESULTS

For example, if you can make your point regarding organizational goals better by designing an exercise or situation rather than straight questions and answers, by all means do so. Just make sure that you carefully document the results of the individual applicants and that the exercise is job related. Exercise problems are especially good for "tie breakers" when you have two candidates that compare very closely with each other.

Following a self-developed structured interview process has been tried and proven by many kinds of organizations; if a given proper attention, it will prove successful for your organization. This is especially true if the person designing the selection technique allows for the employers and the organization to blend their futures to achieve mutual success.

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NOW, HOW DO WE PAY FOR IT

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ABSTRACT: New ideas and programs are often delayed or not implemented for lack of funding. Using fund-raising basics, it is usually possible to generate funds for these ideas and programs.
KEYWORDS: fund-raising, development, capital campaign, annual fund, contributions, donations.

PHILOSOPHY ABOUT GIVING

Over the years, a certain philosophy about successful fund-raising has been developed. Some of the tenets are:

•People are not giving all they can give.

•People have become numb to giving, a result of a flood of urgent appeals. ***Therefore:***

•People no longer only give to causes, people give to people.

•Most gifts come from a minority of potential donors. (This is critical!)

•If you broaden the base of prospects, you are going to increase your total of giving.

• Your best giver is a constituent, a user, a beneficiary of your services.

•Your best giver is a previous donor.

•Giving often benefits the giver more than the receiver because it satisfies man's built-in need to give.

PREPARING FOR A FUND-RAISING EFFORT

The more creative you can be about expanding the area where you perform services, the greater area from which you can seek funds. For example, if your users come form an area other than where you are located, you can raise funds where your users reside.

FUND-RAISING OBJECTIVES

1. Capital Fund Raising Objectives

Capital objectives are those that tangible increase the value of the organization in one way or another. Called "bricks and motor", Capital gifts are by far the most popular.

2. Program objectives

Program (or project) objectives are the second most popular funding category. The key concept investment. Funding sources, particularly foundations and corporations, generally seek projects offering "the most bang for the buck"—projects, which can provide regional and national models and offer real incentives for positive change.

3. Operating Fund Raising Objectives

All that can neither be defined as capital objective nor a special program remains in the category of operating money. This is the most difficult money to raise from corporations, foundations, and significant individual donors.

4. The Savings Account

Once the capital, project and operating fund raising objectives have been set, the agency should put away in its endowment fund. It should be understood that regardless of the sum it cannot ordinarily be raised either from corporations (other than small businesses which give unrestricted, operating grants) or foundations (except for small, family-run foundations which operate, for all intents and purposes, as individuals).

THE FOUR I'S IN FUND RAISING

Fund raising is a sciences as well as an art. The science involves specific steps. How the steps are taken can be an art. The steps are four:

1. Identify - donor prospect
2. Inform - them about your organization
3. Involve - them in the work you do

4. Invest - seek their investment

IDENTIFY PROSPECTS

Probably the most overlooked facet of planning for fund raising yet one of the most important is research—that of individuals as well as of corporate entities. One popular fund-raising authority has indicated that 80% for a fund raiser's time must be spent in research "the rifle shot" approach to funding. It is much more important today than is "the shotgun" approach.

INFORM

Tell your donor prospect who you are, why you exist, what you are doing and why it is important (or should be) to them. Use news media, newsletters, personal visits and telephone calls—he prospect with greatest potential merits most personal attention.

INVOLVE

People support with their dollars into what they already have invested their energy. Put your best prospects to work for you in planning and organizing what it is you want them to support. At least ask advice from major prospects.

INVEST

The ask for gifts comes in various ways. Again the better the prospect the more personal attention. Face-to-face gets the best results (after the solicitor has made his/her gift). Direct mail and special events also play a role.

Asking for money is one of the critical ways your organization will serve to do its good work. Without nonprofit organizations life would be significantly altered and immeasurably impoverished.

Thus, to overcome you natural hesitancy remember that you ask for money to serve others - including the people who themselves give the money. The act of solicitation is an act of citizenship and humanity and should be regarded as such

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INTERNAL INTERPRETATION BUILDING PROGRAM SUPPORT IN YOUR ORGANIZATION

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ABSTRACT: Interpreters face a lack of support and understanding within their own organizations. We expect others to know the value of our programs, but seldom take the time to interpret our relevance. Many interpreters are viewed as unrealistic, fuzzy thinkers, or birds and bunnies folk by management and technical peers. Interpreters can apply interpretive techniques to the work environment to improve their communications with agency decision makers and coworkers.
KEYWORDS: interpretation, communication, team building, goals

INTRODUCTION

Good interpreters have the ability to reveal meaning to their audience through a wide variety of techniques. They understand the need to know their audience so that they can communicate effectively with them. These same interpreters may be viewed as a ***"frill"*** within their organization, nice to have available for the public, but not a top priority when it comes to budget, manpower, or decision making.

Interpreters, naturalists, historians, and others of the same ilk are often viewed as dreamers not doers, ***"soft"*** not ***"hard"***, out in left field, not part of the mainstream management. Interpreters should look to themselves for the solution to these problems.

BACKGROUND

Interpretation is often thought of as a new profession, however it is as old as many of the major federal land management agencies. John Muir and Gifford Pinchot were masters at interpretation and used their skills to lay the foundations of the National Park Service and the U.S. Forest Service. Both men were extremely powerful and had the ear of the President and Congress.

Today these agencies are being criticized on all sides for everything from natural fires policy to endangered species management. Interpreters in these and other federal and state agencies are often seasonal personnel. Significant gaps exist between administrative staff, enforcement staff, and interpretive staff.

Top level staff, frequently selected from technical, administrative or even political backgrounds can't understand why the public doesn't understand the agency. Interpreters, isolated from the decision making circles are not being heard. Unfortunately this isolation is partially self imposed.

STRATEGIES

Interpreters need to develop a clear working relationship with their fellow employees and supervisors. Opportunities exist everywhere and in several medias. Ask maintenance workers, secretaries and administrative personnel what their questions are about your job and write an article for your employee newsletter to answer those questions—not just articles explaining the breeding cycle of bats. Offer to host a family day in your visitor center for agency families. When you return from training or a conference write a memo to your boss and his/her boss explaining the benefit to your agency of what you learned.

Develop a sense of trust with your higher-ups, ask for budget or manpower that you need without padding it. Learn what others do and ask how you can help them. Brainstorm with your peers in on how you can explain park rules to the public so that enforcement problems can be reduced.

An excellent chapter on "internal publics" is included in Fazio and Gilbert's *Public Relations and Communications for Natural Resource Managers*. The workshop will examine ways to develop program support by sharing experiences of the participants.

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CREATING A 21ST CENTURY INTERPRETIVE PROGRAM

William S. Chiat, James L. Massey, and John Ververka

ABSTRACT: What will tomorrow's work force, and therefore tomorrow's interpretive services customers, be like? Computer literate young customers, artificial intelligence, fax machines at McDonald's, interactive information stations, computers, modems, electronic mail, entrepreneurial employees working for you and for themselves, super mario brothers, flight simulators on your home computer and working at home are all reality today. They may be commonplace by the time you can plan, budget, fund and build your next interpretive center. This panel will explore these topics and others important in creating a 21st century interpretive program.
KEYWORDS: long range planning, management, entrepreneur, 21st century, interpretive planning, marketing, customer service.

INTRODUCTION

As someone once said in a song, "These times they are a changing". Managers with World War II management skills are giving way to TV generation managers and computer generation managers, if not here already, are well on the way. Walkman, MTV, compact disks and desk top computers are today's reality. Customer service, flexitime, flexiplace and entrepreneurial attitudes are all pointing toward individual workers (your customers as well as your employees) who want more autonomy, less supervision, more leisure time and flexible schedules.

Independence may be replacing team work solutions to business and government problems. All of these trends and more will be faced by managers, in many cases governmental managers, whose organizations are often reluctant to change, whose people are ill-trained to contend with new technology and whose budget process dictates a decade between idea and on the ground operations. What are some of the 21st century concerns that interpretive managers should be considering today? The panel will discuss some of these concerns and opportunities as they see them including the following ideas.

CUSTOMERS INDEPENDENCE

The workplace is moving toward more independent, self-directed operations. Computers, flexitime and flexiplace allow people to work at home connected to the office by telephone line, fax machine and computer modem. Managers keep track of employees time by monitoring computer traffic. People shopping at home by computer or television further reduce traffic congestion. What impacts will this flexible time and independence have on your interpretive program? Will people expect computer reservations for nature walks, change their weekly visitation patterns, expect video programs for their home so they won't even have to visit the park?

COMPUTERS, VIDEOGAMES, MTV, ARTIFICIAL INTELLIGENCE, ROBOTICS

High resolution video images, computers with emotions, quality video extravaganzas, computer/TV interaction are commonplace today and growing industries. Young people expect this kind of "performance". Do you offer video presentations that your customers can borrow to view at their motel during the evening? Are they homemade? People who visit your park, and many who do not, use robotics daily when they interact with their automatic bank teller machines. They book cultural arts performances months in advance through private booking agents often by machine. How convenient have you made it for your customers to book one of your campfire programs or guided tours.

NEW OCCUPATIONS

As careers change, so do personal interests. New occupational titles for the future might include artificial intelligence technician, bionic medical technician, child advocate, cultural historian, divorce mediator, fiber-optics technician, hibernation specialist, ocean hotel manager, pollution botanist, robot trainer and software talent agent. How is your program changing to meet the needs and expectations of these customers?

THE OFFICE . In the information age, the new currency is ideas. The workforce is deeply involved in the process of continuing, throughout-life, education. Keeping up with new ideas and information is now more than a full time job. Problems are not compounded; they are exponentially multiplexed as more things happen at once. Circulating a memo up and down the line no longer produces answers in time to resolve immediate problems when deadlines may be in hours or minutes rather than days or months.

Workers will be rewarded based on the value of information (ideas) added to the product. Organizational structures will tend to flatted as people become more independent, push information up the organizational structure and are able to control information so they can make accurate decisions themselves. How will this effect your organization? Are you planning programs that people can manipulate themselves?

CUSTOMIZED APPLICATIONS

Most competitive products and companies are pretty much the same. What makes one company a success and another a failure? More and more it is customized applications to meet customer needs. In short, service; service targeted at specific groups the organization wants to attract. When was the last time you assessed and segmented your customers? When was the last time you built a program designed to be specifically different from your competitor?

PARALLEL PROBLEM SOLVING

Information is moving too fast and problems are usually interconnected. Solving one problem at a time and moving on the to the next is not efficient and perhaps even impossible. How often do you analyze your problems in relation to those of other divisions and the rest of the park? How many problems do you juggle?

MANAGEMENT

As information becomes increasingly complex and volume increases, people who have access to this information and can apply it directly to problem resolution will be those people making the decisions. Managers will have more questions than answers. Decisions will be faster-paced and the need for middle management will decrease. Organizational structure will flatten and management's prime concern will be motivation.

Advancement will come to those who develop their skills and are able to work independently as entrepreneurs. Have you considered what your organizational structure will look like in the 21st century to meet your customer's needs? Will most of the interpretive work be done by private sector entrepreneurs?

CUSTOMER SERVICE

The key to success in today's market is customer serv'ce. Look at television commercials. What is Eastern Airlines providing? Disney World? Northwest Airlines? Honda? Look closely and you will see that they are marketing customer service in the broadest sense. Northwest Airlines is helping their customers do business in the Orient. They are not selling seats on an airplane.

Customer service is more a way of thinking about people who visit your park; a way of treating people who visit as your guest. Think of what **THEY** want to do rather than what you want them to do or believe. Certainly what they do should be within the constraints of the ecosystem (natural or cultural) and within your organization's policy, but that still leaves lots of room to accommodate the public's interests.

RETRAINING

Sixty-eight percent of college graduates say they know how to use a computer; only 16% of those who didn't finish high school are computer literate. Sixty-seven percent of those with incomes above $ 35,000 can operate computers; 23% of those making less than $ 7500 can not. How many of you feel computer literate? If people are to remain efficient and productive, retraining will be crucial. It is highly likely that you or your staff will have to be retrained to keep up with the latest technology; to remain competent in your profession. On the other hand, customers using the parks may become increasingly split between those that are computer and technologically inclined and those that are not. How do you plan to meet the needs of these two customer segments?

COMPUTER GRAPHICS

Graphics are persuasive and speed the decision making process. They shorten meetings and encourage consensus. Groups using graphics reach consensus almost 80% of the time. Star Wars, Batman, Dick Tracy and Roger Rabbit are daily reminders of the power of graphic images. Computer aided design allows not only two but also three dimensional presentations for management and the public.

The potential for computerized and supergraphic land management decision making and public exhibit games is unlimited. Text may be replaced by icons, pop-up windows and pictures of file cabinets. The media disk will replace printed catalogs and advertisements. People at home will be able to access your sales publications library and reference library.

You will be able to keep personal knowledge vignettes of important customers or customer groups in your own data base. Information will be available world wide. When was the last time you reviewed your existing and long term publications program? When was the last time you reviewed your audio-visual program?

ENVIRONMENTAL ISSUES

As environmental issues become more obvious, people and organizations are responding to these concerns. Resolution of environmental issues has become big business, for example resolution of wetlands and endangered species issues in most coastal areas particularly Southern California and resolution of solid waste management issues.

These problems are not going away and have instead become economically viable business operations. People visiting your park may be directly involved at home with similar environmental issues. Are you using your interpretive center as an example of how a home-size or small-business size operation can deal with environmental issues? What are you doing to help people understand how ecosystem work, what are basic laws of ecology and how they individually relate to these issues?

A 21ST CENTURY PROGRAM

So, how do you develop a 21st century interpretive program? Following are several steps that should help you on your way.

KNOW YOUR CUSTOMER Marketing is critical. Not in the sense of selling a product to the public, but rather in a much broader sense of knowing what people who visit your park (and perhaps those who do not) want and providing that experience within ecosystem constraints and within your policy. Marketing is everyone's business, not just your "Office of Information". It is a philosophy of treating the public who come to your area as guests. If you believe marketing is selling the public on the way you do business or getting them to "buy" your product, perhaps you should consider retraining.

BUSINESS MANAGEMENT Because of our rapidly changing society, in most cases it will not be possible for you to "catch-up" with advances and technology unless you have been continually retraining yourself and your staff. It will be necessary to "leap-over" existing technology to get ahead of the curve. That requires vision. You must know your customer and your resources (natural, cultural and human).

You must set your vision for the 21st century and then "lift" your organization over existing obstacles to move ahead. Easy? No. Impossible? No. It requires effort, persistence, courage and a good management plan. Create flexible, long-term strategies. Point the direction, but not necessarily the precise route. Get help. Be innovative.

TRAINING. Develop a training (or retraining) agenda based on your business plan. Market it to management. Follow it. Persist. Become computer literate and graphics sophisticated.

DO SOMETHING. Do something different. Don't be afraid to fail. If it doesn't work, fix it. Think of what the customer wants.

MONITOR YOUR PROGRAM: What is the program doing? Is it satisfying the customer? Is it satisfying management (another customer)? What corrections do you need to make. Do you need more training? Is the vision correct?

RECONSIDER RETIREMENT. In general, the population is getting older on average. Older people have special needs, but they also have special talents. They are working longer either in their jobs or in volunteer jobs. Consider their needs and their talents.

REMEMBER: YOU'RE ONLY AS GOOD AS YOUR LAST GOOD IDEA!

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CONNECTING: A RADICAL APPROACH FOR TRAINING INTERPRETERS

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ABSTRACT: Based on their recently-published book, *Connecting: A Handbook for Interpreters*, the authors suggest a new approach to training interpreters. Beginning with a fresh look at why we have interpretive sites and why people visit them, *Connecting* describes a training program designed to help interpreters build real connections between visitors and the interpretive resources they visit. The key is making the resource meaningful in the real world of the visitor. The focus of the Connecting Training Program is on your creativity, and your unique connection with the resource and with the visitors.
KEYWORDS: connecting, training, culture, interpretative programs

INTRODUCTION

Developing your skills as an interpreter usually follows a two-step format:

- Step 1—Think up some new technique.
- Step 2—Try it out in a program.

Occasionally, interpreters attend training, which usually follows a similar two-step format:

- Step 1—Hear about a bunch of new techniques.
- Step 2—Try some out in a program.

Interpretation begins and ends with the visitor, not with outlines, not with agency objectives, and not with techniques. If you don't understand your role as a communication link between the resource and the visitor, all the techniques in the world aren't going to help you.

Now there is a new model for interpretive skill development and training. Based on their new book, *Connecting: A Handbook for Interpreters*, Tom Ryan and Nancy Hadlock-Ferrell have developed a radical training system that will open up a new horizon of approaches to interpretation for new and experienced interpreters alike.

Connecting is not about themes, goals, and objectives. *Connecting* is about a special opportunity you have to build a bridge between a resource and the people who visit that resource. Following the format of *Connecting: A Handbook for Interpreters*, the training system begins with a fresh look at some familiar concepts. A few examples:

THE RESOURCE. Interpreters work in holy places. Whether they're museums, parks, monuments, or any other interpretive sites, the resources we interpret have been set aside by our culture because they contain important symbols of our cultural heritage and identity. A visit to any of these resources is a spiritual pilgrimage to our enshrined cultural values.

CULTURAL VALUES. The lure of the resource is more than the symbolic cultural identity it holds. The availability and use of recreational leisure time is also an important cultural value in our society. Interpretation is the bridge between the spiritual cultural value of the resource an the visitors' desire to do something fun.

INTERPRETIVE PROGRAMS

When people are in a group they interact. A group of visitors build a feeling of togetherness, and take on an identity of their own as a group. Visitors joining together at a resource also build a collective cultural awareness from participating in a cultural ritual together. To capture the group spirit and cultural awareness our culture has developed the tradition we call the interpretive program.

Beyond just exploring these concepts, the premise of the Connecting Training Program is that you, the interpreter, have a unique opportunity to find something within each visitor's value and belief system that resonates with and matches the values represented by the resource. This is the connection that we call interpretation.

CONNECTING: A HANDBOOK FOR INTERPRETERS

Drawing on Tom Ryan's expertise as a college communication instructor, and Nancy Hadlock-Ferrell's many years as an interpreter and trainer, *Connecting: A Handbook for Interpreters* contains explanations and descriptions of each step in the process of creating connections and building effective interpretive programs.

More than explaining what each part of the process is, and how it fits together, the Connecting Training Program focuses on a series of skill development exercises that you can follow to begin the process of creating connections.

This is not just another grab-bag of interpretive techniques. The Connecting Training Program provides you with not only the skill, but also the inspiration to build your own bottomless grab-bag of techniques, activities, and excitement. Most important, you leave the Connecting Training Program knowing how to use the techniques effectively, knowing they will work, because you will have tried them out, and perfected them under professional guidance and with the benefit of video recordings of your practice sessions.

Most of all, with the Connecting Training Program you capture the joy of developing your own exciting and innovative interpretive programs, instead of copying bits and pieces from other people's inspiration. You make the connection to your own interpretive excellence.

DAWN OF A NEW DECADE: WALKING THE TALK OF ENVIRONMENTAL EDUCATION

Ron Osterbauer, Associate Director
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ABSTRACT: The heightened environmental consciousness of the 90's is the dawn of a new decade, and as interpreters, we need to begin talking environmental education. New approaches to program format and marketing need to be implemented if we are to take advantage of the situation
KEYWORDS: environmental education, programs, interpretation, revenue

INTRODUCTION

Our marketing process as educational organizations has been lax at best. In most situations, we put out materials to schools, sit back and wait for the phone to ring to schedule a group. This approach has worked, which is reflected in the number of organizations. But is it truly effective, and is this approach reaching people with our message?

In the course of my career I have had the opportunity to build two private non-profit Nature Centers using program as the product. Most recently in 1981, I started with the River Bend Nature Center which was only two years old. The budget at the time was $35,000 and only $2,400 had been raised towards it, mostly from 160 members.

A start-up foundation grant provided the balance of operational income, but at this rate only 18 months of revenue remained to operate. It was a sink or swim situation and I knew that we needed a project. That product became program, an active program, not just on paper but working in schools. During my seven year tenure at the Thomas Irvine Dodge Nature Center, I helped author a 21-unit program incorporated into the science curriculum.

GOALS

My goals at the beginning were simple. I wanted to use program to heighten environmental awareness and insure our financial support. Schools were the first step in the process. By getting the students involved three times a year, they would get their parents excited, which would provide the financial support.

The marketing concept used with schools made it simple and convenient to encourage participation. I wanted to teach kids they belong to nature which provided them with a sense of interdependence in their life. This program became the main building block of the Nature Center.

CURRICULUM

The curriculum let every student in elementary grade participate in three units per year. These units were coordinated to the science curriculum so they learned about nature. Once the program was written and introduced, it was marketed. The marketing plan was to encourage participation by making it easy. Realizing that teachers are busy with many daily routines, a system was devised to make it easy. That system was to take every class and pre-schedule a time slot at the beginning of the year.

TEACHER IN-SERVICE

Each fall a teacher in-service was held per grade level. All a teacher had to do was confirm the dates, prepare the students, and bring them to the school door where our services started. It resulted in 100% participation by two school districts. Once the service level was established and the effectiveness of the program realized, I was able to establish contract agreements with the schools. These two contracts generated $40,000 of program revenue.

Programming for the 90's needs to take on a fresh look and we need to walk the talk. By analyzing our goals and objectives, we can spread the word of outdoor education. The market is untapped and there is the financial potential to benefit each of our own organizations if we dare to be different

INTERPRETATIVE TECHNIQUES

Alexandra Weiss

Interpretation—assisting the visitor to touch the earth, to feel something the interpreter feels. These words embody the influence all interpreters wish to have on their park visitors.

It is the trained interpreter's responsibility to provoke the visitor into thinking, examining and probing their surroundings. As Tilden states *"interpretation is revelation based on information"* and it is the interpreter who initiates the process. In addition to being knowledgeable about the park's resources, the interpreter must also be an effective communicator, capable of accurately and effectively relating the program theme. Successful interpretation is presented in a warm, friendly and sensitive manner.

Interpretation involves a tradition which has evolved over several decades. Through the years interpreters have expanded upon Tilden's principles to meet with the changing times. Those who ply the craft are always searching for ways to develop programs with innovation based on tradition.

Presentation techniques assist the interpreter in relaying a specific message to the audience. As we move into the nineties, interpreters continue to seek new ways to communicate their themes to the visitor. The techniques papers presented at the 1990 National Interpreters Workshop demonstrate both a respect for the past and a challenge for the future.

To meet the challenge of the future, storytelling to video exemplifies this blending of the old and new. However, it is very important that the interpreter remember the abilities to write and speak in a clear and concise manner are mandatory to employing any technique. The lure of high tech should not lull one into thinking that good communication techniques are no longer required. For if we have high tech, we must also have high touch or the visitor will not be touched.

INTERPRETING DISASTERS AND PHENOMENAL NATURAL EVENTS

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ABSTRACT: A phone call, a newsflash darting across the TV, an emergency signal on the radio announcing that a major incident has taken place...one which will possibly change the world. How does an agency take charge with regard to INTERPRETING the phenomenon to the world? Hopefully, immediately and with professionalism. However, there are many pitfalls which may present themselves. Resources must be available including background information on an area or subject. then one must have the agency's support to supply the time, money, personnel and attention the employees need to interpret the event to the public.
KEYWORDS: interpretation, volcano, information, oil spill, environment

THE PRINCE WILLIAM SOUND

Good Friday, March 24, 1989, twenty-five years after the great Alaska Earthquake another disaster struck! Eleven million gallons of crude oil spilled into Prince William Sound, some of which escaped onto the Chugach National Forest. The Exxon Valdez had run aground on Bligh Reef.

Personnel were immediately dispatched. John Knorr, Ranger for the Glacier District, was told to report to Valdez immediately. He would head up an Incident Command System similar to that of a system used for responding to wildfires. A new office was established in Valdez and people were called to communications-computers, fax machines and phones were installed to support coordination of the response to what would be a continually changing situation.The press from all over the world came to the small town of Valdez to get their story.

Even today, oil spill clean up, research and monitoring is still in full force and remain in the news. Who knows when, or if, scientists will ever know the full impacts the spill had on the Prince William Sound ecosystem?

THE CHUGACH NATIONAL FOREST

The Chugach National Forest is the northern most forest and the second largest in the National Forest system with almost 6 million acres. Some of the most pristine areas in the world, of which Prince William Sound is one, are within its boundaries. The sound's 3000 miles of shoreline have had many residents and visitors throughout time from the land's indigenous people, the Chugach Eskimos, to the Russians who were in pursuit of sea otter pelts, to the thousands of visitors from all 50 states and 60 different countries which have come to admire and enjoy the rich natural resources which abound throughout the sound.

Wildlife species are numerous in this area and include populations of brown and black bears, bald eagles, all 5 species of salmon and Sitka blacktail deer. Cliffs of ice towering 250 feet above the water calve into the sea creating translucent icebergs and lush green Sitka-spruce forest line the shores like a border surrounding a beautiful piece of art.

INTERPRETIVE RESPONSE

What were your reactions when you heard about the spill? Many Alaskans and others were and still are very irate, sad and scared. Most people have very strong feelings about this event including the Interpreters charged with the challenge; How does one interpret an oil spill?

Due to the remote location, very few visitors actually ever viewed the spill. special tours comprised of press and VIPs landed on the more heavily oiled islands. But those visitors to the Chugach travelling the State Ferry system, with their Forest Service Interpreter on board, or those travelling on cruise ships, would most likely never see an oiled otter, a dead eagle or a black beach. Even so, people were curious and wanted to learn about the spill.

The Forest Service, in addition to sharing the information on the spill and the impacts wanted to reassure individuals that there were still areas left untouched and many places where people could recreate. These areas included some cabins within the sound where they could stay and never see any signs of the event. This became the focus of the interpretive/information effort for 1989.

FOREST INTERPRETERS TRAVELLED TO VALDEZ

Forest interpreters travelled to Valdez and were briefed on the mission of the Forest Service. Its charge was to work closely with other agencies to establish communication throughout remote areas of the sound and contribute in any way possible to expedite the clean-up. Later on in the summer, many interpreters gained first hand experience as monitors of clean-up crews. Their job was to insure no further resource damage would occur as a result of the clean-up efforts within the sound.

Forest Service media addressing the oil spill included: A brochure which also talks to the unspoiled areas of the sound; a book called Black Tides (an account of the first 14 days) published by the cooperative association; and exhibits which were provided for the Begich, Boggs Visitor Center in Portage Valley (the most visited site in Alaska); the temporary office at Valdez and for an "all public lands information center" in Anchorage.

An award winning eighteen minute video was produced for internal and external audiences as well as a fact sheet for forest interpreters and cruise ship personnel. However, the most effective interpretation occurred on the ferries and within the visitor center with one to one interaction using the map and photos of the exhibit as a jumping off point.

What is there yet to be interpreted? Some questions raised at a public symposium on the Restoration Following the Exxon Valdez Oil Spill include; What will the total ecological and societal impact from the spill be? What do we know about the ecological systems that will be impacted and what will be the ramifications of the oil spill on a society so dependent upon fossil fuel energy? Interpretation of the Prince William Sound oil spill has just begun.

THE ERUPTION OF MT. ST. HELENS

During the 1970's, 9,677 foot Mount St. Helens stood quietly, symmetrically and snow covered above the surrounding evergreen forests of southwest Washington. Visitors, mostly from the Northwest, camped, hiked, and enjoyed this Cascade shangri-la. A small visitor center at Spirit Lake offered interpretive displays and a large amphitheater provided naturalists an excellent location from which to interpret for visitors the beautiful landscape of Mount St. Helens. But in late March of 1980, things changed.

INTERPRETIVE RESPONSE

Small but persistent eruptions of the volcano forced a closure of the Mount St. Helens-Spirit Lake area. As geologists monitored the events and media reported them, interpreters set up mobile interpretive centers at distant viewpoints to serve visitors pressing the restricted zone boundary to ***"volcano watch"***.

Small eruptions amazed onlookers through the middle of May as the volcano became fractured, grey with ash and reshaped with a giant bulge pushing outward on its north face. Then, on the morning of May 18, a 5.1 magnitude earthquake and a massive rock avalanche from its north flank triggered a powerful lateral eruption which removed the top 1,300 feet of the mountain, toppled trees in an area covering nearly 250 square miles, created dozens of new ponds and lakes in a landscape which now appeared lifeless, and left a 2,000-foot-deep crater in the top of the mountain.

The eruption claimed the lives of 57 people and changed the lives of thousands of others as homes and personal property were washed away by mudflows or covered with gritty ash.

The eruption resulted in the closure of all the lands surrounding Mount St. Helens to public entry. Yet visitors came in increasing numbers seeking viewpoints and information on the volcano. Accepting the challenge, interpretive planners, within a six week period, designed, constructed and opened two modular visitor centers for Mount St. Helens at safe distances from the mountain.

Free use telescopes brought the Mountain "closer" while displays, videos and interpreters led programs interpreting the volcanic story. (In time, one center closed, while the other was expanded.) Budgets were tight, so updated displays were designed and built by Forest Service staff.

In the ten years since that major eruption, Mount St. Helens has continued to undergo smaller eruptions, and life has reappeared across the landscape. Researchers, news reporters and curious visitors from around the world have come to observe, and the Forest Service has continued to provide and expand interpretive opportunities.

MOUNT ST. HELENS NATIONAL VOLCANIC MONUMENT

In 1982 the Mount St. Helens National Volcanic Monument was established by Congress. Volcanic activity decreased enough to allow visitors to approach more closely. Interpretive signs were designed and placed at selected viewpoints. Maps, literature and a film were produced.

Through the '80's, roads were improved, trails were built, information stations were established at major entry points, a series of popular interpretive programs were presented throughout the Monument and an environmental education program was started. In 1986, a permanent visitor center was opened to replace the six-year-old modular building.

Planning continues today for additional interpretive facilities, with a goal of providing a spectrum of high quality, barrier free interpretive opportunities for visitors.

CONCLUSION

Looking back, we've learned from our experiences. We would do some things differently if we had the chance to do it over. We sometimes built too small, or didn't talk enough between all the "players". In some cases, small but important details were overlooked. But overall, we've celebrated the successes of working together with various agencies to the benefit of everyone, especially the visitors. We've learned, too, that "government" doesn't have to move slowly. Our agencies can move as quickly as the people in charge want things to move.

HURRICANE HUGO

Hurricane Hugo blew over Puerto Rico September 18, 1989. The wind blew at about 140 miles per hour, downing many trees and stripping the leaves off the trees that remained standing. The forest was closed to visitors as trees and rain-caused landslides blocked the roads. The entire northeast end of the island was without power and electricity for weeks, and many homes were destroyed. After leaving the island, a weaker hurricane Hugo then blew into the mainland causing extensive damage to property and creating a major media event.

INTERPRETIVE RESPONSE

Twice I have had to interpret a "natural disaster" immediately after the event to people who where greatly affected. First at Mount St. Helens to a large room full of people, some crying, all sad about the loss of a very special place full of wonderful memories. Spirit Lake as they loved it was changed forever as measured in their lifetimes. What do you say when asked to interpret that loss?

The second time shortly after the road into the Caribbean National Forest was opened I drove up that road with several other older long-term employees who dearly loved the forest. As we stopped at a viewpoint and walked around they started to cry. They turned to me and asked me what is going to happen to the forest. As I looked into their eyes I wondered what they wanted me to say.

I felt on both occasions less like a naturalist and more like a priest trying to console the bereaved. What does one say to a family who has lost a loved one? As a priest, one is forced to fall back to basic religious beliefs. As a naturalist one must fall back to one's basic ecological beliefs.

One could give the listeners the straight facts of the situation. One could and should explain what happened. This is an important responsibility often carried out by a public affairs person. But what skills and perspectives and role does the interpreter fill that others are not able to do?

An interpreter has a responsibility to go beyond the transference of information, which has value but is better suited to newspapers and TV news bites. the newspaper reports on the disaster, the event, the cause, and the results, all the basic "5 W"s. But the interpreter needs to find relevance, significance and give people the tools to fit the event into their lives and their understanding of the world. The interpreter has the unique ability to often dialogue with the searching mind.

In the Caribbean there have been over 763 cyclones since 1886, with wind speeds between 40 and 250 miles/hour. If you plot them on a basin-wide map of the Caribbean, all the islands are obscured by black ink. The last hurricane that passed over the Luquillo Mountains was San Cipirano in 1932. (But who could be expected to remember that or understand its significance?)

Hurricanes are what make this forest what it is and will continue to do so regardless of human intervention or desires. The facts and their significance are often a little cold. In times of disaster the interpreter needs to communicate with compassion. Yes it is sad and inconvenient to lose what one desires. Rapid change is difficult to cope with. The psychological effects of disasters are real, long-lasting and must be addressed.

INTERPRETERS CAN HELP.

Interpreters can help. They can supply a new paradigm that includes the long run and the non-anthropocentric perspective. They can introduce discussions of fundamental questions and value judgements. A fundamental question is: What is a disaster? Who decides that an event is a disaster? What options do we have in adapting and coping with this change in human habitat? Is the event a disaster from the point of view of the natural system? What does the future hold in store?

Immediately after the hurricane, the USDA Forest Service in Puerto Rico responded with the destruction story. The real story has yet to be told. It is a story of hope and renewal, a story much more interesting than acres, board feet and cords.

SUMMARY

As interpreters, we've all been challenged in a big way to sort out and interpret the various responses to disasters and phenomenal events. Certainly the May 18, 1980 eruption of Mt. St. Helens, the March 24th oil spill in Prince William Sound and the September 18, 1989 Hurricane Hugo in the Carribean National Forest were a mixture of natural and man caused forces that shape our dynamic planet. We have recognized and welcomed the responsibility we have to interpret the sudden powerful expression within the universe.

AERIAL PHOTOS AND OTHER VIEWS FROM ABOVE: NEW WAYS TO TELL OLD STORIES

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ABSTRACT: Aerial photographs and other remote sensing images reveal a variety of patterns, both natural and cultural, on the earth's surface. Many of these patterns are not visible, or not easily recognizable, from the earth's surface. Because aerial images provide a different perspective of our world, they can be used to challenge interpretive program participants to analyze and interpret the visual information themselves. Participants can become the scientists, detectives, and archaeologists who decipher black and white, color, color enhanced and infrared images taken from airplanes and satellites to find the hidden stories.
KEYWORDS: aerial photography, remote sensing, interpretation, archaeology, LANDSAT

INTRODUCTION

"Experts stalking mystery in England. Theories for the crop circles range from earthworms to spaceships." Sounds like a caption from the cover of *National Inquirer* or *Star*. However, the headline and caption accompany an article and photo in a traditional metropolitan newspaper (Houston Post, June 25, 1990). The photo is a black and white aerial image of circular patterns cut into southern England wheat and corn fields. What could cause such mysterious circles?

Seen first by meteorologists in satellite images, the mystery circles had baffled engineers and other scientists, prompting high tech surveillance and analysis of the sites. Although the patterns in this instance turned out to be a hoax, the scenario illustrates two major premises of this paper:

1) that some patterns on the earth's surface may be most or only visible from some location above the earth's surface; and,

2) that sightings of mysterious and not readily explainable patterns can engender curiosity, excitement, and the urge to explore and figure out.

There are plenty of mysterious non-hoax patterns all over the earth's surface (many of which were seen first from the air) that can add mystery and challenge to your interpretive programs.

HARNESSING THE MYSTERY FOR INTERPRETIVE PROGRAMS

We are accustomed to viewing our world from a vantage point of three to six feet above the earth's surface. It is this perspective with which we are most familiar and comfortable. However, we cannot see all the patterns and intricacies of our world from there. In interpretation we often use strategies to change our perspective, to see things differently. A typical strategy involves moving in close to things—by following "micro trails" on hands and knees, peering through magnifying lenses at insect wings, or searching for amoebas through microscopes.

Sometimes we make big things small by making models of them, or by showing movies and videos (of tornadoes, volcanoes and other objects we infrequently see first hand). Another way of seeing our world differently is by peering down from the window of a small airplane or space vehicle. However, this would be prohibitively expensive for interpretive programs. Aerial photography can provide a less costly alternative. It can give us a new way to look at the world; it can help us find patterns on the earth.

Usually aerial photographs are used as a research tool to identify patterns and gather data which later become the information used in interpretive programs. Occasionally aerial photographs are displayed in interpretive exhibits to locate a specific geographic region, but they could be used much more effectively as interpretive tools. Why not take the aerial photographs out of the archives and research rooms and bring them into our interpretive displays and programs?

They can become integral components of both cultural/historical and natural history interpretation. In addition to providing non-traditional perspectives, aerial photographs can challenge people to analyze and interpret visual information themselves. Participants then can become the scientists, the detectives, the archaeologists.

REMOTE SENSING

In its broadest sense, remote sensing is any method used in the detection, identification, and analysis of objects or features from a location away from those objects and without direct contact. Each type has its own characteristics, capabilities and applications.

Of the sun's energy that impinges on the earth, some is absorbed and some reflected. The principle of remote sensing is dependent on the reflected energy. Reflected wavelengths compose part of the electromagnetic spectrum. Each object has its own characteristic reflectance pattern. This is called an object's electromagnetic signature or footprint. Wavelengths of the electromagnetic spectrum range from those shorter than those in the visible range (ultraviolet, X-rays, through the visible spectrum (0.4-0.7 microns), and those longer than 0.7 microns (infrared, microwaves, radio waves) (Lillesand and Kiefer 1979). It is the reflected wavelengths (primarily visible and infrared) that are most used in remote sensing.

AERIAL PHOTOGRAPHY

Aerial photography is just one type of remote sensing. In fact, all types of photography are considered as "remote" sensing procedures. Photos can be taken from close range, from high and low altitudes aerially, from oblique or vertical angles, with either color or black and white film, and with either normal (sensitive to visible spectrum wavelengths) or infrared film.

Scanning devices mounted on satellites (LANDSAT) produce special images composed of pixels (small units which record the predominant reflectance of an area). Usually the final images (false color composites or computer enhanced images) are produced by combining, through use of a computer procedure called multi-spectral scanning, results of images taken with films sensitive to different wavelengths of the electromagnetic spectrum.

Types of remote sensing other than those directly dependent on the sun's energy include radar, heat, and sonar sensing (used for military operations, for water studies, and by aircraft pilots), seismographs (used by geologists and geophysicists to record sound wave patterns reflected from different strata below the earth's surface to find oil or minerals), and magnetometers (used to locate areas of earlier earth disturbances by measuring slight variations in the earth's magnetic field) (Lillesand and Kiefer 1979).

The visual images produced from remote sensing data can be enhanced to aid in data interpretation. Techniques include: 1) false color photo images, 2) color composites, 3) color composites with contrast stretch, and 4) computer classified and computer enhanced color composites (Lillesand and Keifer 1979).

USES OF REMOTE SENSING IMAGES

Remote sensing has been used for a variety of purposes by archaeologists, explorers, the military, geologists, foresters, geographers, and agricultural specialists. Photoarchaeology was one of the first highly developed uses. Patterns in aerial photos of the Sinai desert taken in 1914 and 1921 revealed several abandoned cities (buildings, roadways, and vineyards) beneath the desert surface (Vogt 1975). Also identified was the entire roadway system leading to Stonehenge.

PHOTOARCHAEOLOGY

Photoarchaeology also was used to discover many Roman, Celtic and henge-type sites (Wilson 1975). Charles Lindbergh, while making military photographic runs over Arizona and New Mexico, accidentally discovered numerous Pueblo Indian sites (Vogt 1975).

Today, more systematic overflights of areas are made to photograph potential archaeological sites in search of telltale patterns for use in interpretation.

Patterns of early civilizations seem to emerge best in dry, bare soil, but appear also in lush vegetative cover where early land disturbances cause increased (positive crop indication) or decreased (negative crop indication) plant growth (Avery 1977). Use of infrared film aids in identifying patterns in vegetation because maximum reflectance from vegetation occurs in the infrared range.

Cultural finds resulting from remote sensing around the world include old settlements and agricultural field patterns in England (Barrett and Curtis 1976), a Viking fortress in South Dakota (Strandberg 1967), still unexplained linear and geometric patterns in Peru, old canals and waterways of the "lost" city of Spina in Italy (Lillesand and Kiefer 1979), and extensive agricultural and travel systems of a highly developed civilization centered in Chaco Canyon, New Mexico (Olesky 1981).

In addition to finding and identifying cultural sites, various remote sensing techniques are used to inventory forests, to develop range and wildlife management plans based on distribution and type of forest cover, to study drainage patterns and determine watersheds, to study flood control programs and select future dam/reservoir sites, to conduct traffic studies and plan locations for highways and railroads, to analyze natural resources and geomorphological features (such as old river channels and oxbow lakes, alluvial fans and glacial movement, dune system and barrier island movements, old volcanic flow and meteorite pits), and to study phenomena such as floods, storm waves, volcanic activity, and dust storms.

INTERPRETIVE PROGRAM PARTICIPANTS

Why leave the adventure of exploration and sleuthing to professional archaeologists, foresters and geologists? Interpreters of cultural and natural resources can turn their centers into exploratoriums and their program participants into scientists. By creating desired scenarios, teaching participants a bit about how to read aerial photos, then presenting them visual images of remotely sensed data, interpreters can challenge participants (individually or in groups) to analyze, discover, explore, and develop creative solutions to modern problems.

Topics can range from historical discovery or problem solving to planning for the future. Stereoscopic images can add depth and excitement. Grease pencils or water soluble markers can be used to trace patterns onto clear acetate sheets.

Different types of images of the same area can be compared. Time series images can help track temporal changes in physical features. In all cases, program participants become integrally involved in the process; they are not simply "told facts." Examples of program topics include:

•1. identifying former land uses (old structures, burial grounds, boundaries);

•2. monitoring the health of and changes in vegetation;

•3. observing topographic changes such as land subsidence and subsequent flooding, or shifting barrier islands;

•4. tracking weather patterns;

•5. identifying and monitoring pollutants and their effects;

•6. locating urban areas via nighttime aerial photographs;

•7. identifying geological features and processes.

Possibilities and scenarios are endless. Take the aerial photographs out of the archives and research rooms. Make them integral components of both cultural and natural history interpretation. Challenge your program participants to become the scientists, the detectives, the archaeologists.

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CARPET FOAM: FROM UNDER THE RUG TO CENTER STAGE INTERPRETATION

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ABSTRACT: Carpet foam is used at the Minnesota Zoo to build everything from masks to moose to 80-foot monsters, providing Skytrail naturalists with unique opportunities for interpretation. Originally a theater medium, carpet foam is accessible, affordable, easy—and fun—to use. The resulting props are bright and bold, and wear, transport, and store easily. Specific props come from a 10-step process examining the need for a conservation message and how that message can best be presented.
KEYWORDS: carpet foam, interpretation, programming, props, program development, evaluation

INTRODUCTION

Carpet foam? Yes, that spongy layer we find under the carpet can be transformed into masks, props, and costumes. As a talking tree for Arbor Day or a woodchuck for Ground Hog Day, carpet foam props help Skytrail naturalists deliver an interpretive message that supports the Zoo's mission statement: To strengthen the bond between people and the living earth.

The Minnesota Zoo's Skytrail is a climate-controlled monorail which circles the Northern Trail, giving riders a unique perspective on animals from the Northern Hemisphere. Just as today's zoos are more than caged animals, Skytrail is more than just a people mover. Zoo visitors receive a 25-minute narration that supports the mission through a careful mix of conservation, education, and fun.

This happens through a public address system, sometimes 25 feet above the forest floor, or in the station area where 85 to 90 people are waiting to board the next train. In order for props to be effective, they have to be big, and they have to be bold.

CARPET FOAM! CARPET FOAM!

Carpet foam, a theater medium, can be both big and bold. It was found to be a "user friendly" material, and its use in Skytrail interpretative work was expanded.

While carpet foam can be purchased at home building centers, it is preferable that donations of used foam be solicited from large carpet distributors and installers. It comes in a variety of thicknesses, but the 3/8" twilight foam is the most versatile. For props where extra body is needed, a thicker foam can be used.

The carpet foam is strong enough to hold its shape without underlying support, and yet it can be cut with household scissors. Cut edges, or any two foam surfaces to be joined, are coated with contact cement in a well-ventilated area. In a few minutes, the cement dries, and the edges/surfaces can be joined in a permanent bond. Enlarging or reducing a part of a prop is as simple as "cutting and pasting."

Several layers of cotton gauze can be cemented over a cut out viewing window. Once painted, it is nearly invisible. If velcro closures are needed, purchase the type labeled "glue on." The carpet foam props will accept spray, latex, or watercolor paints without further preparation.

The finished props are lightweight, flexible, and can be worn comfortably. Since they are used over and over again, it is important that they are able to be folded flat and stored easily.

Carpet foam can be substituted for fabric in traditional sewing patterns. It can replace paper and paper mache called for in mask-making books. You can exchange patterns with other organizations working creatively with carpet foam. Sometimes the best props come from a scissor-wielding naturalist with an idea.

PROGRAM DEVELOPMENT

Where do the ideas come from? How can you work carpet foam props into your presentations? What seems to happen quite extemporaneously—"Hey, let's make a bat!"—can be analyzed to show that the development of props is part of program development.

The 10-step process for prop and program development insures that presentations are consistent with the mission of the Minnesota Zoo:

- 1. Identify the concern, issue, or problem
- 2. Identify a holiday or special situation (event) for which a presentation is needed or applicable.
- 3. Decide the theme or concept of the presentation.
- 4. Set goals for the presentation.
  - —Do you want to inform?
  - —Do you want to entertain?
  - —What is the reaction/action you want to achieve from the audience?
- 5. Narrow the topic to a manageable presentation size.
- 6. Identify your audience.
  - —External characteristics: age, sex, education, cultural or ethnic background, and economic level.
- 7. Consider how the site or location influences the presentation.
- 8. Decide on the prop or props needed.
  - —Develop supply list, production schedule, and assign tasks.
- 9. Develop script and practice schedule. Identify presenters/interpreters.
- 10. Schedule a dress rehearsal to double check timing and details.

EFFECTIVE PRESENTATIONS

On Ground Hog Day, a larger than life ground hog at the pond's edge gives naturalists an opportunity to talk about the significance of the shadow, as well as winter adaptations like hibernation.

Giant dandelions are part of an April Fool's Day spoof in the backwoods. Giant carpenter ants and ostrich-sized chickadees are part of the fun which never loses sight of the need to "strengthen the bond between people and the living earth."

On **Arbor Day,** the many scheduled school groups are greeted in the station by—a talking tree! The tree talks to the students about Arbor Day and the importance of trees.

When Skytrail naturalists teach the **"Monsters, Myths and Make-Believe"** classes in October, they wear carpet foam bat costumes, complete with wings, claws, and pointed tragus. They are ready to dispel any misconceptions that students may have about this common Minnesota mammal.

Then there is **Halloween**. In October, the whole Zoo transforms into a spooktacular place, and Skytrail (and carpet foam) has a leading role. Among the unforgettable props was an 80-foot dragon and an 8-foot rock that could roll its eyes and talk.

Whether it's Ground Hog Day or Halloween, or the days in between and beyond, Skytrail naturalists, as part of the Education Department in the Conservation Division, are promoting the mission statement of the Minnesota Zoo. The monorail is powered with 480 volts of electricity—but it is really the lively, creative approach to interpretation and carpet foam props that makes it go.

EVALUATION

Special props and narrations are critiqued and revised upon completion of a presentation. Staff persons who were directly involved in the activity have an evaluation meeting. The discussion focuses on what worked, what didn't, and changes that might be made.

Positive visitor comments to the Skytrail staff, guest comment cards, letters received, and increased attendance are an indication of the effectiveness of special props and narrations.

CONCLUSION

Carpet foam has proven to be an effective medium for creative interpretation at the Minnesota Zoo. It is a wonderfully versatile medium with endless possibilities. We would love to hear what you create!

CARPET FOAM CREATURES

Creative costumes like the **"talking tree"** are used in educational presentations on Arbor Day, Earth Day, and Conservation Days. The **bull moose** gives Skytrail naturalists an opportunity to talk about adaptations and animal management.

"Edgar," the vulture, is a regular in the Halloween decorations. He doesn't do much—but always makes our visitors smile. Costumed creatures depict animal myths and fears of the **"Ghost Train"** Halloween performance.

A SAMPLING OF CARPET FOAM PROPS AND COSTUMES

Creative costumes like the "talking tree" are used in educational presentations on Arbor Day, Earth Day, and Conservation Days.

This bull moose gives Skytrail naturalists an opportunity to talk about adaptations and animal management.

"Edgar," the vulture, is a regular in the Halloween decorations. He doesn't do much--but always makes our visitors smile.

Costumed creatures depict animal myths and fears as part of the "Ghost Train" Halloween performance.

HOW REVIVALIST STORYTELLERS CAN CONTRIBUTE TO BETTER UNDERSTANDING OF CULTURAL DIVERSITIES

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ABSTRACT: Modern-day storytellers can perform in an ancient role in society: telling stories to entertain, teach, transmit and preserve culture, interpret value systems, heal, and communicate ideas. Folktales used by storytellers should be carefully researched so that the cultures behind them are understood. Storytellers (and listeners) can become part of an ever-growing network including local, regional, state and national organizations. We all need to hear and tell stories from world cultures to share in the universality of human emotions that unfold in each tale.
KEYWORDS: storytelling, folktales, world cultures, cultural diversity, storytelling in education

REVIVALIST STORYTELLERS

The title of our presentation begins with the word "how," but as former journalists, we find it necessary to first fill in the answers to the five "w's." What is storytelling? When did it begin? Who were the storytellers? Why did they tell stories Where were the stories told?

We'll begin in the beginning—back to a time before recorded history when primitive and ancient peoples told stories for many reasons—around campfires, in caves, or near water holes. At first stories were perhaps told only for entertainment or to share the experiences of the day. Later they had more serious purposes: to hand down from one generation to the next values, ideas, standards of behavior, laws, ideals, and folk wisdom.

STORYTELLING

Stories were told as part of ceremonies and rituals, to pass on the history of the tribe, and to teach both children and adults certain moral precepts and beliefs. The ancient peoples also told stories to voice their speculations about their own beginnings and the beginnings of everything on earth, in the sea, and in the sky.

To discuss what storytelling is and define it according to each and every world culture or subculture is an impossible task for a 50-minute presentation. However, we will try to give you snippets from a few major cultures and tell you a few stories to show the extraordinary diversity of the stories and yet their common universality as they minister to the same basic social and individual human needs.

AFRICA

Storytelling in Africa was usually done when the day's work was done and that the style was ebullient and with much social interaction between audience and teller. In the Gold coast, Spider stories were dominant. Anansi, the Spider Man, was a trickster and was a legendary hero from pre-historical times. There were stories about warriors, kings, hunters, and in Southern Nigeria, tales about the Ju-Jus, ghost or fiends to whom sacrifices were offered.

God was recognized as creator, but he was believed so far away that sacrifices could not be made to him. Children of certain areas of Ghana were not considered educated unless they had heard the "Glivo," a collection of animal stories intended to teach courage, kindness, obedience.

ASIA

Chinese folk tales are a medley—myths about creation, about the silkworm, the first firecracker or the origin of rice. There were fairy tales with giants, demons, emperors, warriors, mandarins, beautiful women, and peasants. A social theme was often a the heart of Chinese tales. Outdoor performances were held in the marketplace or temple courtyards. In the middle of a story or just before the climax, the storyteller stopped and collected contributions.

India must be acknowledged as the home of the older folktales of the world. *The*

Panchatantra, or *Five Books*, were believed to have been collected about 200 B.C. though the stories themselves are of unknown antiquity. *The Jataka Tales* relate to the animal adventures of the Buddha. *The Ramayana* and *The Mahabharata* are the great epic tales of India. They may be narrated, performed as one-man shadow puppet shows or with a full cast of puppets. Indian storytellers may be emotionally charged narrators, singers, actors or a combination of all three.

EUROPE

In the folklore of Central Europe, there is a strong sense of the supernatural and deep religious faith which combine old pagan beliefs with those of Christian origins. In Germany, we find tales of magic, animal tales, romantic fairy tales, and humorous stories. Russian folktales could have originated in no other country. You can see, feel and smell the damp, black earth, the dense forests, the deep snow, the wooden peasant huts. There are no little people or giants in their stories but a well-known supernatural character, the Witch Baba Yaga.

In Scandinavia we can find stories of trolls, gnomes, of old Viking heroes, and the Norse Gods. From Ireland, Scotland, England, Cornwall and Wales come the tales of goblins, witches, bogeys, kelpies, brownies, leprechauns, piskeys, mermen, and mermaids. Both Celtic and Anglo-Saxon cultural influences are apparent. In Ireland there were ancient cycles of storytelling—mythological, legendary, and romantic—many of them with tragic endings.

THE AMERICAS

In South and Central America and in the islands of the West Indies, folktales came from two sources—the ancient civilizations of the Maya, Aztec, Inca and other Native American tribes; or from a second migratory source—Europe and Africa whose explorers, traders, slaves and conquerors brought stories which were then reshaped in the New World.

UNITED STATES

The folklore collections in the United States are extensive and varied, and include Native American myths, Afro-American folklores, sea chanteys, legendary stories of American folk heroes, and also many folktales which traveled with immigrants from other countries and were then adapted to the Appalachian Mountain region, the Ozarks of Missouri and Arkansas, the Louisiana Bayous, the New England area or other geographic locations.

There are still storytellers today who learned to tell stories from their parents, grandparents, or other members of their families and community. But there are now thousands of other tellers, called revivalists or new-traditional storytellers who use many other sources: authentic folktales collected from around the world; world folktale anthologies or theme anthologies, and single volume folktales.

Storytellers now belong to networks: NAPPS, the National Association of the Preservation and Perpetuation of Storytelling, with headquarters in Jonesborough, Tennessee; the National Story League with chapters all around the country; then many state guilds, regional guilds, librarians' guilds, and local guilds. They may hold festivals, conduct workshops or sponsor courses for learning and improving skills, or simply to encourage story swap sessions.

STORYTELLING

If storytellers wish to do more than just entertain, they will conscientiously research the were, who, why, what, where and how behind each story and its origin. Teachers found that telling stories to students is a powerful way to engage their interest in certain areas of the curriculum— particularly in the study of language arts and social studies. The stories provide listeners with opportunities to form attitudes and positions about value in life. Through stories, students will certainly gain more understanding of history than through memorizing facts and figures and the study of graphs, charts or population compilations which never touch the real heart of the human experience.

Native Americans studied in schools are often introduced by certain stereo-typical components of those cultures—teepees, canoes, moccasins, baskets, etc. Their myths and legends reveal their central value system, their attitudes toward material possessions and property, their meaningful relationship and respect for their environment.

CONCLUSION

World culture should help students develop an awareness and appreciation for contributions of each ethnic group and foster respect for that value system. We would like to express the hope curriculum that development, education and program budgets and hiring will some day add storytelling along with music and art to help students develop emotionally and achieve understanding of our common humanity.

DEVELOPING EXHIBITS THAT COMMUNICATE

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ABSTRACT: More often than not exhibits fail at the job of communication. People pass them by with a glance, gaining little or no knowledge. Ineffective exhibits are usually the products of poor design. Most interpreters have played the role of exhibit designer at one time or another. Interpreters usually contribute to the design process by originating the information to be presented, but often they are responsible for other aspects of design because of budget constraints. This presentation will examine the basic elements of exhibit design and fabrication. Exhibit design is a process of conceptual and visual discovery. It is extremely complex because it utilizes virtually every kind of communicative technique. There is seldom one solution to an exhibit problem and more often than not the product is a result of guess work and trade offs. The information presented here will eliminate some of the guess work and provide a simple consistent approach to developing exhibits that communicate. The presentation will cover theme development, design considerations, label design, production materials, cost estimates, and sources of help. Slides will be used to illustrate the wide range of exhibit techniques and sophistication.
KEYWORDS: Concept outline, space plan, communication, design elements, readability, media options, fabrication materials.

INTRODUCTION

Probably a logical starting point is to try to define what an exhibit is. Simply put, it is a visual presentation of ideas with the intent of educating the viewer. It is an arrangement or grouping of objects and images coupled with interpretation. It differs from a display because displays are showings of objects without interpretation.

The next logical question to ask, is why use an exhibit to communicate with our audience as opposed to some other media? All communication media have their own strengths and weaknesses. An exhibit's main strength is that it uses combinations of media to transmit ideas rather than relying on one. Another primary strength of the media is that it often utilizes genuine objects. The main weakness of exhibits is that they generally are ineffective in communicating lengthy complicated messages.

Good exhibits have certain elements that are worth mentioning:

•1. Visibility
 a. adequate lighting
 b. no viewing obstructions
 c. convenient access

•2. Attention Getting
 a. colorful
 b. visual impact
 c. invite participation
 d. interesting subject
 e. simple

•3. Communication Value
 a. brief
 b. entertaining
 c. visual as well as verbal
 d. arouse curiosity by asking questions

GETTING STARTED

The secret to a good exhibition is common sense, creativity, and skill, intelligently combined. Money helps, but thoughtfully conceived, effective exhibits can be developed with very little money.

The first step required in starting an exhibition is to set the basic parameters of the project. This includes developing a preliminary statement of purpose for the project; estimating the space, scheduling and budget requirements;

and selecting the individuals or groups who will be responsible.

STATEMENT OF PURPOSE

This step often includes drawing up a set of questions that need to be answered. Integral to this process is an assessment of the audience's characteristics. The subject matter, pertinent data, documents, literature and history should be briefly examined to determine the overall subject and important sub-texts. A clear statement regarding the general objective, limits, and context should be written. The context is important to establish a frame of reference which ties all exhibit elements together.

ESTIMATING SPACE

This task is not always as simple as it sounds. Often the space has already been decided on, but sometimes it is a custom enclosure integrated into the exhibit system; a place where the site, structure, and exhibition becomes an inseparable single entity. The exhibit space is greatly affected by configuration, existing lighting, electrical, and mechanical. The goal is to determine available wall space and floor space noting obstructions that reduce effective space.

SCHEDULING

Time constraints can and often do determine the outcome of an exhibits effectiveness. Start with the setup date and work backwards establishing target dates for each task in the design process. If lead times are not adequate the setup date should be adjusted.

BUDGET

The administration usually determines the budget, however they often depend on the originator for recommendations. Exhibit estimates per square foot of exhibit space are notoriously inaccurate. This is because time, density, and sophistication largely determines the cost.

Permanent museum/visitor center exhibits can range from $1-$700 a square foot of floor space. The average contract designed and installed job will range from $50-$300 sq. ft. Remodeling, animation, audio visual, computers, custom mechanical or electronic devices, scale models, neon and similar high tech media will have a major impact on cost.

DESIGN

The following steps are essential to the design of an exhibit that communicates well.

RESEARCH. Acquisition and thorough study of all pertinent background data, documents, literature, artifacts, new techniques and devices.

CONCEPT OUTLINE. This is a written preliminary description of the subject matter of an exhibit based on the research information. During this step, themes and sub-themes or sub-texts are developed that establish a scenario or sequence of information to be presented. The designer must ask—Can the subject be expressed visually? Are supplementary materials available to illustrate the theme visually? How will the content be contextuallized to show relationships? Which facts are essential to the visitor's understanding of the themes?

SEQUENCE OF IMAGERY. This step proposes media to be used to communicate content groupings. Groupings are arranged sequentially using flow charts.

PRELIMINARY SPACE PLAN. This is a floor plan showing general space allocations and traffic flow for content/imagery groupings.

PRESENTATION AND CONSULTATION. The report on the research, concept outline, sequence of imagery and preliminary space plan is presented to primary decision makers. A refined budget and time estimates are included as well. Upon approval of the scheme the design team proceeds to the next step.

PRELIMINARY DESIGN. This step furnishes schematics of individual exhibits and a preliminary floor plan is developed to provide the beginning details on exhibit appearance and size.

MODELING. For large exhibitions, "white" models are done to refine the overall concept and individual units.

FINAL DESIGN. This step includes a detailed floor plan, elevations of individual exhibits, section drawings and construction drawings. For small jobs, section drawings and complete construction drawings may not be needed.

DOCUMENTATION. Preliminary specifications are written to interpret the drawings and detailed cost estimates are prepared.

DESIGN CONSIDERATIONS

ATTRACTION. In any exhibition the visitor is confronted with a variety of choices. Individual exhibits compete for attention. Probably the two most effective tools the designer can use to attract attention are large graphics or large dramatic objects and effective lighting.

SPACE. Unquestionably people take cues from space. Space can crowd and result in uneasiness. Negative space (white space) is used to eliminate the crowding perception and sub-divide subject matter.

VARIETY. Variety is necessary to maintain the visitor's interest. Visual monotony contributes to fatigue and overload. Different communication techniques and genuine objects should be utilized to minimize the "book in the wall" approach that leads to overload and confusion.

SCALE. Directly related to space is effective spatial arrangement. The designer should always try to ensure a fit between the artifact and the space that contains it. Small scale areas should be used for presenting small objects and large scale areas for large objects.

VISUAL FOCUS. Providing a visual focus is important to attract and maintain attention. Strong visual elements should be spaced so that the visitor is always making a new discovery. Research has shown that the visitor attention is highest near the entrance and lowest near the exit and that exhibits located along the shortest route from entrance to exit will receive the most attention.

AMENITIES. Noise, heat, crowding, poor maintenance, etc. can detract immensely from an exhibition. Consideration of the visitors' physical comfort is important to the success of an exhibition. The provision of rails or seats for resting, carpeting to reduce noise and alcoves for privacy, all encourage visitor comfort.

ORIENTATION. Once visitors enter an exhibit they should be oriented as to what is going to be communicated and where to go. Most exhibits are established with a central theme in mind. When the content and structure of the exhibition are not clear to a visitor it is much like removing pages from a book at random. Generally, titles and sub-titles are utilized to provide this structure. Sometimes floor plan maps and self guided materials can be used to orient visitors in large exhibitions.

CIRCULATION. Confusion arising from poorly thought out circulation can frustrate a visitor and result in poor communication. There is never an ideal solution or typical arrangement which can be applied to all situations. The main goal is to create sub-divisions of space which direct and integrate the visitors behavior with the communication goals.

CONTEXT. Good interpretation must be concise. The average museum visitor spends only 30 to 60 seconds viewing any one exhibit. The most common design mistake is to present topics without paying attention to context. Topics should be narrowed down to digestible portions and contextuallized to make them interesting and easy to remember.

SUPPORTIVE MATERIALS. Pictorial devices are important to attract attention and provide additional context. Dioramas, photographs, models, artifacts, maps, paintings and other supportive materials are essential to the success of an exhibit.

LABELS

SCRIPT WRITING. The storyline is communicated through titles, sub-headings and labels. Probably the most important rule in exhibit design is that labels should be brief and to the point. It is always tempting to slip in the extra detail in the belief that it is needed to communicate the message. Generally a large chunk of text, regardless of the subject matter, will discourage a visitor from reading before they ever start. The following principles should be used to guide the label writing process.

- Make sure the text reflects the vocabulary of the target audience. Generally, text written for the general public is aimed at the average 15 year old education level.
- Sentences should be short, about 10-15 words and never more than 22.
- Subordinate clauses should be limited to one or two.
- Use a full stop (period) rather than a coma when possible.
- Avoid passive tenses.
- Use short paragraphs (two or three sentences).
- Always explain unfamiliar terms and concepts as soon as they appear.
- Labels are needed more often when visitors move from right to left.
- Hyphening should be avoided.

READABILITY

Three factors determine good visibility and readability; illumination, size and contrast. The following typography and readability rules should be used to increase the effectiveness of labels.

- An absolute minimum of five foot candles should be used for illumination.
- The main introductory label should be designed to catch the eyes. It should be about 3 to 4 inches in height.
- General labels should be from 48-90 pts depending on the viewing distance.
- Specimen or artifact captions should be about 20-30 pts type.
- The use of capital letters is permissible for titles, but they significantly decrease reading speed and should not be used for longer labels.
- Contrast between letters and the background should be as strong as possible.
- The size and type of caption also relates to crowd flow. Use shorter messages and larger type where people pass quickly.

• 8. The length of the printed line in relation to type size affects readability and comprehension. The most desirable line length for size of type face is 1-1/2 picas or width for each pt. of height (usually not more than 65 letters).

PLACEMENT

- Main labels should be no more than 1 ft. above eye level.
- Secondary labels should be at or about one foot below eye level.
- No labels should be lower than 24" from the floor.
- Labels should be as close as possible to a right angle with the line of sight.
- Because many viewers wear bifocal glasses, label copy should generally be placed a little lower than the line of sight.

FABRICATION PANEL CONSTRUCTION

- . Size. Since most sheet material comes standard in 4'x 8' sizes most exhibits use the 4'x 8' size as a standard module for panel construction.
- Frames. To assemble a panel frame, cut two pieces of 1 x 4" pine eight ft. long and four crosspieces 3'-10 1/2" long. Good quality pine is needed to prevent warpage when the wood is fully dry.
- Surfaces.

a. Hard

(1) Plywood. Plywood comes in a variety of grades and Group numbers. Grades A to D refer to smoothness of surface and Group numbers refer to strength. A trade name "Duraply has a paper surface that can be easily painted". Another product popular with exhibit fabricators is Signal MDO (Medium Density Overlay).

(2) Hardboard such as Masonite is very popular because it is easily painted. The major drawback is its weight. It comes tempered and untempered. Tempered is treated to make it moisture resistant.

(3) PCV and Expanded PCV. Relatively new on the market, these materials are lightweight and durable. One trade name, Sentra, comes in a variety of colors.

b. Soft

(1) Upson Board. This material is made from plant fibers or wood pulp. Upson board paints well, but edges must be sanded.

(2) Homosote and Cellotex. Both of these materials have surfaces that can be used to "pin to". The most common use is to wrap in fabric and frame for a cheap display panel.

(3) Foam-core is the lightest material available and is excellent for temporary exhibitions. Gatorfoam is a popular trade name.

(4) Cardboard is still a favorite because of color availability.

c. Laminates. Plastic laminate was once the most used exhibit surface because of its durability. However, Signal MDO and other surfaces are becoming more popular.

d. Fabrics

(1). Vinyl
(2). Cork
(3). Cloth
(4). Carpet
(5). Wallpaper

e. Acrylic. Comes in a variety of colors and is available with UV protection.

f. Lexan. Useful for banners, comes in a variety of colors.

- Photo Mounting Materials

a. Aluminum
b. Masonite
c. Gatorfoam
d. Acrylic
e. Duratrans
f. Artboard
g. Metal photo

- Adhesives

a. Poly Vinyl Resins (Elmers Glue All, Dupont White Glue, Tite Bond White Glue).

Suitable for interior woodworking, excess can be cleaned off with damp sponge since it is water soluble.

b. Contact Cements (Devco Rubber, Craftsman, Contact Cement, Duralite Contact Cement). Used to bond laminates such as Formica to plywood.

c. Rubber cements (Scott Grip, Miracle Adhesive, Gripit). These non-structural adhesives can be used for bonding paper to paper, wood to concrete and rubber to rubber. It should not be used for photographs or artifacts.

d. Epoxy (Elmer Epoxy, Helor, Quick-set, Ruscoe Epoxy). Can be used to glue most materials, however, use should be limited to repairs which require strong bonds such as those on glass or china.

e. Plastic Cement (Duco, Liquid Solder, Weldit). These are used for general repair where a high resistance to moisture is needed. The pieces should be clamped when glued.

f. Latex Base (Devcon patch, Franklin Indoor-Outdoor Carpet Adhesive). These adhesives are used for gluing carpet and fabrics. They dry quickly and can be exposed to water.

g. Resorcinol and Formaldehyde. These are used to bond wood when exceptional strength is required.

ILLUMINATION

Lighting is a critical element in an exhibition. It is also probably the least understood. There are two main types of artificial illumination, fluorescent and incandescent.

Fluorescent light is economical, comes in cold and warm colors and does not cast shadows, however, it cannot be focused and it emits a considerable amount of ultra-violet radiation. Fluorescent lights can be covered with verilux U-V filter sleeves to eliminate much of the radiation.

Incandescent, or filament light, does not have a significant U-V emission, however, it does produce considerable heat. They are expensive to burn, but they can be effectively used for directional lighting.

- Flood lamps - general light in one direction.
- Spot lamps - throws light beams for considerable distances.

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35 mm COLOR SLIDES: THE (USUALLY) NEGLECTED RESOURCE

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ABSTRACT: 35 mm color slides are a basic interpretive tool, but to be useful they require proper care and organization. All photographic material is organic, so it is affected by its environment, especially temperature, humidity, light, and dust. Storage systems that help negate environmental effects vary. Use the type that best suits your slide file organizational requirements. The Grand Teton slide file is organized in a system which includes original, viewer, and duplicate slides. Each original slide is accessioned into the Park slide file and given a subject code. Viewer and duplicate slide organization is linked to the accession number and subject code.
KEYWORDS: slides, slide file organization, slide storage, care of 35 mm slides

INTRODUCTION

Anyone working in interpretation has the opportunity to use slides to illustrate the message of an interpretive talk on an almost daily basis. Certainly the slide-illustrated program is the hallmark of National Park Service interpretation. Yet many interpreters complain of a lack of quality slides and poor organization of slide files. This session addresses 1) environmental factors that affect color slides and storage systems that compensate for these factors and best facilitate slide organization; and 2) an organizational system for slides that includes original, viewer, and duplicate slides.

CARE AND STORAGE OF 35 MM COLOR SLIDES

All photographic material is organic and therefore easily affected by its environment, especially temperature, humidity, and light. A good rule of thumb to follow is "the cooler and drier, the better" and keep the temperature and humidity consistent. Cycling of temperature and humidity promotes chemical changes and growth of fungi. Color dyes will fade if exposed to light for long periods of time.

As an interpretive technique to keep interest in our programs, we are taught not to "burn" slides on the screen during a presentation. To protect the color dyes in the slide, project no slide longer than 15 seconds. Dust can also be a problem for slides. Good housekeeping helps to combat dust. Wear cotton gloves when handling slides and use an air filtration system if possible.

The primary goals for slide storage are to provide an environmentally safe storage area and to make slides easily retrievable. If you use slide pages, the acceptable materials are polyester, polypropylene, polyethlene, and triacetate. Avoid polyvinyl plastic as it can breakdown to hydrochloric acid. It can also leave a residue and stick to emulsions. If you use cabinets for slide storage, choose steel with a baked enamel finish. Wood cabinets and associated glue and varnish give off harmful vapors.

ORGANIZING THE SLIDE RESOURCE

If you don't know what you have, how can you use it? If you can't find it, what good is knowing what you have? Initial organization of a slide file takes some time, but the payoff of knowing what resources you have and where they are is well worth the initial effort.

Begin with original slides. Each original should go through a review process to assure slide quality and subject matter pertinence or need. Once selected, the original slide should be accessioned into the permanent accession record and assigned a unique accession number. It should also receive a subject code. A number of duplicates should be made according to your need. The originals should be stored under lock and key with limited access.

Duplicate slides should receive the same accession number and subject code as the original they were made from. One (or more) duplicates should go into a viewer file (or files) that is very easy to access. Viewer slides should be organized by subject. Viewer slides NEVER leave the viewer file. When a user finds a slide he/she would like to put in a program, he/she copies the ACCESSION NUMBER from the viewer slide, then pulls the slide from the duplicate file (which is organized numerically by accession number).

This is not a difficult process, but user guidelines will help users understand and follow the steps to attaining slides for their programs. If you are dealing with a large number of originals, computerizing the accession process is a time-saver and makes reviewing the original easier.

Inventory of slides is necessary at least every two years. Originals should be checked against viewer copies to be sure no viewers are missing. Some originals will need to be duplicated again to keep a usable number in the duplicate file.

CONCLUSION

Like nearly every interpretive effort, organization breeds success. With a little time and effort your slide file can become high quality and easy to use. Many of our agencies and private concerns oversee the premier natural and cultural resources of our country. The color slides we use to illustrate those resources should reflect high quality and care.

ACKNOWLEDGEMENTS

Thanks to Light Impressions, 439 Monroe Ave., Rochester, New York 14607, for their leaflet "Care and Storage of Color Slides."

THE PRINTING PUZZLE: PRODUCING BETTER PUBLICATIONS

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ABSTRACT: Interpreters, responsible for many forms of communication, are often required to produce one or two-color brochures, newsletters, and flyers. A knowledge of basic printing procedures, and how they relate to the final product is helpful in creating quality pieces... even with a small budget. Weight of paper stock, recycled paper, and paper finishes, all affect the look of a publication. Photos, colored inks, and screens can enhance a bland layout. Becoming familiar with the options available, and accurately communicating your needs to a printer, can simplify production.
KEYWORDS: bleed, paste-up, plates, screen, halftone, recycled paper, ink, process camera

SELECTING A PRINT SHOP

Knowing the capabilities of printers helps you determine where you may take specific jobs. Large chain quick printers are fast, but have limited time for personalized attention. At a small, locally owned shop, you may get personal attention from the owner, who also runs the press. Big commercial printers offer the most services, employ efficient sales representatives to attend to your needs, but are usually not well suited to small projects. Service, quality, price, and working relationship are the deciding factors when selecting a regular printer, one who will print most of your jobs. The advantages of employing a regular printer may include monthly billing, priority services, and personalized attention.

GETTING A QUOTE

If you know details about your project and would like a price quote, certain information must be conveyed to the printer: number and size of pages printed one side or two quantity paper stock photos ink color/s bindery operations (folding, collating, trimming, binding)

The printer will also need to know if your paste-up will be camera-ready, or if they will have to set type, drop in art work, or perform some other function. Given this information, a printer should be able to give you an accurate quote. If you deviate from the information you supplied for the quote, expect to pay a different price. Most printers honor quotes for a limited time.

If this is the first time you will be working with this printer, be sure to ask the image area, or the gripper margin for their press. Check on an estimated turn around time, too.

THE PRINTING PROCESS

Understanding the steps involved in the printing process, and how your layout affects them, can make your printer's job easier. It can also result in a more professional looking final product.

PASTE-UP

In most cases you, yourself, will be producing a paste-up (also known as a keyline or mechanical). It will include all elements, such as line art and type, pasted into position on a white board or paper. Be sure your paste-up is free from smudges. Your type and line drawings should be clean, crisp and black. Stick with laser printed, typeset, or carbon ribbon typed copy.

Instructions to the printer can be written on the paste-up using a non-repro blue pen or pencil. The light blue writing will not be picked up by the printer's camera. For maximum protection of your paste-up, cover it with a tracing paper overlay, taped to your board at the top. You can write instructions and shade in ink colors directly on the overlay. Put all elements in a labeled envelope or folder.

PROCESS CAMERA

The first step in the printing process is to produce a negative on the process camera. The film used is high contrast, imaging black and white the best. Light grays are seen as white, dark grays as black. Red shoots black; light blue drops out. On the negative produced, clear areas correspond to image areas that will ultimately receive ink on the press.

Photos and continuous tone illustrations must be shot through a screen that transforms the image into a pattern of dots in varying densities. When printed, your eye assimilates the dots into shades and tones. Either a halftone negative, or a halftone positive, (called a velox) can be made. A velox is cheaper to produce; negatives yield very fine reproduction. Veloxes are adhered directly onto the paste-up and can be re-used.

STRIPPING THE FLAT

Negatives are assembled into flats in a process known as stripping. Working on a light table, negatives are adhered to masking paper in proper position. The image area is cut away from the mask. Flaws in the negative, such as pinholes or scratches, can be touched up at this time.

PLATEMAKING

The plate is the surface carrying the image to be inked on the press. The thin metal sheet has a light sensitive coating. In a platemaker, light transmitted through the clear image areas of the negatives on the flats, fuses the coating to the plate backing. The exposed plate is smooth. It is wiped with developing solution and a preservative. One plate must be made for each ink color to be used.

Quick printers often skip the negative stage and produce a "quick plate" or paper plate on the process camera directly from the paste-up. These plates are good for short runs (less than 5000) where fine details are not crucial. The cost is considerably lower for the client.

PRINTING

The plate is wrapped on a drum on the press. The image areas attract oil and repel water. Since the ink is oil based, the image area attracts ink applied to the plate by automatic rollers. The inked image is tranfered to two other drums, then tranfered to paper. Grippers draw the paper into position under the roller. They hold the leading 1/4 to 3/8 inch so be sure to keep this area free from text or illustration on your paste-up.

BINDERY

Trimming, folding, collating, and binding are all part of bindery operations. To save money, plan brochures with traditional folds such as "Z" or letter style. They are the easiest to create. Check on collating costs. It might be cheaper to collate simple projects yourself.

SELECTING PAPER STOCK

Papers possess characteristics that determine quality, cost, and suitability for projects. A printer familiar with your work will be able to suggest stock for you. Most printers deal with one or two distributors, and each handles different brands of paper. Become familiar with the papers your printers can obtain. They should be able to give you sample books (or tell you how you can get them from a distributor). You'll have greater control over cost and quality if you understand the distinguishing features of different papers. Sometimes paper is not critical to your project. Ask your printer if they have any leftover stock from another project. You could get a price break.

Look into setting up your own account with a paper distributor which will allowing you to skip printer mark-up fees. In most cases distributors will deliver the stock to your printer for you. As with anything, buying in quantity reduces the price. When purchasing paper for a number of long range projects, store it in a low humidity room, in its original packaging.

COLOR

There are no color standards for paper. What one manufacturer calls "ivory", may be another brand's "eggshell". Because of the volume of its usage, white paper is the least expensive given all other elements, such as weight, are equal.

BRIGHTNESS

Papers are given brightness ratings based on the amount of light they reflect. Fluorescent dyes are added to some white papers to push them to the 100% rating. Copy has more contrast on bright paper. Papers with a lower rating have a softer look and may be easier on the eyes.

OPACITY

Opacity is critical for two sided printing. Here again papers receive numerical ratings, but these may not be readily available. Opacity is affected by color, coatings, and weight.

WEIGHT

Different categories of papers are milled in different sized standard or basic sheets. The weight of one ream (500 sheets), of basic sheets determines the basis weight for that paper. For example, the 20 lb. paper you use in your photocopier is milled in 17" x 22" sheets. 500 of those sheets weigh 20 pounds. If your final project will be mailed, balance the weight of the paper against your postage costs.

CATEGORIES OF PAPERS

BOND

Common for writing papers, photocopying, and letterheads, bond has a lower opacity than other categories. Highest quality bonds are 100% cotton fiber. For variety, bond can be purchased in different finishes, such as laid or linen with rippled or fabric-like surfaces.

BOOK

Sometimes known as offset, book is an excellent general purpose paper for two sided printing. It may be uncoated or coated with a matte or glossy finish. Coated paper results in better ink holdout and is the preferred choice for reproduction of photos. Coated papers enhance ink gloss and make colors appear more vibrant. Uncoated stock may be textured and can lend an impressive look to publications. The more common "text" finishes are laid, felt, and vellum. While "toothy" papers are interesting to look at, they make handwriting difficult and fine print hard to read. As always, keep in mind the final usage of the publication.

RECYCLED PAPER

Some printers may still be hesitant to use recycled paper on their presses. Modern recycled paper has improved a great deal in the last two years. And, its availability is increasing. But, you may have to do the leg work, and the buying, to obtain recycled stock at an equitable price. With a hesitant printer, try some projects on partially recycled stock. Beware of papers that contain little post-consumer waste.

A number of mills are cashing in on the recycled paper craze by using the "recycled" label on papers incorporating mill waste in the production. Some high end papers use a portion of post-consumer waste, but don't publicize it because they believe it would no longer appeal to their targeted clientele. A knowledgeable paper sales rep can help you.

SELECTING INK

Black is the most common, and therefore the cheapest to run. Because ink stays on the presses all day, when you request a colored ink, the press has to be completely washed, inked, and then washed again. Expect a colored ink surcharge of $10 to $30. Some printers run certain colors on certain days of the week, with only minimal surcharges. Timing your printing accordingly saves money. If your project calls for a custom ink color, there are hundreds to choose from. Most printers use the Pantone matching system. For about $45 you can purchase a PMS book showing the colors available. When selecting colors, remember that inks are slightly transparent. Blushing pink (printed on white), may look purple-gray on blue stock.

ADDING VISUAL EFFECT

Printing in colored ink, printing in two colors, upgrading your paper stock, or using photos can enhance your publication without adding exorbitant costs. A few other simple techniques can also add visual interest.

REVERSES

White text on a black background is a "reverse". They are eyecatching for main headlines, or small blocks of text, but can be overused. If you are doing paste-ups on a computer, perhaps you can generate your own. The process camera also can reverse text, as well as your line art.

SCREEN OR TINT PANELS

These can be used to highlight text, accent charts, even compose illustrations. Dot size/density determines the darkness of the tint. Purchase press-on tints from graphic art supply stores or use computer software to generate them with overprinted or reversed text. Again, for superior quality the process camera does the cleanest job.

BLEEDS

Bleeds can be a dynamic design technique. But because they often require the printer to purchase oversize stock, the cost effectiveness may be low. However, if you are planning a poster and it makes no difference if the finished size is 11" x 17" or 10" x 17", a bleed may not be prohibitive. You'll pay for post print trimming, but avoid added paper costs.

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SO YOU WANT TO MAKE A VIDEO?

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ABSTRACT: Videotape programs are increasingly replacing slide shows, static exhibits, and some personal services programs as the medium of choice. Video can be an effective tool for presenting interpretation, training, or information, but the production of a video program requires specific skills and knowledge. An introduction to the video production process and the elements and considerations necessary for the interpreter to make intelligent, practical decisions in planning a production, can help prevent expensive and time-consuming mistakes.
KEYWORDS: Video, videotape, film, director, producer.

INTRODUCTION

More and more parks, museums, and nature centers are eager to produce videos. However, few staff members or managers have the experience or skill to produce a video, nor are they familiar with the knowledge needed to seek out and hire a quality production company. The results can be poor quality, ineffective products, and wasted dollars.

Attempting to make an in-house video is well beyond the abilities of all but the largest agencies. Video equipment is very expensive and requires a great deal of expertise to operate. Thus, unless you have the expertise on staff, to make a quality video you will need to hire and work with a production company.

By following a few basic guidelines the interpretive manager can more effectively write and evaluate the video production plan and develop a reasonable expectation of results based upon the budget and resources available.

EVALUATING THE NEED

Videotape productions have several attributes to offer. They can display color, offer sound, condense or expand time sequences, show graphics, can be multi-lingual, and they're portable. Further, film and videotape have one major advantage over any other interpretive media: action.

When evaluating an interpretive message to determine if a video is the appropriate medium, it is important to investigate the need to show action sequences. Without action the videotape is simply a series of still photographs and not much different from a slide show. The result can be that you have paid for a videotape slide program at ten times the cost of a standard slide show.

By analyzing the message you can assure that video is the proper technique or you can go to a less expensive medium such as slides, exhibits, or publications.

Video also has a few limitations that should be considered. Most significantly, it is expensive to make and expensive to change. Other limitations include: images cannot be studied in detail (say a battle map for example), suitable facilities must be installed for showing the tape, visitors cannot set their viewing pace, and it cannot be adjusted to the audience.

LENGTH AND CONTENT

One of the first items to consider is the length of the program. This is usually called "running time." Here are some rules of thumb:

• VIDEOS TO BE USED FOR VISITOR ORIENTATION: 3-5 MINUTES. The tendency for novices is to make the tape too long. Remember, visitors will only watch a program for a limited amount of time before they will decide to do something else. This is particularly true if they have to view the program while standing.

• VIDEOS USED IN FORMAL AUDITORIUM PROGRAMS TO INTERPRET THE SITE OR VIDEOS MADE FOR TRAINING PEOPLE: 10-15 MINUTES. Auditorium programs can generally run this length because the subjects are more complex and the visitor expects a little more in a formal auditorium setting. Training tapes that run too long cease to serve their purpose when the students tune out.

•VIDEOS AVAILABLE FOR PURCHASE AS SOUVENIRS: 30-60 MINUTES. Souvenir videos any shorter than 30 minutes may be perceived as not worth purchasing. The maximum length is generally a cost decision on your part. As in any interpretation, you don't want the message to run longer than it needs to complete the intended goal.

SELECTING A COMPANY

One of the truisms of the film business is that anyone can buy a camera and call themselves a film company. The phone book is full of people who have done just that. The task of finding a suitable production company for your project can be simplified by adhering to the following suggestions.

•Visit the office of the company. Some are little more than storefronts with no equipment or technical facilities. Is the place well organized? How old is the equipment? Are they willing to demonstrate it? Are there any awards on display? How long have they been at this location? Will they help with pre-production? A good measure of the quality of the company is their willingness to help in pre-production.

•Talk to friends and associates who have made videos and get their recommendations. The company should be happy to give you a list of former clients; call them. Ask to see representative products of the company's work. Make sure the product is fairly recent and make sure you see the names on the credits. The creative and technical talent of the individuals are what make each facility special.

•Meet and talk with the proposed director. You must be comfortable with the director and know that he or she will respond to your wishes and instructions. Find out if the director has previous experience on your kind of program.

•Remember, once you have committed to a project and paid for services rendered you're stuck. You cannot return a finished video you don't like and ask for your money back. The cost of correcting a poor product is as much or more than the original cost. Choose carefully.

COST

Many organizations have an unrealistic estimate of the cost of film production. An industry rule-of-thumb is $1000-$1500 per minute of finished product. Thus, a 15-minute program can cost $15,000 and up. That does not mean you necessarily pay that much, but it gives you some idea of what is a reasonable quote. Many new or hungry companies may quote costs far below the larger, more established companies. Be careful. You get what you pay for in the video business.

By setting your cost estimates too low you run the risk of hiring a company unable to produce a product up to the standards expected of the interpretive profession or worthy of your organization. Or, worse, you may end up with a product that requires someone else to fix it. While checking around you may be forced to admit that you do not have enough money to produce a quality video and must either drop the project or seek more funds. Keep in mind that a poor video is worse than no video at all.

Many companies are willing to negotiate price. Don't judge a company solely on their posted rates. You are more likely to get a negotiated price if you bring the company the entire project .

COST CONSIDERATIONS

As the producer you will need to decide where costs can be cut and where no expense should be spared. Your goal is to put all your money "on the screen." That is, to try to make sure most costs go to making a good looking video rather than for paying unseen expenses such as transportation, salaries, meals, etc.

VIDEO ELEMENTS

The following elements are to be weighed before determining the budget. Some might apply to your project, others may not.

•*Actors*—Professionals or amateurs?

•*Costumes*—How authentic do they need to be?

•*Crew*—How many? What positions are necessary?

•*Equipment*—Will you need specialized equipment? Lighting, dollies, cranes, tracks, etc. It is best to figure this out early; changes and last minute additions can cost big money.

•*Length of finished product*—How long will the program be?

•*Locations*—Is there a cost or permit involved? Many places require a fee, insurance, or bonds.

•*Props*—These can run into a lot of money, if needed.

•*Sets*—Are any needed? Can locations do?

•*Shooting ratio*—More tape is used for documentaries than for scripted scenes. You should not reuse old tape.

•*Transportation*—Who supplies the vehicles? Is there overnight or other travel cost involved?

THE CONTRACT

Writing the contract for production is one of the most important factors in keeping the costs in control and receiving the desired product. There are many hidden elements and costs beyond the actual shooting of the tape:

•*Access*—Where is the crew allowed to go? Who has to be with them? Are there sensitive areas that are off-limits?

•*Copies*—How many copies are included in the price?

•*Copyrights*—Permission must be acquired to use copyrighted material. Will this project be copyrighted? In whose name?

•*Credits*—Who will be listed and under what title?

•*Delivery date*—Be sure to specify the due date and penalties for missing the deadline.

•*Editing time*—This is the time-consuming process of putting the film together and is a significant portion of the cost.

•*Format*—What format will the final product be in? 1 inch, 3/4 inch, 1/2 inch VHS, 1/2 inch Beta, 1/2 inch PAL, are just some of the choices.

•*Hiring approval*—For the crew and for the talent. If you want to retain approval be sure to specify this in the contract.

•*Insurance*—How much and what kind of insurance is required?

•*Music*—Who is paying for it? Where is it coming from?

•*Narration*—Who has final selection of the narrator?

•*Number of cameras*—Multiple cameras may be needed, especially for live events. Each additional camera costs extra.

•*Releases*—Needed for talent and locations. Who handles this paperwork and the accompanying legal details?

•*Script*—Who writes it? Who has the final say? Is the cost included in the original price?

•*Special effects*—This includes wipes, dissolves, and fades. These cost extra and should be discussed in advance.

•*Titles*—These can be expensive and there is a charge for each.

•*Union regulations*—Make sure you know if this is a union shoot. Union regulations will control much of the cost.

•*Unused footage*—Who keeps it and who gets to use it.

The contract should be signed before any work is begun. Woe unto those who bow to the idea of "we need to get started now and we can worry about the paperwork later."

THE PRODUCTION COMPANY

First, recognize that you are the producer. This means you should decide who is hired, how much you are going to pay, and the approval of the finished product. However, remember that though you have overall responsibility for the production, you should not place yourself in a position of telling specialists, technicians, and artists how to do their jobs.

The director has the ultimate authority on the set. No matter what concerns or discussions may take place elsewhere, on the set the director is right. Any disagreements you have with the director should be handled in private. Getting into an argument on the set will undermine the director's authority with the crew and you will likely force him or her into a corner where little good can result.

The number and type of crew and technicians vary depending upon the complexity and budget of the production. They are experienced in their fields and often bring their own tools and techniques gathered from years of work. The director will explain to the technicians what the desired effect is, and it is the technicians' responsibility to determine the method and equipment necessary to achieve this result.

Your technique should be similar. To achieve your desired results a good approach is to meet with and department heads (or crew members if it is a small production) and describe for them what you would like. Let them tell you what it will take in time and material.

The most effective techniques for working with the production team is to show them your site. If you can give them some appreciation for the subject they may become personally interested, and may come up with some great ideas to enhance the results.

SUMMING UP

•Videos are a great way to present interpretive messages to visitors. With planning and realistic analysis you can produce a positive, attractive, and exciting video.

•A film always cost more than you thought.

•A film always take longer to complete than you thought.

•A critical piece of equipment breaks down or is needed when you don't have it.

FUTURE VISIONS IN VIDEO

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ABSTRACT: Through the ages, interpreters have shared their beliefs on the environment with the general public using a variety of mediums. With the advent of modern video technology, a new chapter is unfolding before us which will provide countless opportunities to continue our mission. This presentation will illustrate the significance and cost effectiveness of the S-VHS video format as it has been utilized by the Lake Metroparks. Our uses have included the production of public service announcements, training of volunteers, informational pieces on park activities, and the creation of a video library of park events.
KEYWORDS: video, interpretation, S-VHS, equipment

GETTING STARTED

The degree to which an organization becomes involved in video production depends upon many factors. Although the availability of time and money are prime considerations, it is often a lack of understanding that prevents some groups from getting started. One method is to hire a video production company to step in and do it for you. They will assist with preproduction planning, shooting of video tape, post production editing, and duplication of tapes into various formats for distribution. This is an expensive option. You can expect to pay $3,000 to $5,000 for thirty seconds of finished product; and in the end that's all you are really left with.

If you consider however, all of the events and occurrences that take place throughout the year, it will make more sense to become involved with the gathering of these sights and sounds yourself. In other words, purchase a video camera and start shooting. This is the approach our park system has taken toward video. For years we relied on the 35mm camera to capture visual moments in time. Now we also record those images with a video camera. Just as we record still pictures with an intent to store them for future use in programs, publicity, and documentation, video can serve that same purpose.

FORMAT

Video equipment is not unlike still photography, in that a variety of formats exist. The strongest consideration is cost, while at the same time seeking the highest level of technical performance and versatility. We selected the S-VHS format. S-VHS has been recently developed to satisfy the needs of the professional/industrial video user. It is an improved version of what has become the most popular consumer format in the United States, i.e. VHS. When comparing technical performance between formats, one unit of measure used to gauge quality is the number of lines of horizontal resolution able to be produced

STANDARD VHS VS. S-VHS

Standard VHS will generally produce 245 lines of horizontal resolution. S-VHS, on the other hand, will produce 440 lines of horizontal resolution. This superior quality has placed S-VHS in a category all by itself. Although it will not replace high priced broadcast formats such as 3/4" and 1" tape, it does provide an affordable alternative with many of the characteristics of quality that they have.

At the same time, S-VHS does not turn its back on the previous standard in the industry, the VHS format. All previously recorded information in the VHS format can be played back on the S-VHS systems.

EQUIPMENT

The support equipment necessary to utilize the newly developed S-VHS format continues to be developed. In the forefront of research and development, Panasonic has led the way in providing a complete system to fully utilize S-VHS' capabilities. The single most important component in our involvement with video has been the camcorder. A camcorder is a camera and recorder in one, self-contained unit.

THE CAMCORDER

If I were to recommend the purchase of one piece of professional/industrial equipment, it would be the camcorder. These should not be confused with consumer S-VHS machines. They are truly high performance and durable, and are your first link in the chain of producing a quality end product. Panasonic's model AG 450 combines a host of features that has met with our satisfaction in a variety of uses.

The remaining pieces of support equipment and accessories will vary depending upon your needs and conditions. A TV and separate VCR are a standard consideration. The VCR should of course be in the S-VHS format. The TV should have S-VHS inputs if you wish to fully appreciate the capabilities of this high quality tape, although this is not crucial. Accessories such as extra camcorder batteries, a sturdy portable tripod, and a portable light system will also be found to be useful.

CAMCORDER HANDLING

Becoming familiar with the capabilities of the camcorder is necessary before attempting to gather footage of any importance. The best method of accomplishing this is by connecting the camcorder to a TV and reviewing the owner's manual instructions. This will allow instantaneous results for every function experimented with. Once in the field, you will have to rely on the 1" viewfinder's black and white image to determine what is being captured on tape.

This experimentation should include shooting under a variety of lighting conditions such as fluorescent, incandescent, and sunlight. Each light produces its own field of color that your camcorder is designed to correct if adjusted properly. Get a feeling for what low light conditions do to picture quality and depth of field.

Camcorders are designed to be rested on the shoulder, but you will find the limitations in creating a stable picture by relying on this method entirely. Closeup and telephoto work are best accomplished on a tripod or some other solid base.

LET THE FUN BEGIN

Now that you are equipped and familiar with your camcorders operation, it's time to turn your investment into a real benefit. The public service announcement (PSA) is a good way to start. It's difficult to put a dollar value on the general public's heightened awareness of the resources that your park system provides. We can, however, agree that as the public's cognizance rises, an appreciation and support occurs.

A PSA is usually viewed by most park systems as a free ad, sent out regularly to the local newspapers. It's just as it sounds, a service to the public by the media. If you were to place a dollar value on all of the space that your organization has enjoyed as a result of PSAs, it would be an impressive figure. This same service is available through the television media.

CREATING A VIDEO PSA

Putting together a video PSA is much like creating a short slide program, something most of us have had some prior experience with. A theme or focus is decided upon, followed by a written script, and finally a story board is set up illustrating the sequence of images. The ideal length for a video PSA is 2030 seconds.

It doesn't sound like much time, but you can arrange a considerable amount of information in that space. Individual images need not be on the screen very long to be effective. Consider also that the type of transition between different scenes can allow more information to be shown via dissolves, split screens, and wipes.

Once you have reached the point of having a story board complete, it is time to contact several post-production video studios. If you are working in the S-VHS format, you will want to select a studio that can either edit in S-VHS or has the capabilities to transfer your S-VHS tape onto 3/4" tape for editing.

A representative from the studio should be willing to spend some time with you to discuss their charges. Often times the best approach is to obtain a package price for the project including tape transfer, on line editing, duplication into formats that are acceptable to the media, and any kind of voice or music that needs to be layed in on your piece. Do not hesitate to shop around.

STEPS YOU CAN TAKE

There are some steps that you can take that will have a significant impact on lowering your costs. If your organization's logo is an important part of your identification, obtain a "copy ready" reproduction and shoot some footage of it in good light. This can then be used in the studio during editing as a lead in or closure. If you ask around, you may find that a staff member or volunteer has a connection in the music field.

If that is the case, it may be possible to obtain the use of uncopyrighted background music. Another asset that often goes untapped, is a good voice to read the spoken part of your video. A fairly good cassette recorder and microphone, in a quiet room, will produce a sound track that can be edited in during your studio session.

VISIT TO THE EDITING STUDIO

You will usually find two things to be true during your visit to the editing studio. **One** is that the technician that you work with will truly enjoy being a part of creating this project with you. They are artists in every sense of the word, and often get tired of creating "another commercial for the local supermarket". Your project gives them an interesting change and for that reason they will often spend more time getting things right.

Secondly you will find that an open mind to change goes along way. No matter how carefully you plan, there are times when you or the technician suddenly see a better way to proceed. Allow yourself the flexibility to change things a little.

An example of where the benefit lies in creating a PSA is well illustrated in our last experience. During our editing session we created 4 PSAs. The complete package price was about $2,000. We distributed the tapes to the 3 major stations in our area and also to one cable network. At the end of a six month period, we received reports from 2 of the networks indicating that our dollar benefit from their transmission of our video was approximately $250,000. That's a significant amount of exposure for a minimal investment.

PSAS

PSAs are a good start, but the fun doesn't end there. We have found that video can assist with volunteer training. As an example, one of our volunteer research projects involves the surveying of park properties for nesting raptors. Some 75 volunteers are trained in identifying raptor species and the signs that they leave behind. One of our most valuable tools in instructing them on what to look for, has been the reviewing of video footage shot at nest locations.

During the six months of surveying, we have monthly meetings, to update the participants on active areas that have been located and then video taped. This technique has the added benefit of keeping their interest and enthusiasm on a high level.

For this type of video usage, it isn't necessary to become involved with a post-production studio. All that's needed is to hook two VCRs (or one VCR and a camcorder) together and do simple assembly edits.

SPECIAL FACET OF YOUR PARK SYSTEM

For a more elaborate project, you may consider creating a video program featuring a special facet of your park system. When you consider all of the programs that you presently do and all of the natural events that could be recorded, video makes sense. It's economical, fun, and easy to get started with.The possibilities are only limited by your imagination.

THE NEW DYNAMIC DUO: VIDEO AND COMPUTERS

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ABSTRACT: The use of video has grown tremendously in the past ten years, but the medium's full potential and interpretive applications have yet to be realized. The marriage between video technology and computerization blurs the distinction between them and raises the prospect of approaches that were previously unimaginable. The computer part of video and the video part of computers are becoming one and the same.
KEYWORDS: video, interpretation, interactive systems

THE NEW DYNAMIC DUO

Our experience with non-video programs such as synchronized, dissolving slide shows, film trees and other audiovisual systems is that some parks have great difficulty operating and maintaining them.

To overcome these problems, the Harpers Ferry Center of the National Park Service has been installing computer controlled, optical laser disk programs. The ease of use and dependability of the laser videodisc players make them the medium of choice for many parks.

The use of videodisc systems fall into three broad types of installations. The most popular is in support of museum exhibits. These systems are integrated into exhibits where multiple still images or short video clips support the themes communicated in the exhibit .

This technology has allowed us to bring visual images to the exhibit without the associated problems of replacing slides or films on a regular basis. It also enables an easy way to provide captions to aid the visually impaired.

Another application of videodisc technology is an alternative to slide programs or film presentations, where theater space is unavailable. A video alcove or small viewing area can be designed with a monitor and videodisc player. The programs can be activated from the front desk, or automated to run on a scheduled basis all day long without staff attention.

INTERACTIVE COMPUTER AND VIDEODISC PRESENTATIONS

Interactive computer and videodisc presentations are also finding a place in interpretation. They promote active visitor participation and enable customizing information to each user. Visitors select the information they are interested in viewing and learning about, by making choices which determine the path of the program as it progresses.

INTERACTIVE SYSTEMS

Interactive systems are being used to provide information on park activities, attractions, accommodations, services and facilities. Several of these systems are functioning in Alaska parks. Denali has been the proving ground for interactive information systems for the past five years.

Other systems have been installed in the Public Lands Information Centers in Anchorage, Fairbanks, and Tok. These systems are easily updatable and new information can be added by the park staff. Just as importantly, they can be configured from off-the-shelf hardware and software provided under contract with outside vendors.

INTERACTIVE TECHNOLOGY

Interactive technology is also being used to develop computer simulations. Katmai National Park has just installed a Grizzly Bear program that allows visitors to interact with grizzlies in a non-threatening manner. Visitors respond to questions and situations concerning the natural history of grizzly bears and human behavior associated with close bear encounters.

Depending on the choices made and responses given, the program instructs users on appropriate behavior. Also under development is a backcountry simulator for Denali National Park, for use at the Riley Creek Visitor Access Center.

DENALI'S BACKCOUNTRY

Much of Denali's backcountry is designated as wilderness and offers challenges not commonly found in most camping environments. Information on stream crossing, wildlife encounters, minimum impact camping and visitor safety is offered in a highly interactive way. Visitors are presented with situations they could encounter in the Denali backcountry and are offered choices as to what they could d o under these conditions. They choose their responses by way of a touch screen and are then showed the consequences of their choices .

At Independence National Historical Park, the Promise of Permanency exhibit uses sixteen interactive computer stations to enable visitors to customize the exhibit to suit their individual interests. One component called "Scanning the Constitution" lets visitors choose from more than seventy topics ranging from space exploration to gay rights.

By touching any of the key words referred to, the visitor sees, first, the segment of the Constitution that applies to the topic, then, a short segment explaining the appropriate power of the Constitution. In the scanning exhibit, visitors begin to understand what the Constitution is and how it operates.

THE TIMELINE SECTION

The Timeline section offers 77 vignettes illustrating how the Constitution has adapted to change over the years. The objective of this element of the exhibit is to let visitors begin to understand why the document has endured for two hundred years. By touching the image of a policeman kicking in a door one enters the world of the 1960's with its debates over police excesses and the rights of defendants. Or one can touch the political cartoon showing fat cat monopolists, and learn about Teddy Roosevelt's attempt to bust trusts.

A third section of the exhibit offers the opportunity to watch segments on current topics like sex discrimination, toxic waste, school desegregation or school prayer. Here, the Constitution is as current as the nightly news, with actual network news segments reporting the status of these questions.

On several topics, visitors are able to listen to a debate, then register their opinions on the issues. As the issues change, text can be entered to bring the exhibit up to date.

LINCOLN MUSEUM

Another application of videodisc technology occurs at the Lincoln Museum in Ford's Theater National Historic Site, Washington, D. C.

The National Park Service collected virtually all known photographs of Abraham Lincoln. Then they scaled the photographs to like size, masked them to Lincoln's face, and focused on his eyes. Within about thirty seconds, visitors see Lincoln age from a young ma n to a gaunt president, weary from war. High technology, historical perspective, powerful results.

New buzz words in computers are **"desk top video"** and **"multimedia,"** the combining of audio, video, text, graphics, and data under computer control. To hear pundits talk, the all-illusive interpretative teaching and learning machine is on the horizon.

HOW WILL THIS NEW TECHNOLOGY EFFECT INTERPRETATION?

How will this new technology effect interpretation? Are we seeing the cutting edge of the interpretive future, or has the National Park Service wandered into an interpretive twilight zone? Can computers and videodisc systems keep operating despite heavy visitor use? Are park staffs willing to cope with the tasks of integrating technology into their interpretative programs? We will find the answers together as we use the technology over the next decade.

"MRS. AGNES: AN ORAL HISTORY INTERVIEW WITH A 100-YEAR-OLD AFRICAN-AMERICAN WOMAN"

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ABSTRACT: In cultures where the history is often not recorded, or where there are biased or incomplete historical accounts, traditional methods often yield little to the understanding of social history. This lecture will demonstrate historical interpretation through video-documentation. An unedited videotape, which is a part of the documentary film, "Family Across the Sea," will be shown of Mrs. Agnes' oral history interview. A production of the South Carolina Educational Television Network, the documentary will explore the historical and cultural connections between two "Gullah" cultures: the Sea Islands of South Carolina and Sierra Leone, West Africa. Mrs. Agnes is a descendant of slaves from regions along the West African coast. Her language, belief systems, and customs significantly reflect the influences of the Sierra Leone region.
KEYWORDS: video-documentation, African-American culture, Sea Islands, West Africa, oral history, rice culture

"FAMILY ACROSS THE SEA"

The one hour documentary, "Family Across the Sea," explores the remarkable connection between the Gullah culture of the Sea Islands and the people of Sierra Leone, West Africa. As a research consultant, I assisted S.C. ETV producer, Tim Carrier, and videographer, Domino Boulware, in the interpretation of Mrs. Agnes' oral history segment.

The Sea Islands are found along the Altantic coast, beginning just north of Georgetown, South Carolina, and running south to the Florida border. The estimated 1,000 islands along this stretch of coast are separated from the mainland by marshes, alluvial streams, and rivers. The outermost islands are bordered by the Atlantic Ocean and are as far as 20 miles or more from the mainland.

During the 1700s the American colonists in South Carolina and Georgia discovered a very profitable economic plantation system, "rice planting." Although these colonists had no experience or skill in rice cultivation, they learned that Africans from the "Rice Coast" or "Windward Coast" were traditional rice-growers. This region stretched from Senegal down to Sierra Leone and Liberia. These colonists also discovered that the moist semi-tropical marsh borders along the Sea Islands were comparable to the West African coast.

By the late 1700s French Hugnenots settled and developed numerous rice plantations. Later, in the 19th century, McClellanville, South Carolina was developed by these planter for social and health reasons. During the summer months planters along with their slave servants lived in townships such as McClellanville; however, most slaves lived year-round on the malaria-ridden rice plantations.

MRS. AGNES: A 100-YEAR-OLD AFRICAN-AMERICAN WOMAN

Mrs. Agnes is a native of McClellanville. This quaint fishing village is about mid-way of the Sea Islands region. Although McClellanville is not an island, it is separated from Georgetown, the closest urban center, by three rivers: the South Santee, the Santee North Fork, the Sampit. Before bridges and highways were built in the 1920s and 1930s, McClellanville was rather isolated; and well into the 1940s its small black community had minimal influence from the urban white culture.

The rice culture forged this remarkable link between the people of Western Africa and Southeastern North America. These coastal planters were willing to pay high prices for slaves from the Rice Coast; therefore, in the 18th century an enormous number of West African slaves were imported to the Sea Islands. Mrs. Agnes is a descendant of these slaves; her language, belief systems, and customs signifcantly reflect influences from the Sierra Leone area. The Gullah dialect that you will hear in the video, is an English-based creole language which is strikingly similar to Sierra Leone Krio.

The video taping, "Family Across the Sea," effectively captures the beauties of these two cultures. Although this production is geared to a wide television audience, it has relied upon historical resources. Historians sometime consider video a non-traditional documentary media, but it is becoming widely used and universally accepted for historical documentation, as well as an archival storage medium.

EXERCISE OVERVIEW

A 30-minute video tape will be shown of Mrs. Agnes' oral history interview. Because of her strong gullah accent another native of McClellanville, Mrs. Eugenia Deas, will ask the questions and act as the interpreter.

Approximately 45 minutes of the lecture will be interphased with the showing of the video. "The Old People" as they are called today, brought with them traditions of foodlore, religion, and wedding practices. I shall analyze these and demonstrate the procedures of obtaining valid substantial information for historical interpretation.

Twenty minutes will be given for open discussion, allowing for audience observations and questions.

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"CROSSROADS OF CLAY" AND "BLACK CELEBRATIONS" - FROM OBJECTS AND EVENTS TO SUCCESSFUL INTERPRETIVE EXHIBITIONS

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ABSTRACT: McKissick Museum is a general museum situated on the University of South Carolina campus. McKissick is dedicated to interdisciplinary exhibitions that examine the everyday culture and lifeways of southern people along with more traditional natural science, fine art and history museum topics. "Crossroads of Clay: The Southern Alkaline-Glazed Stoneware Tradition" and "Black Celebrations in the South" are two case studies in innovative interpretation. While both exhibitions share the common theme of multi-cultural inquiry, these two projects illustrate different stages of the interpretive process and address divergent aspects of interpreting folk cultures.
KEYWORDS: folk culture, multi-cultural interpretation, celebration, African-American culture, museum interpretation, pottery, southern culture

MCKISSICK MUSEUM

McKissick Museum is a general museum dedicated to interdisciplinary interpretation, with an emphasis on southern folk culture and everyday life. The museum integrates investigations of traditional culture with the fine arts, history, and natural sciences. McKissick's goal in interpreting vernacular culture is to reach non-traditional museum audiences while also educating traditional museum visitors about the role that folk culture plays in all our lives. The two exhibitions that will be discussed in this presentation provide excellent examples of McKissick's unusual interpretive mission.

While "Crossroads of Clay" is a completed, object-intensive exhibition that is largely historical, "Black Celebrations" is a work-in-progress focusing on events that are currently vital in southern African-American communities. Each of these exhibitions therefore has a unique set of interpretive challenges. Although "Crossroads of Clay" and "Black Celebrations" examine widely divergent topics, these two ground-breaking projects share similar orientations and strategies. Both exhibitions require extensive fieldwork in addition to conventional archival research, both make heavy use of multi-sensory interpretation (e.g., videotape, music, and reconstructed environments), both deal with multi-cultural processes, and both use "slice of life" interpretive strategies to communicate dynamic ideas.

CROSSROADS OF CLAY

"Crossroads of Clay," a major traveling exhibition with accompanying educational materials, is the culmination of over seven years of research by McKissick Museum. Ceramics scholars have long recognized the importance of the Edgefield District of South Carolina as the cultural hearth of the southern alkaline-glazed tradition. With "Crossroads of Clay," McKissick Museum communicates the fascinating story of alkaline-glazed stoneware, an amalgam of African-American, Anglo-American and Asian ceramic traditions, to the lay public. This exhibition explores the world-wide influences that came together in Edgefield, resulting in a new stoneware tradition that has spread throughout the lower South, yet virtually disappeared in its birthplace. The concept of process is explored on several levels through the exhibition, ranging from the steps involved in the process of creating pottery to the interpretive process and how it connects to the audiences' lives.

Accompanying educational materials for "Crossroads of Clay" were designed to complement and reinforce the themes of the exhibition. Primary resources such as archival documents, family photographs, and oral history transcriptions are included in an educator's kit designed for circulation to elementary, middle, and high school teachers. With outreach to schools that may not have the resources for a museum visit in mind, the education kit is designed to operate independently from the exhibition.

BLACK CELEBRATIONS

The "Black Celebrations" project is in its initial stages of development. We initiated research in 1988 for an exhibition scheduled to open at McKissick Museum in 1993. The exhibition will display the role of celebrations in the daily life of southern Black communities, examining the one-hundred year period from emancipation to the dawn of the civil rights movement. Although many celebrations have existed from the beginnings of African-American culture, some relating directly to earlier African ancestry, very little documentation exists on the role of celebration in African-American culture.

The first two years of this project have involved fieldwork to document celebrations and investigate the social impact of celebration on African-Americans in the South. From this fieldwork several themes for the exhibition have emerged. "Black Celebrations" will demonstrate the ways by which African-Americans use celebration to maintain, affirm, and assert their identity within their families (via weddings, birth rituals, baptism, and funerals), their local community (via Watch Night, turn outs, school homecomings, and leisure holidays), and the larger society (via Emancipation Day, Decoration day, July 4th, Labor Day, and Martin Luther King, Jr. Day). The exhibition will consider three realms of celebration (family, community, and larger society) as a set of nested spheres that aid insider enculturation in addition to forging a powerful African-American presence within the larger society.

Unlike many other traditional museum exhibitions, "Black Celebrations" is not an object-centered exhibition; this exhibition has the difficult task of interpreting cultural events within a museum context. In addressing the unique concerns of this project the exhibition will make use of documentary footage, audio/video sounds and images, and construct environments that utilize a narrative framework to interpret African-American celebration.

Another challenge is to create an exhibition that will speak to a diverse, multicultural audience. For this reason we will examine events such as funerals and the 4th of July that are not exclusively African-American, demonstrating the differing perceptions of these celebrations within Black and White culture groups. We will also examine African-American celebrations such as Watch Night to provide a better understanding of the role that celebration plays within African-American culture. The exhibition will provide visitors with a fresh perspective on familiar celebrations while also examining celebrations that are relatively unknown to the larger society.

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PRESENTING PROGRAMS WHICH ADDRESS THE LEARNING STYLES OF VISITORS

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ABSTRACT: Understanding and enjoyment of visitors often increases because the interpreters and naturalists provide activities which accommodate the inherent learning style preferences of visitors. More than 160 activities for interpreters and naturalists that address learning styles are featured in a new book, *A Program Planner For Naturalists & Outdoor Educators*. It employes a learning style model, the 4Mat System, which classroom environmental educators have successfully used to create curriculum for the past decade. The introduction of *A Program Planner For Naturalists . . .* is one of the first adaptations of learning styles for interpreters and naturalists to employ when they plan and present programs. This workshop will provide a brief overview of learning styles, then provide take-home activities and handouts which interpreters and naturalist can use to plan and present their programs.
KEYWORDS: teaching, increasing communication, addressing learning styles

INTRODUCTION

Of the myriad roles and functions today's interpretive naturalists perform while working in interpretive settings the success of their programs may depend largely on one crucial skill: Communication (Tilden 1967, Sharpe 1976, Hammitt 1981). To accomplish this objective many interpreters often plan their presentations by first analyzing the diverse characteristics of their audience members—differences in age, interests, beliefs, educational and cultural background. In addition, many interpreters consider the various work, home and family experiences of their visitors (Field and Machlis 1984, Hammitt 1981).

Intensifying many interpreters program planning processes are the changing demographic factors of our society—e.g. the changing age structure, changing family structure and increasing two career families—which indicate an increasing diversity in the type of people today's interpreters serve (Field and Machlis 1984).

To effectively achieve this approach, Hammitt (1981) suggests interpreters need a conceptual basis for how people perceive and learn to know environment information and argues that, due to inherent differences in human personalities and past experience, interpreters must use various stimuli to activate understanding and comprehension among their audience members.

OBJECTIVE

Building upon the value of the preceding paragraphs of interpretive theory, the purpose of the workshop in Charleston, South Carolina is to introduce a model, the 4Mat System, (copyright 1990, Excel, Inc.) and to illustrate its application in *A Program Planner For Naturalists & Outdoor Educators*. The learning model is based on contemporary educational and psychological theories and advocates that educators (such as interpreters) should present interpretive activities which address the various learning styles preferences of their visitors in order to effectively communicate with them.

One of the central premises underlying the author's reason for publishing *A Program Planner For Naturalists & Outdoor Educators* is that interpreters need to understand the different styles in which people perceive and process information. The 4Mat System recognizes that people learn in different ways (Kolb 1974,1976; McCarthy 1981).

Developed from the work of Bernice McCarthy and other education and psychology researchers and professionals, the 4Mat System model has been used as an aid in the development of environmental education curricula units in the Lee Co. Florida school system, the Boyne River Natural Science School in Shelburne, Ontario and by the interpreters working for the Recreation Program Branh of Kananskis Co., Canmore, Alberta. The model proposes to accommodate the different styles in which people learn and, thus, may promote effective communication (McCarthy 1981).

According to the model, people have four different styles of learning:

Style One Learners: Prefer to learn through a combination of watching with sensory experiences.

Style Two Learners: Prefer to learn through the combination of watching and thinking concepts.

Style Three Learners: Prefer to learn through active involvement, using hands-on activities as a focus for understanding.

Style Four Learners: Prefer to learn by combining knowledge gained from personal experience and experimentation.

McCarthy argues that an individual may learn successfully in all four styles, but the person shows a preference for one. This style is simply the most comfortable manner for the person to learn (Kolb, Learning Style Inventory, 1976). In addition, another aspect of McCarthy's learning model incorporates theory dealing with right and left brain processing functions (McCarthy, 1981).

WHY SHOULD INTERPRETERS ADDRESS LEARNING STYLES?

I believe the value of these theories put into practice by interpreters can serve the valuable functions of: **1)** allowing visitors the opportunity to refine their best style of learning because the interpreter is providing them multiple ways to perceive and process the material included in a program; **2)** allowing visitors to discover and enhance their own inner strengths while also providing them occasions to further their abilities to learn in the alternative learning styles; **3)** providing visitors with a variety of experiences which can help them appreciate the values of and to learn from fellow visitors.

Interpreters who use of the 4Mat System model to plan and conduct their programs also acknowledge the value of diversity among all their visitors. These interpreters cherish the opportunity to address and communicate successfully with each individual in their audiences. Ultimately, interpreters who understand the value of their visitors to possess an informed and literate knowledge of the interactions among human and natural communities, present a variety of interpretive programs and themes.

As a result, these same interpreters value the role that contemporary methods in education and psychology imply for inclusion in the interpretive field. For these reasons, the 4Mat System model and its application in *A Program Planner For Naturalists & Outdoor Educators* in a tool for interpreters to cultivate an increased communication among themselves and their audiences.

In total, we would thus do well to again recall the sage advice: the better we are able to teach our visitors to know, the more they will see; the more they see, the more they will know—and the more they know, the greater the likelihood they will care to act in behalf of what they see reflected in their heart.

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LEARNING DIFFERENCES: EVERYTHING YOU WANTED TO KNOW ABOUT DEVELOPMENTAL DISABILITIES BUT, WERE AFRAID TO ASK.

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ABSTRACT: Successful interpretation for individuals with developmental disabilities requires the ability to identify and reduce the restrictive conditions of the learning environment. Outlining the program on a concept matrix allows the interpreter to analyze instructional techniques and identify potentially restrictive methods. Understanding developmental disabilities in both a categorical and a non-categorical manner enhances the interpreter's ability to design and deliver a program appropriate to the individual's functional ability.
KEYWORDS: developmental disability, least restrictive, functional ability, concept matrix

DEVELOPMENTAL DISABILITIES

An interpreter's success in working with individuals with developmental disabilities is often more dependent on how well she assesses the individual's functional ability than understanding the medical definition and diagnostic standards that describe the disability. It is important to obtain accurate information about disabling conditions but, a purely categorical approach is limiting and does not offer an accurate picture of the "whole" person.

Successful program delivery to individuals with learning differences requires the interpreter to recognize how her instructional style and methods may be restrictive to those with developmental disabilities. Provided here is a discussion of basic delivery guidelines for working with persons with developmental disabilities. Also described, is a technique called matrixing the concept that encourages the interpreter to assess her instructional methods to ensure that the program delivered includes rather than excludes those that learn differently due to a disabling condition.

CATEGORICAL APPROACH TO UNDERSTANDING DISABILITIES

There is a natural tendency to feel slightly uncomfortable with someone that may act significantly different from what we are accustomed to or in a manner we can't foresee. In an effort to confront our "fear" of disabling conditions we strive for a way to understand the disability. This effort generally leads us to a long list of disabilities typically defined by an associated series of characteristics.

Understanding disabling conditions in this manner is referred to as the categorical approach. This approach has several merits: **1)** it provides the interpreter a means to getting accurate information and thus, may dispel commonly held myths, **2)** it generally provides a basic outline of the communication and supportive interactive styles that are commonly associated with the disability, **3)** it may provide a realistic insight into the individual's potential ability, and **4)** it may alert the interpreter to possible medical implications of the condition.

The significant limiting factor of this approach is that a person with a given disability may or *may not* exhibit all of the characteristics unique to that condition. The interpreter may have a lot of information but, still be left asking herself: "how will this person behave?" It is at this point that the interpreter must strive to move beyond the categorical approach to the non-categorical approach to understanding disabilities.

NON-CATEGORICAL APPROACH TO UNDERSTANDING DISABILITIES

The non-categorical approach attempts to understand the "whole" person by recognizing that functional difficulties associated with a disabling condition are a result of a person interacting with specific conditions of an environment. Appreciating an individual's functional ability means identifying and focusing on what is restrictive in the environment rather than the individual's behavioral deficits. The non-categorical approach encourages us to focus on what the individual can do.

The restrictive conditions generally recognized because they are easy to identify are physical barriers; such as, stairs or rough terrain. Less noticeable but, as restrictive as a set of stairs are instructional styles and methods. The interpreter's delivery can be reviewed and easily adapted to include those that learn in a different way or at a different rate.

GUIDELINES FOR DELIVERY

These guidelines outline an approach to delivery that attempts to recognize how attitudes or behaviors can promote an atmosphere of acceptance and possibilities rather than restriction.

1. Make the effort to focus on the individual's ability rather than his/her disability.
2. Remember, people with disabilities are more similar than dissimilar.
3. Strive to appreciate and understand personality, as well as, the disabling condition
4. Remember, everyone appreciates being listened to and spoken to in a manner that is respectful, direct and clear.
5. Make "special" programs as typical or regular as possible.
6. Present opportunities for learning that correspond to the chronological age of the individual.
7. Always address the person first and the disability second. It is a more positive approach to address the individual as a: "person with a disability" than, as a "disabled person."
8. Set a good example, others in the group have a tendency to emulate the leader.

ASSESSING YOUR INSTRUCTIONAL METHODS

To assess whether or not instructional methods and techniques are restrictive to a person with a developmental disability, the interpreter must commit herself to learning to anticipate the programmatic effects of the individual's functional ability. This means learning to predict what will happen when the individual interacts with the activities that are being delivered.

The predicting of programmatic effects requires asking questions and creatively finding a way to have something for everyone. Most often this will have to be done "on the spot" while leading a presentation. This skill however, can be developed and program materials can be reviewed prior to a presentation.

The interpreter can review what material she's going to present and how it could be presented using something we refer to as the concept matrix. This exercise requires the interpreter to analyze the program and ask herself: "what are all the ways I can deliver the concept of my program?"

The interpreter begins by selecting an existing program and identifying the most important item she wants the participants to learn. That item is the concept. The next step is to identify several supporting definitions that describe and explain the concept. Next, using the following progression of instructional methods identify those that apply to the existing program delivery. For those methods that are not used, create a way to illustrate the meaning of one of the definitions.

DEFINITIONS

1. Sensory method: illustrate through the use of sensory awareness.
2. Simplify: take the words you used in defining the concept and simplify them even further.
3. Compare/Contrast: take a key word and examine how it can be illustrated through naming its opposite.
4. Analogy: answer, "what is it like?"
5. Demonstrate: show what you mean visually.
6. Component: Use one of above named methods to explain a single component of the concept.
7. Facts: present a supporting fact.

Generally, this exercise reveals that the existing program curriculum is either heavy in the facts category or the sensory category. This presents a problem when working with groups of varying ability. A program filled with lots of new words and ideas can be restrictive and frustrating to an individual with a developmental disability. A lot of sensory awareness without connection to supporting information can get boring and seem unconnected to the topic of discussion to someone that is capable of comprehending the new information.

HERE'S HOW THE EXERCISE MIGHT WORK

Here's how the exercise might work. You have an existing reptile program that includes such concepts as: definition of a reptiles, types of reptiles, characteristics of types of reptiles, and the adaptations of types of reptiles. You're going to begin by asking: "what do I really want to participants to remember from this program?" In general, you'll want to limit the number of different concepts and definitions you include.

In this case, you decide that you can narrow it down immediately if you choose to concentrate on one type of reptile, a snake. Your concept, in simple terms, is not the broad category of reptiles but, snakes or,"what makes a snake a snake?" The definitions used to explain this can be characteristics and adaptations of a snake. You can now, go through the progression listing alternatives for each method that illustrates an adaptation or characteristic of a snake.

When the matrix is complete the interpreter will have numerous ways of illustrating the same basic point at varying levels of complexity. The result is a program that utilizes a variety of techniques. Variety is the key to creating a least restrictive learning environment. The concentration on a particular concept and specific definitions maintains the program focus and keeps the learning experience purposeful.

SUMMARY

It may appear that this technique sounds like a review of good interpretive skills for any audience from the pre-school toddler to the seventy year old visitor. And basically it is. It is presented here, as a way to demonstrate that working with individuals with developmental disabilities is not significantly different from working with others audiences.

However, successful interpretation for individuals with disabilities does require an interpreter's commitment to creating a least restrictive learning environment. This includes overcoming the apprehensions that the program doesn't work for individuals who cannot read, or who have attention deficit disorder.

The challenge is to deliver a concept using several instructional methods in an attempt to have something appropriate to the individual's functional ability and learner level.

IMPROVING THE ACCESSIBILITY OF YOUR INTERPRETIVE PROGRAMS

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ABSTRACT: We interpreters need to broaden our interpretive skills—and our programs—to encompass the needs of all our visitors, especially those with disabilities. Total accessibility includes both physical and programmatic accessibility. Federal mandates for accessibility, as well as a variety of programmatic techniques and devices, will be discussed. The National Wildlife Federation's fully-accessible Mountain Laurel Trail will be examined as a case study of programmatic accessibility. Participants will be encouraged to share ideas, concerns, "learning experiences" and success stories.
KEYWORDS: disabilities, interpretive programs, programmatic accessibility, techniques

INTRODUCTION

Approximately 50% of Americans have some degree of disability. This includes individuals with some form of significant physical, sensory or mental impairment; individuals, with less apparent disabling conditions (both temporary and/or chronic), and many senior citizens who experience various degrees of disability.

Disabled individuals are visiting our parks, historical sites, nature centers, etc. in ever-increasing numbers. They expect and deserve a rewarding, informative and (sometimes) challenging experience (Geiger et al. 1989). Interpreters need to broaden interpretive skills and programs encompassing the needs of our visitors, especially those with disabilities.

FEDERAL LEGISLATIVE MANDATES

The Architectural Barriers Act and Section 504 of the Rehabilitation Act have mandated that any federally-funded facility and/or program open and/or available to the public must be accessible to disabled individuals to the greatest extent possible. In 1990, this mandate was extended to the private sector with the passage of the Americans with Disabilities Act (ADA).

The ADA prohibits places of "public accommodation" (including nature centers, parks, historic sites, museums) from discriminating against individuals on the basis of disability. Physical and programmatic barriers in existing facilities must be removed if removal is readily achievable (Department of Justice 1990). Each member of NAI connected with a "public accommodation" facility and/or who does public programming is now mandated to make those facilities and programs available to all visitors.

PROGRAMMATIC ACCESSIBILITY

An objective of interpretive programming is to provide a comprehensive experience for all visitors. "Programmatic accessibility" means that every effort is made so all visitors can get the most from your interpretive efforts. A variety of interpretive activities ("personal services") can be conducted and various devices ("hardware") employed to expand and enhance the experience of all visitors.

PERSONAL SERVICES

Interpretive staff personnel should be trained in the nuances of assisting disabled visitors. Staff persons trained in sighted guide assistance (for vision impaired visitors), wheelchair assistance, proper public speaking techniques (to assist lip readers) and sign language can help disabled visitors, actually all visitors, enjoy their experience (National Park Service 1984). Presentations should be as multi-sensory as possible (see "Tactile Experience" below), a technique that will benefit your visitors.

HARDWARE

Hardware considerations range from exhibitry to brochures to audio-visual devices. Employing these can enhance the accessibility of your interpretive message: Exhibitry positioned so it is easily read or touched by both standing and seated visitors; large print/high contrast color signage; large print, high contrast color and/or braille brochures that supplement your regular print brochures; and a TDD (Telecommunication Device for the Deaf) to facilitate communication with deaf callers. There are three other techniques/devices worthy of special comment:

TACTILE EXPERIENCES

As mentioned in "Personal Services" above, a multi-sensory presentation is always a preferred interpretation technique. Special effort should be made to provide tactile experiences. This includes relief maps, models, and/or objects being interpreted. The provision of tactile experiences provides all visitors, especially those with visual impairments, learning impairments, or mental retardation with concrete information needed to better understand the interpretive message.

DESCRIPTION

Audio description is a technique which employs a highly descriptive verbal explanation or depiction of a visual event for visually impaired persons, described as the "art of talking pictorially." This innovative technique is used for films and in museums. There is tremendous potential for successful application of audio description in nature centers, visitor centers and at other interpretive locations and events.

CAPTIONING

A major interpretive tool is the use of audio-visual presentations such as films, video tapes and slides. Captioning is the most effective method of adapting film and video materials for the deaf viewer.

With videotape or disc, we have the option of having "open" captions where the captions are visible at all times to everyone or "closed" where the captions are only visible with the use of a special decoder. For films and slides, open captions are burned into the film or slide. A system has also been developed that permits captions to be projected by another device in conjunction with the film or slide projector.

NWF'S MOUNTAIN LAUREL TRAIL

The National Wildlife Federation's (NWF) Mountain Laurel Trail is located at NWF's Laurel Ridge Conservation Education Center in the Virginia suburbs of Washington, DC. The trail, a 1/2 long, asphalt-paved, self-guiding, multi-sensory, fully-accessible nature trail, winds through twelve acres of mixed woodland on gently rolling topography. It was constructed and dedicated in 1986 and designated as part of the National Recreation Trail System by the National Park Service in 1987 (Geiger 1989).

Physical accessibility is provided via the trail's barrier-free design. An "interpretive package" including large print, high contrast colored signs; regular and large print brochures; an audio cassette tape and a braille transcription of the interpretive sign information provides program accessibility. The trail is publicized via press releases and targeted mailings the Metropolitan Washington, DC, area. More information about the Mountain Laurel Trail can be obtained from National Wildlife Federation.

CONCLUSION

The goal of total accessibility is a worthy and challenging one. Federal mandates now extend to all of us who provide either public accommodations or programming. The architects, the engineers and the builders will be called upon to meet the challenge of physical accessibility standards and requirements. The members of the interpretation profession will be expected to meet the challenges of programmatic accessibility and interpretive messages as meaningful as possible to all our visitors. It is a challenge we must meet.

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INFORMATION SYSTEMS IN INTERPRETATION: AN EXCITING FUTURE FOR THE NATIONAL PARKS

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ABSTRACT: In our lifetimes, we are experiencing profound and sudden changes in the ways we communicate and relate to one another. And yet, according to our finest computer scientists, the so-called Age of Information has scarcely begun. Only dreamers and science fiction writers dare to imagine what the future might bring.
KEYWORDS: communicate, computer, interpretation, information

INTRODUCTION

We are all aware and appreciative of the increased productivity that results from embracing the early fruits of these developments—such computer applications as word, data, image, and sound processing, modem and fax communications, and other administrative tools and processes that microprocessors and other technologies make possible.

We also know that exploding scientific and technological breakthroughs resulting in sophisticated information systems are providing the experts with valuable tools to increase our knowledge about our environment.

But it is not scientific research or the production or elimination of administrative paperwork that is at the heart of what we, in interpretation, are all about. As we prepare the visitor for quality experiences in our parks, it is our task to be on the lookout for ways that will help us do that more efficiently and effectively.

I have always been impressed with the quality of, and the ideas generated by, interpreters in the field. People of high caliber and vision gravitate to those jobs. But they learn quickly that it is not always easy to prepare the visitor for what they are about to see, experience, or attempt to understand.

As this Age of Information progresses, I believe that we, and the interpreters in the field, are going to get some real help from the expanding technology. It is ironic, perhaps, and only fitting that some of the very processes that provide the scientists with insights into the complex ways of nature, will be the very same technologies (enclosed in different black boxes, of course) that will enable us to better explain the concepts to the public.

We are looking at new media and new ways to deliver programs and presentations involving the manipulation of imagery, sound, text, and other elements of exhibitry and design that, until recently, have not been possible. Five years ago, some of them were considered impossible. We will have the opportunity in the next few years of meeting some of the really difficult challenges that have, for so many years, confronted us.

DEVELOPMENT OF SMALL COMPUTERS

Most of us are aware of the recent developments of small computers and what has made them possible, including integrated circuitry o n silicon. But the real breakthroughs coming are by combining the microprocessor with other technologies.

They include (to mention only a few) the diode laser, coherent light engines, fiber optic transmission of digital information, the gallium arsenide substrate for new digital memory, gas filled matrix screens requiring no projection, and sound and optical digital recording, transmission, modeling, and display devices. Every one of these developments have or eventually will have direct applications for us as we develop new programs.

Furthermore, scientists believe that software engineers are just now beginning to create the type of artificial intelligence software that will result in significant improvement of information systems that may have potential for us.

We at the National Park Service 's Harpers Ferry Center, in cooperation with interpreters in the parks, have begun to experiment in a small way with applications using some of these technological combinations.

We will go slowly at first, testing the water gingerly, and will rely on feedback from the parks. It is not lost upon us that the best technology is hidden, or at the very least, transparent and submissive, and that human interface must be kept simple. We are also mindful that media must be manageable in the field.

HARPERS FERRY CENTER

But go forward we will! Harpers Ferry Center has had a long tradition of searching for, or designing media to assist the parks in telling their stories. Now, with the blossoming of information technologies, we have some genuine opportunities to break old, very difficult interpretive barriers. Some of the applications we are now developing include:

Very low power, solid state digital sound cards driven by microprocessors, to produce sound segments for wayside exhibits. Example s of this technology are found at Yellowstone National Park, Wyoming; Curecanti National Recreation Area, Colorado; and the Cambria Iron Works of America's Industrial Heritage Project, Pennsylvania.

COMPUTER SIMULATION

Computer simulation and animations of geological and historical events. Examples include the formation of Carlsbad Caverns, New Mexico, and the construction and bombardment of Fort Sumter National Monument, South Carolina, at the beginning of the Civil War.

Experimental, familiarization map programs using computer, matrix-recorded imagery on horizontal surfaces, driven by a laser disc and Red-Green-Blue projection systems, or computer generated images on slides that are projected onto topographic models of the park s.

Touch screen, computer driven visitor interactive information systems, that also deliver printed messages to familiarize the visit or with a park. These are installed at New River Gorge, West Virginia, and Johnstown Flood National Memorial, Pennsylvania.

PROJECTED COMPUTER AND VIDEO IMAGES

Projected computer and video images via laser disc. At Andersonville National Historic Site, Georgia, this comprises a system to help visitors better understand prisoner-of-war experiences.

Somewhat farther off for us are technological developments, just now emerging from media research centers, that will allow presentations to be shown with gas-filled, flat matrix screens that will not require a projector, and vastly improved holography generated, in part, by microprocessor. Such nascent image presentation media have enormous potential for us in future years.

TAKING ADVANTAGE OF IMPROVED TECHNOLOGY

Taking advantage of improved technology need not require expensive, complicated equipment. Today's high-density, 16-millimeter color movie film projects with contrast and richness approaching that of 35-millimeter film. Media specialists can thus upgrade quality of their presentations solely by using these new high-density films.

We do not expect to achieve these goals without problems, or without taking some risks, and we are aware that they will change the w ay we plan, think, and work. We know that we are going to have to develop new skills, and we have taken steps to do just that. Thoughtful designers have begun to realize that the newer, microprocessor-driven media, and their presentations, do not fit into methods of attempting to convey information.

While we can still roughly categorize an effort as being an audiovisual production, an exhibit, or a publication in nature, the time is near when such distinctions will no longer be quite so meaningful. As we work with park interpreters on some of the newer approaches, we are encouraged by their reactions, and are grateful for their encouragement. We look forward to their continued contribution of ideas and suggestions.

PRIMITIVE SKILLS IN INTERPRETATION TODAY

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ABSTRACT: Bringing elements of a past way of life to a modern audience can open-up an awareness and remind human beings of the ever present environmental inter-connections around us today. Primitive Skills (P.S.) or Native American Technologies (N.A.T.) can provide program leaders with avenues of interpretation to compliment their natural history program scheme while simultaneously allowing historic or cultural foundations to set up. Individuals practicing primitive skills (or N.A.T.) may not only develop new slants to a program, but produce exhibit items to save dollars. A review of programs involving P.S./N.A.T., specific examples of "tools of the trade," and literature sources will be displayed during the poster session.
KEYWORDS: primitive skills, interpretation

INTRODUCTION

With some investment in training and after basic material acquisitions, one can adapt the primitive way to meet program objectives appropriate for the site. Revealing the environmental connections to the world around us is shown through the materials used or obtained as incorporated into P.S./N.A.T. activities. One topic interpretation easily flows to another as cycles of life become apparent.

A series of P.S./N.A.T. topics can serve the interpreter's needs through demonstrations, living history programs, arts and crafts, exhibit items, and story-telling to name a few. Returning to the past will broaden your outlook of tomorrow.

THE ADVANTAGES

Learning age-old skills gives one a better understanding of the environment and human beings as well as a better appreciation of historic remnants and a way of life shrouded by time. There is a special feeling of accomplishment and personal reward as one practices P.S./N.A.T. and shares with others. Teaching P.S./N.A.T. can be useful in boosting self-confidence in some individuals. This can be done through short sessions or an extensive workshop covering a variety of topics.

Once an individual is prepared to conduct a workshop, one can consider using the special activity to increase revenue by charging a reasonable fee. Some items produced may be suitable for a new exhibit. If you can make it with quality, and have the time, why buy it?

The price of artifact reproductions can be very big. Trading some of our reproductions to-fellow interpreters has been advantageous. We must save money when possible.

Face up to it. History can be a very boring and dry piece of information unless the presentation makes for a better way. One of our popular programs, entitled the "Arrow-Maker's Way," has not only provided an interpretive story with elements of history, but it has also entertained young and senior audiences. The use of P.S./N.A.T. can catch and hold the attention if presented properly while overcoming a stigma associated with a "history lesson." See if you do not get a response when you describe and demonstrate brain-tanning for example.

GETTING PRIMITIVE

You will find many publications dealing with topics of P.S./N.A.T., but some have confusing text or incomplete information. A list of literature sources and vendors has been provided to assist individuals interested in getting on with the primitive way.

Continue with visits to museums and review private collections when possible to study artifacts. There are many resource people who will share their knowledge and once you become involved in any level of research you will discover these individuals.

Be careful, because P.S./N.A.T. can be addicting and consuming. I have already alluded to the fact that one skill area leads to another. What good is an arrow if you don't have a point?

VENDORS

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3. Bows and Arrows of the Native Americans Jim Hamm
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CONSERVATION, ENVIRONMENTAL EDUCATION AND ECOTOURISM IN COSTA RICA: THE LOMAS BARBUDAL MODEL

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ABSTRACT: Tropical dry forest is a rarer and more endangered habitat in Central America than the better known tropical rain forest. At Lomas Barbudal Biological Reserve (Guanacaste Province, Costa Rica), a community-oriented program of conservation and environmental education has been established to both preserve a remnant tropical dry forest habitat and educate local residents in the value of that preservation.
KEYWORDS: conservation, environmental education, ecotourism, Costa Rica, Lomas Barbudal

INTRODUCTION

Tropical dry forest once stretched along the Pacific Coast from Mexico to Panama and equaled an area the size of France. Today, less than 2% of this original dry tropical forest remains, and only 200 square miles are in protected status (Edgar 1989). Lomas Barbudal Biological Reserve in northwest Costa Rica (Guanacaste Province) is a 6000-acre (2500-hectare) unit of the Costa Rican National Park System that preserves a remnant of tropical dry forest. It is a biological treasure, due in part to the presence of creek, spring and riverine habitat within it, and is home to white-face and howler monkeys, coatimundis, anteaters, ocelots and over 200 bird species.

It has a rich assortment of bees (over 250 different kinds) that are responsible for the great diversity of flowering plants at the site (FOLB 1988). At Lomas Barbudal and elsewhere in the canton (county) of Bagaces, a community-oriented program of conservation and environmental education has been established to preserve this endangered habitat, educate local residents in the value of that preservation and provide ecotourism opportunities.

CONSERVATION EDUCATION

I took a leave of absence from my work as a Naturalist for the East Bay Regional Park District (Oakland, CA) for the months of January through March 1990 to work in conservation education in this tropical dry forest habitat. These months are the dry season, called "verano", or summer, even though Costa Rica is above the equator. My work was supported by the non-profit Friends of Lomas Barbudal which has, with the assistance of the World Wildlife Fund-US, the Holland Embassy in Costa Rica, and individual donors sponsored a conservation education program for local youth in Bagaces for several years.

"CLUB AMIGOS DE LOMAS BARBUDAL"

A conservation club, "Club Amigos de Lomas Barbudal" (CADLOBA) was formed in 1989 to perform conservation work, produce interpretive materials, and share natural history information with local students and visitors. A conservation education director, Magda Campos Barrantes, was hired to provide continuing interpretive and educational programs at the Reserve and in local schools.

My work with CADLOBA included running several meetings in the absence of the education director; writing and rehearsing a play, "Quien es el senor Lomas Barbudal?" (Who is Mr. Lomas Barbudal?); participating in an environmental education workshop for young leaders in EE held at the Reserve site; providing an insect-study field trip for interested local youths; and holding workshop sessions at my house for Club members to produce posters.

FUNDRAISING

I also supported CADLOBA fundraising activities, including an all-day trail ride out into the countryside which was arranged by Club members. I gave several lectures on interpretation and interpretive techniques for the newly-created Young Docent Naturalists program, some of whom are Club members, and translated natural history information into Spanish for their training.

The CADLOBA members have worked on trails in the Reserve; produced a trail guide pamphlet for the "Sendero Colegio de Bagaces" (Path of the Bagaces High School) which was constructed in the Reserve during Holy Week (around Easter) in 1988; solicited materials to improve the Visitor and Community Center at the Reserve; placed "basureros" (litter cans) decorated with bat and insect designs at the Reserve and in town; attended biological investigation sessions at night out at the Reserve to view bats and hawkmoths with researchers; and participated in outreach conservation education programs in the communities surrounding the Reserve and in the local schools. Some members have travelled to other areas of Costa Rica to represent the Club, its efforts, and Lomas Barbudal at conservation conferences.

OUTREACH TO SCHOOLS

I joined the conservation education director and Sue Perin, another volunteer naturalist, in doing seven programs about bats for rural schools, using six "bat masks" (one for each of the major bat feeding adaptations) I created with Sue. Bat Conservation International of Austin, TX provided a Spanish-language slide show on bats, and posters which were donated to the schools. We played the "Bat and Moth" game, using masked bats and moths (students), and demonstrated the similarity of the human hand and the bat's wing.

I translated the "Bats Eat Bugs" song's first verse into Spanish and taught it, and the students were bemused by the line about "Bats don't fly in your hair": many of the bat myths we cherish are shared with Costa Ricans, but not the one about getting caught in coiffures! Most of the 37 primary schools in the canton have been visited with the program, which promotes understanding for a much maligned and extremely important animal as well as awareness of the nature of Lomas Barbudal and its place in the community.

YOUNG DOCENT PROGRAM

To extend the information that young people in the Club and the community have learned about Lomas Barbudal and conservation, a Young Docent Naturalists Training Program was begun in March of 1990 (Frankie and Frankie 1990). A group of young people first met with the education director and volunteer instructors to learn about our expectations: they would participate in weekly sessions on a variety of topics, including the natural history of the Reserve, fire ecology, interpretive skills and techniques, how to use field guides, ecotourism and the National Park System in Costa Rica. They would be expected to share this information through programs in the schools and community. For many, getting in front of an audience to speak, even as an exercise in training sessions, was difficult but 17 students completed the training.

My contribution to the training came at the very beginning: what is interpretation? what are characteristics of a good interpreter? what questioning strategies are helpful? what do you look for in a good/bad program? I did not bring a copy of Tilden's book with me, and tried my best to remember and then translate into Spanish his six principles. One evening, several weeks into the preparation for the training program, I was going over my talk with Magda, the education director. When I shared a Tildenism with her (without identifying the source), she said that this piece of philosophy was well-known and very obvious. No, I insisted, a writer had created this philosophy in a famous book, "Interpretando Nuestra Herencia." Quick as a flash, she said, "I have this book!" and indeed she had a Spanish translation of Tilden. So, I gave a much better rendition of his principles of interpretation in Spanish than my efforts alone would have allowed.

I also gave an introduction to program planning using the 4MAT system (Edelstein 1990), and tips on themes. In these early sessions, the students also played some of the ecology games (food webs, bat and moths, lap sit) that are frequently used in environmental education programs.

At a later session, the young docent naturalist trainees visited the Organization of Tropical Studies station at La Selva to see community docents, trained by the biologists of the station, in action.

ECOTOURISM AND THE FUTURE OF SMALL RESERVES

Cultural and natural history heritage sites around the world are being "loved to death." The paleolithic caves at Lascaux, France, have been closed to public viewing and there is limited admittance to the paintings in the Altamira Caves of Spain. The Dunhuang Caves in northwestern China (also known as the Mogaoku Grottoes) are 492 caves of Buddhist art which, after 1600 years, are threatened by moist carbon dioxide in the breath of thousands of recent visitors. Most of the caves will soon be closed and future visitors will view eight duplicated caves (similarly, replicas of the Altamira Caves can be seen in Madrid).

At the Gombe Stream Reserve in Tanzania, site of Dr. Jane Goodall's famous research with chimpanzees, these animals have been dying from a flu-like disease, complicated by pneumonia, which Dr. Goodall thinks was contracted from tourists. Unguided visitors to the park are liable to attack from human-habituated chimpanzees.

The Center for Conservation Biology of Stanford University is studying the impact of ecotourism at the Monteverde Cloud Forest Reserve in Costa Rica. On a recent visit to Monteverde, I saw first hand the accumulated effects of thousands of tourists on the trails of the small, easily accessible area near the visitor center. They are deeply trenched, in some places by as much as two or three feet below their original level.

Lomas Barbudal Biological Reserve is one of the closest parcels of tropical dry forest to the Pan American Highway, and Guanacaste Province is due for a large influx of tourism development money soon. Nearby projects will triple the number of hotel rooms in the country, and in 1990, the "Year of Tourism", plans are once again being made to establish an international airport in the province, outside the nearby city of Liberia.

Lomas Barbudal is most frequented by groups interested in its bird life. In the time I was there, groups from the Dodge Nature Center in Minnesota, the Smithsonian Institution, the Morro Bay (California) Audubon Chapter and the National Audubon Society Board of Directors visited the Reserve.

It is too early to predict what future visitation will be like at Lomas Barbudal. The community-based Young Docent Naturalist Program will surely stimulate interest on the part of local residents to visit the area, and continued development of tourism in Costa Rica ensures that the Reserve will be a popular site for visiting birders.

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ANTIQUE STEREOSCOPE VIEWS: OUT OF GRANDMA'S ATTIC AND INTO YOUR INTERPRETIVE PROGRAM

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ABSTRACT: From the 1860's through the early 1920's, the stereoscope was the single most common educational tool using the medium of photography. Views produced for it cover almost every aspect of the American landscape and residents. Still readily available, stereoscope views can provide windows on the past as aids to both cultural and natural history interpretation.
KEYWORDS: stereoscope, history, interpretation.

HISTORY OF THE STEREOSCOPE

The lenticular stereoscope is a device invented in 1850 by an Englishman, Sir David Brewster, and eventually refined into its most efficient form by Oliver Wendell Holmes in 1859. It is used to give the illusion of three dimensions when viewing a set of two photographs mounted side by side on a card.

Thousand of photographers working nationwide used stereophotography to chronicle every aspect of life and the landscape. It has been conservatively estimated that they produced and sold at least *five million* different stereoviews.

For seventy years the stereoscope was a familiar piece of equipment to most Americans. Almost every middle and upper class household had a selection of stereoviews, as did most schools, libraries, churches, and other public educational institutions.

INTERPRETIVE USES FOR STEREOVIEWS

Stereoviews constitute a valuable resource for the interpreter and can be used with or without a stereoscope in a wide variety of ways. They can provide information on furnishings and fashions, on ecological changes or social trends. They can shed light on the former appearance of people, places, or things.

One common type of use is the "Then And Now" exhibit, in which a stereoview of long ago is shown next to a modern photo of the same subject. This illustrates either change or permanence, for example to see how vegetation in Yosemite Valley has changed over the last century.

Views can also nicely illustrate points in interpretive presentations. For example, using stereoviews of the harvesting of passenger pigeons, sea turtles, bison, or whales provides graphic evidence when talking about endangered species and biodiversity.

HOW TO LOCATE STEREOVIEWS

The view cards can be purchased at antique stores, flea markets, camera shows, and other places that deal in old paper goods or photographic materials. Prices range from less than a dollar for a generic scene, to dizzying heights for a view of Abraham Lincoln, but most are easily affordable for interpretive institutions with modest budgets. There is also a national collectors organization that provides research, a bimonthly journal, and networking, for its members.

SUMMARY

Stereoscope views document seven decades of the types of scenes and subjects that historians and naturalist require information about today. They are easily obtainable, inexpensive, readily portable, and take up little storage space. All of these factors make the views an ideal interpretive tool limited only by the bounds of our imagination.

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ADVANCED AWARENESS TECHNIQUES

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ABSTRACT: We modern-day humans have lost many sensory capabilities, and intellect has supplanted intuition. Awareness thus is not simply a matter of paying attention to our surroundings. If we are to achieve our potential we must be reintroduced to specific techniques that have been neglected or ignored in our society. This workshop will define some of these techniques, and will offer exercises designed to help participants discover and develop them. Topics to be considered include wide-angle vision, 3-dimensional vision, focused hearing, scanning, seeing purely, gut feeling, the whole landscape.
KEYWORDS: sensory awareness, teachable moments, intuition.

INTRODUCTION

Our way of life has trained us out of the innate sensory capabilities that gave the ancients a sense of the beauty in the world and an ability to know the landscape in all its detail. We can recover these techniques and use them to enrich our lives and, incidentally, greatly increase the effectiveness of our interpretation. Although the power of these techniques is maximized in combination, each one can stand alone. Workshop participants will receive descriptions of exercises and a bibliography that will help them to develop these techniques.

WIDE-ANGLE VISION

Communications technologies such as print and television have provided many advantages necessary for the development of our civilization. But there have been costs, as well, and one of these is the way we use our sense of vision. These media train us to focus our vision narrowly, to look at only one small thing at a time. But when we do so, we miss most of what is going on around us.

An alternative is to spend most of your time in wide-angle vision, spreading your attention equally over the entire, bowl-shaped area of your visual field. You lose detail, but there is nothing wrong with focusing narrowly for a short time to check something out.

Wide-angle vision is especially sensitive to movement, and is necessary for optimal seeing in dim light (rods are few or none in the fovea). You are more likely to pick out the subjects of teachable moments when you are seeing every animal that moves past or above you.

SEEING IN THREE DIMENSIONS

We all know that our physical universe has three dimensions of space, but thanks to our current dependence on one-dimensional print and two-dimensional television and movies, many of us do not actually see in three dimensions. A demonstration of this is that people often look at the surface of a mass of vegetation, say a forest or clump of brush, without seeing into or through it. It is as though they are waiting for the camera to pan in for them, to penetrate the surface and reveal the mysteries behind it.

FOCUSED HEARING

Cupping your hands behind your ears is a good way to enhance hearing. The optimal positioning of your bent arms is about 45 degrees to either side of straight forward. There are two applications of focused hearing. To amplify sounds, bend both ears symmetrically forward. To locate the direction from which a sound is coming, take a lesson from the owls and tilt one ear slightly up, one down.

SCANNING

The third dimension includes us. We need to be aware of what is all around us, not just in front of us, and to include ourselves in the environment. Scanning involves turning your eyes to all directions in both wide-angle and 3-D vision.

As in earlier techniques, you will see more animals, etc., as you gain control. It is not entirely automatic, though. You will need experience, for example, to see that there is a rabbit when only the outer half of one ear is in view, or to spot a raccoon by the particular texture of a small exposed patch of its fur. You will need to slow down and enjoy the experience.

SEEING PURELY

This is the most important of all the techniques I'm likely to have time to present in the workshop. The technique is to lose all labels and critical evaluations, all words or concepts connected with what you perceive. Turn off your sensory filters and take it all in. This is not easy. The first step is to understand that it can be done and to set it as a goal.

You know you are beginning to succeed when you experience The Ten Thousand Things (an Oriental concept which describes the sensation well). For me, it first happened as I walked across a winter corn field in which all the stalks had been knocked over. I looked down at the ground and suddenly that entire little scene filled my visual field. It engaged my whole mind. I saw the particularness and beauty of each bit of each cornstalk.

At the same time I absorbed the spatial relationships of all those bits, all those cornstalks, and that also was beautiful. The sense of beauty did not come in the instant of seeing purely, but in the next instant, as the first critical thought. An instant of seeing purely was all that was needed to absorb every detail.

All advanced awareness techniques are helped by mental relaxation, a sort of internal slowness, but such relaxation is absolutely essential for seeing purely. Put all other things out of your mind, relax and slow down.

Seeing purely has many values, many applications. It helps you to pick out more animals, more of the significant details within your surroundings. When you watch an animal you will absorb more of what it is doing, in a sense putting it into slow motion, so that you can get a more complete picture of its behavior.

Seeing people purely helps you to see and understand them better, because for a significant instant you remove the blinders of habit, of concept, of stereotype. Perhaps the most significant gift that comes from seeing purely is a heightened sense of the beauty in the Earth.

GUT FEELING

You are part of the landscape through which you are moving; remember to give some attention to your internal impressions. Important information is registered in the gut—i.e., parts of the anatomy other than the head. This is one form of intuition, an important foundation for awareness that we in our rational, Western society have neglected.

We all have experienced gut feeling: "butterflies" in anticipation of a stressful situation; the strange, nagging tension that tells us we have forgotten something, and the sensation of relief that comes when we remember; the feeling of being watched. It can be a great awareness tool, but more than any other of the techniques I'm likely to get to in this brief workshop, its application varies from one individual to another.

THE WHOLE LANDSCAPE

We need to treat all the senses the way we've been treating vision; to hear purely, for example, absorbing all of the details of a sound without applying labels. Hear, smell, feel in the three dimensions, out to the limits of the landscape, in wide angle, i.e., in all directions at once. Ultimately the various techniques are combined into a single technique of awareness as you practice each one until it becomes a more or less constant, automatically functioning part of you.

It takes a lot of focus, going well beyond simply paying attention to the surroundings. Ultimately you pour so much of yourself into those surroundings that your ego begins to disappear. You begin to blend with the Earth. This sounds mystical, but in practice it becomes straightforward and matter-of-fact, though no less wonderful for that.

SCIENTIFIC SORCERY: PUTTING SCIENCE IN ITS PLACE

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ABSTRACT: The strengths and limitations of science often are misunderstood. Interpreters can help to resolve this misunderstanding, and can use scientific resources and methods to improve their own work. One way is to follow the scientific literature. Another is to perform scientific studies. I recommend that interpreters create dossiers that contain nothing but their own detailed observations on the subject matter of their interpretation. Conducting more complete, focused, comparative or experimental studies will help interpreters to appreciate science's strengths and weaknesses. The knowledge and enthusiasm that arise from this process will improve interpreters' existing programs and lead to new ones.
KEYWORDS: science, interpretation, research, scientific literature

SCIENCE AND ITS STRENGTHS

My own views as a scientist in training were shaped by philosopher Karl Popper (1968), who considered what he called criteria of demarcation in separating what is scientific from what is not. He pointed out that science is done by human beings, who cannot totally abandon their subjectivity. So science depends upon observations that are the same no matter who makes them.

There is no way to prove that any hypothesis is true, because you can never be sure that an exception will not appear. But you can try to falsify a hypothesis, and if a hypothesis stands up to a variety of tests, it can be treated as though it describes a part of the physical universe correctly. Science is our best tool for understanding physical reality.

LIMITATIONS OF SCIENCE

So far, so good. The picture is made fuzzy, of course, by the statistical nature of many phenomena in the natural world, as well as by chaotic determinism. The humanity of scientists leads them to bend the rules, often without being aware that they are doing so (Loehle 1987). These are points which have become better known in the years since Popper's treatise. But in my view they simply add interest and color to the basic structure outlined in the previous section.

Of greater concern is the assertion by many scientists and others that science is, or should be, the only way to obtain knowledge. Extreme proponents of this view (e.g., Randi 1980) maintain that phenomena or aspects of reality that are inaccessible to scientific methodology simply do not exist. Popper pointed out that there are clear, logical limits to science and intrinsic uncertainties in its foundation. The whole range of metaphysical experience is subjective in nature and thus out of bounds to science. We celebrate this, in the arts and in religion. It is irrational to condemn such experiences in the name of science. They are not scientific, but that does not mean they are not real.

I have argued (Strang 1989) that our purpose as interpreters ultimately is spiritual in nature. There is nothing in science to contradict such a purpose, and I see nothing wrong with using tools such as science to support that good purpose. But we must be absolutely clear about ourselves and our tools, as well as our purpose. So let me go on now to talk about more concrete matters, the use of science's resources by interpreters.

USING THE SCIENTIFIC LITERATURE

Scientists rarely get involved in interpretation. But they do publish their results in the scientific journals. Even small college libraries subscribe to a variety of journals, and universities worthy of the name receive most of the important journals in the major academic areas. So interpreters don't need to go far or look very hard.

I spend about 1-1/2 work days each year in reviewing about 15 journals, mostly in the areas of ecology and animal behavior. Among these I particularly recommend Science, Ecology, American Midland Naturalist, Canadian Journal of Zoology, and the Quarterly Review of Biology. Natural History magazine is a good popular source of sound scientific information.

LIBRARY VISIT

During my library visit I look for papers of interest or utility to my interpretation—you would focus on different papers even if you chose the same journals. I skim titles, skim abstracts under interesting titles, and do spot reading in the texts of the papers themselves.

I almost never read entire papers, unless they pertain to my own research interests. I trust the peer review process, although I recognize that mistakes can be made. I do use judgment, though: if my experience or the language of an author (too many qualifiers or hedging words) make me question a paper, I will make little use of its information. I also recognize theoretical papers for what they are, and am careful to qualify any references to them I may make in my interpretation.

I find that I frequently get ideas for new programs or ways to refresh existing ones from my study of the scientific literature. For example, studies of the reproductive ecology of Jack-in-the-pulpit (Bierzychudek 1982), which results in the death of the pollinating insects, added an interesting dimension to my spring wildflower walks. Showing my audience the dead flies inside the pulpits of female plants gave a positively artistic contrast to the sublime spring scene. The complexity of firefly display behavior (Lloyd 1980 and references cited therein) also has enriched the summers of many of my program participants.

DOING IT YOURSELF

A few years ago I got the idea to create dossiers for the different species of animals and plants, limiting the information in them to my own observations. I was embarrassed at how little I could write even for common species. The exercise prompted me to be much more conscientious in my observing and note-taking, and has resulted in a surprising jump in the vitality and credibility of my interpretation.

EXPERIENCE

The reasons for this, I suspect, include the fact that second-hand information I had "learned" from others or from books was not as vivid to me as were my own observations. Experience had taught me that the books and journals sometimes are misleading or wrong, so there were subconscious reservations about second-hand information I was transmitting. Also, I was accumulating a collection of stories from personal experience that made presentations more interesting. I recommend that interpreters try something like this dossier approach to the natural history stage of science.

And if you want to go whole hog, why not set up a scientific study of your own? You very quickly will learn how limited scientific methodology is. Your own interests will dictate the questions you will investigate. I find that the research forces me to notice things I might otherwise miss.

For example, while measuring the phenology of leaf availability in forest plants I discovered that two species of spring wildflowers send up leaves in late autumn, thus extending their photosynthetic season with minimal risk of leaf loss to specialist insect herbivores. And again, your personal observations can't help but improve the vigor and freshness of your interpretation.

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EDUCATIONAL TRENDS FOR INTERPRETATION; BLOOM'S TAXONOMY

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ABSTRACT: Within educational systems higher thinking skills are achieved through use of Bloom's Taxonomy. Bloom's is a hierarchy of learning from the basic level of knowledge to high levels of evaluation. Utilization of Bloom's can be vitally important to interpretation and environmental education in reaching state goals. The session will involve instruction in the levels of Bloom's Taxonomy and the relation to levels of difficulty. Participants will practice writing questions at each level individually and/or in small groups. Further participant discussion will explore the practical aspects of implementing Bloom's into the interpretive and environmental education curricula.
KEYWORDS: educational practices, cognitive skills, higher thinking skills, Bloom's Taxonomy, levels of difficulty, levels of complexity.

INTRODUCTION

Most of us in the field of interpretation and environmental education have lofty goals for our participants. Few of us would declare that recollecting the names of a few trees is the final desired outcome of our programs. we subscribe to much higher missions. The question that needs to be asked then, are we using educational practices that enable our participants to obtain higher goals or are we perpetuating lower level objectives? Educational trends have focused on the need to develop higher level thinking skills to increase the meaning of learning and the ability to think creatively.

In the early 1980's educators faced declining SAT scores and the well-publicized "Nation at Risk" report. Attention turned to critically evaluating our educational processes and new efforts concentrated on teaching to one's objectives. Cummings (1980) noted:

> Students are not failing in recall, punctuation or spelling but they are doing worse in complex skills such as making inferences from what they read, writing coherent essays and general reasoning ability (p. 38).

In other words, if we as interpreters and environmental educators expect for our participants to 'become environmentally' aware and active citizens,' then we need to teach the cognitive skills to reach that goal.

BLOOM'S TAXONOMY

The Taxonomy of Educational Objectives In The Cognitive Domain (Bloom's Taxonomy) is not new. It was first published in 1956. The utilization of Bloom's Taxonomy with teaching to objectives, now commonly referred to as "higher level thinking skills," has been implemented by the Hunter Model since the late 70's and continues today.

The goals of this presentation include:

1) to become aware of the levels of difficulty and levels of complexity;

2) to understand the relationship between levels of difficulty and Bloom's Taxonomy;

3) to practice writing questions/challenges at each level of Bloom's;

4) to discuss application of levels of difficulty and Bloom's Taxonomy within your work/professional situation.

Understanding the differences between "difficulty" and "complexity" is the first step in improving our instructional effectiveness. Often an interpreter faces a group of students without knowing much of their background. The interpreter quickly establishes a relationship and can diagnose the students' knowledge level of the subject.

The interpreter then adjusts the level of difficulty of the information/approach depending on the diagnosis. One's program can become very difficult but still remain at the lowest level of Bloom's Taxonomy (Knowledge). See Table 1. How difficult our questions and challenging our program does not necessarily aid in the development of higher level thinking skills.

BLOOM'S TAXONOMY

LOWEST LEVEL:

Knowledge

• **Key words are:** list, name, and recall. What is it? (bits of information but has no meaning)

Comprehension:

• **Key words are:** describe, recognize, restate. How does it work? (Enables the information to become more useful)

HIGHER LEVEL SKILLS:

Application:

• **Key words are:** interpret, demonstrate, diagram. Who uses it? (convergent thinking)

Analysis:

• **Key words are:** compare, categorize, separate. Compare uses of oak among plants, animals and people.

Synthesis:

• **Key words are:** design, formulate, construct. Write a story about oak. (divergent thinking)

Evaluation:

• **Key words are:** judge, evaluate, asses. Are oaks more important than other trees? (placing value based on information not just opinion)

Practice during the presentation will assist participates in using levels of difficulty and Bloom's Taxonomy (levels of complexity). If this all appears to taxing, don't worry. Hunter recommends (1982):

> It is not essential that you are able to identify precisely which level you are encouraging. What is important is that students have information they understand and can apply before you expect them to successfully achieve more complex cognitive feats (p. 81).

Limited time within the session restricts a comprehensive discussion of the practical uses of Bloom's. As a guide, practice using Bloom's to know what it is and its applicability to your programs. Discuss the merits/problems of using higher level thinking skills even in its simplest form with your staff or peers.

Educators are confident the methods can increase the thinking skill level and meaningfulness of student learning. Implementation of higher level thinking skills can help us increase the effectiveness of reaching our interpretive/EE programming goals.

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red oak
vs
pin oak

white oak family
vs
red oak family

oak
vs
other broad leaved trees

broad leaved tree
vs
evergreen

tree
vs
not a tree

Difficulty

define, repeat, list, name,
memorize, read, recall, recite=

Knowledge

Bloom

What is it?

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Table 1

APPLYING MADELINE HUNTER'S PRINCIPLES OF LEARNING TO INTERPRETIVE EXPERIENCES

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ABSTRACT: To help individuals learn more efficiently and effectively has been a goal of the educational community. Besides teachers, other professionals such as naturalists are often cast into the role of "teacher" and have the same objective. The Hunter model of learning allows the psychological concepts of learning to be employed while the professional simultaneously refines and practices teaching skills. This paradigm is based on four components: 1) selecting objectives at the correct level of difficulty, 2) teaching to those objectives, 3) monitoring participant progress and adjusting teaching and 4) using the principles of learning.
KEYWORDS: objectives, teaching, learning, monitoring.

INTRODUCTION

The Hunter model for learning is a broad, comprehensive paradigm that incorporates most psychological concepts recommended for effective teaching; it is a vehicle for putting concepts into practice. The model is not a checklist to be used in its entirety in every lesson but it does offer principles upon which effective instructional decisions should be based.

The four major components of the Hunter model are: **1)** selecting objectives at the correct level of difficulty, **2)** teaching to those objectives, **3)** monitoring student progress and adjusting teaching and **4)** using principles of learning. What follows is a brief discussion of these four components and the principles of learning.

SELECTING OBJECTIVES

Teaching is a stream of decisions and the first one to be made is selecting the objectives of the lesson and the level at which they should be taught. An objective has two parts, the specific content to be learned and the observable behavior by which the student will demonstrate that learning has occurred. Consequently, the teacher must identify the goals of the lesson and decide what teacher actions will promote behaviors to reach that goal.

A teacher's action to facilitate learning usually falls into one of four types: **1)** providing information, **2)** asking questions, **3)** providing activities and **4)** responding to students. The instructor must also determine what level of Bloom's taxonomy, knowledge, comprehension, application, analysis, synthesis or evaluation, is required for the cognitive processing of the objective. Thus, the first decision, what is going to be taught and how will learning be demonstrated, also demands a decision about specific teacher actions needed to promote learning at the appropriate level of cognitive processing.

TEACHING TO OBJECTIVES

Once the initial preparation for a successful lesson has been completed, the actual teaching can begin. The instructor should provide information matching the lesson's objective and also ask and respond to questions that will allow the information to be processed, organized and discovered. By providing activities that allow a student to learn, practice or transfer knowledge, the teacher can check what has been learned or not learned. Having this measurement allows the teacher to move to the third component of Hunter's model, monitoring student progress and adjusting teaching.

MONITORING PROGRESS

This step checks the immediate responsiveness of the student to see what they are digesting and what they are not. Some easy methods are posing a basic question or statement and having every student signal the answer, asking for a choral response, sampling individual responses by asking the whole class the question and then calling on an individual and pair teaching where each person is assigned a specific task. The steps to monitor progress and adjust teaching are: **1)** have all students perform some observable behavior congruent with the objective, **2)** check the behavior, **3)** interpret whether the behavior is sufficiently accurate and complete to go on or decide what is necessary to correct errors and, **4)** act accordingly, reteach, move on, allow for practice or abandon.

THE PRINCIPLES OF LEARNING

The last step of the Hunter model of learning is to use the following principles of learning:

1) focus, **2)** reinforcement, **3)** active participation, **4)** closure, **5)** retention and **6)** transfer. Since the essence of the teaching/ learning process is based on these principles, further elaboration is necessary.

FOCUS

Focus is the ability of the learner to stay on task with the intent to learn. There are two "tricks" that help develop focus, one is using the anticipatory set and the other is motivation. The anticipatory set stimulates the students to retrieve from memory the prior skills and knowledge that are relevant to the current lesson. The major job of teachers is to motivate students to learn.

The amount of time spent and materials used in a lesson can increase students' motivation. Addressing the lesson in a unique, vivid or novel way is always a motivator. Last, learning is encouraged when the degree of difficulty in the lesson is appropriate and demands effort. Stress is a motivator unless the stress is excessive.

REINFORCEMENT

The next principle of learning is reinforcement , defined as the interaction of a learner's behavior and an instructor's response that promotes the possibility of increasing the behavior. Reinforcement can either be positive or negative. Positive reinforcement increases a student behavior by adding a response needed or desired. Negative reinforcement increases a student's positive behavior as a result of the removal of a response not needed or desired.

ACTIVE PARTICIPATION

Active participation is the third principle of learning and is the ability of the learner to be consistently engaged in learning. The participation can be overt, you can see or hear it, or covert where it cannot be sensed. The students must be encoding the material, structuring and reorganizing new material with what is already in their memories. Continual participation can be promoted by asking higher order questions, the how's and why's of the whole group before calling on an individual.

CLOSURE

Closure, the next principle of learning, is the ability of the learner to summarize that which has been learned.. You need to "allow the glue to dry" before adding more parts. The active participation of the students in this step helps them to organize the material into a more meaningful whole.

RETENTION

The fifth principle of learning is retention. Retention is the ability of the learner to remember or recall information relevant to the objective. Mnemonic devices are useful cues to use in this instance. The degree of original learning naturally affects retention. If the material has been taught in incremental steps, was relevant and well taught and correct practice was provided, the more likely it is to be retrieved at a later date.

TRANSFER

The last principle of learning, transfer, is defined as the ability of the learner to learn in one situation and to use that learning in a modified or generalized form in another situation. If each lesson is taught with transfer in mind, retention will also improve. One can teach to transfer or for transfer.

Teaching to transfer requires that the past be reached into for something to aid present learning and teaching. One can manipulate the environment, feelings or compare activities to promote transfer. The instructor should generalize, categorize and identify critical attributes of the information to increase the possibility of transfer. Transfer is critical to creative thinking, problem solving and higher mental processes.

CONCLUSION

Hunter's model of learning should be understood as a general set of principles and not as a distinct teaching method. The structure of the model encourages creativity by the naturalist while providing a framework within which to structure a lesson. The professional decides what needs to be taught. Hunter's model can offer direction so the learning/ teaching experience is efficient, effective and enjoyable.

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SELF-GUIDED TRAILS/TOURS: AN ALTERNATIVE

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INTRODUCTION

The superintendents in the Southern Arizona Group of the National Park Service sensed a need for change. All had self-guiding trail booklets, written and produced about twenty years ago. All had gone through numerous revisions and reprints, but were still outdated. The trails in these small areas were almost always the primary and only route to or around the park's major feature. The major interpretive story had to be imparted during this walk. With interpretive staffs cut to bare bones over the years, they were lucky to have one roving interpreter on the trails to answer questions.

We all agreed that basic interpretive information should be available to all visitors free of charge. Since the superintendents and interpreters strongly supported free basic interpretation and were equally adamant about quality—of text, design and production--interpretive trail signing proved to be an excellent alternative. Signs are an alternative compatible with park budgets as well. High standards of quality can be maintained and the costs, amortized over the estimated 10- to 15-year lifetime of the signs will often be less than printing.

SUCCESSFUL TRAIL SIGNING

THEME AND OUTLINE: The park interpretive staff should completely rethink the objectives of proposed or established self-guiding interpretive trails/tours. Why is the trail there at all? If it is the trail to major features, what is the story to impart that is critical to the visitor's understanding and appreciation of this significant site? What sub-themes are important? What information is critical to impart while they are physically at the site? What questions should be posed? Once a theme is established, the interpreter should create an extensive outline, with all major heads relating to the theme and significant points listed under each heading.

STANDARDS: We have developed standards as guidelines for interpretive trail planning.as guidelines for interpretive trail planning. Example: ten stops (signs) are proportionate to the average quarter-mile self-guiding trail. We use a title for each sign to attract the visitor. Body copy should be a maximum of 175 words, or one double-spaced, pica-type page of three or four paragraphs. We use 60- to 72-point type for titles; a minimum of 20 and preferably 24-point type for body copy (which complies with size standards for the visually impaired); and 18-point type for captions. For sign dimensions that give equal weight to text, art, and "air", we generally use outer dimensions of 18 inches high by 30 inches wide. Type selection is limited to a handful of serif and san-serif fonts that provide ease of readability.

WRITERS: We use professional writers to develop the text from the outline provided by the park staff. The writers are provided resource materials from the park library, the outline, and preferred word count. Also, information on preferred taxonomic and/or historic references are included. Clarify in the contract that the writer is responsible for as many revisions as are necessary prior to approval, and an established, prearranged date for delivery of the first draft. This frees the interpreter to provide oversight, assistance, and critical review, but with no demands for the initial writing.

Every draft is reviewed by the park staff and a subject-matter specialist (i.e. archaeologist, historian, botanist) and each stage approved by the superintendent. The Group or Regional Interpretive Media Specialist also reviews each, consolidating comments. The writer also is asked to provide suggestions for appropriate art subjects to flesh out the text for each sign.

ILLUSTRATOR/DESIGNER: Again, a professional is contracted to handle the layout, design and illustrations. We prefer to use one person, proficient in design and illustration, for a more integrated project. The designer is provided a final, approved, double-spaced copy of the text (no changes, *please* after this point), suggested type styles and illustrative subjects, and art references (photographs preferred) for each sign. We request thumb-nail sketches, blueline roughs and final, camera-ready art. After each stage has received the staff and regional coordinator's approval, the project is ready for production.

PRODUCTION: There are several options for production: fiberglass embedment of silk-screened prints; porcelain enamel; or micro-imaged metal signing, similar to anodized aluminum but a more sophisticated process. The first two choices require framing, with two posts; the latter uses one post and no framing. For the media best suited to your needs, we suggest obtaining information and price quotations from companies producing the various types of signing. We have been using metal micro-imaged signing for virtually all trails, for it is subtle, withstands intense sun, is relatively vandal proof, and provides sufficient metallic colors to allow variety.

FOREIGN LANGUAGE TRANSLATIONS: Trail signing provides an opportunity for *all* visitors to equally enjoy the trails or tours, because they can be provided economical translations of the signing. We reduce the camera-ready art to fit 8 1/2 x 11" sheets for file reference copies. These reductions can be translated and typeset in the required additional languages and the copy fit to the text space on the signs. Then they are again reduced (to fold down to pocket size for each panel) and printed. A much less expensive method of providing the information than to reprint trail guides in multiple languages. Since the same art is used on the original English signs and appears in the translation folders, no numbered stakes are necessary in the folder or on the trail. We seldom use numbers any longer for trail interpretation.

INTERPRETIVE INTEGRATION

As signing, interpretive trail information can take its respective (an respectable?) place in a park's integrated interpretive media program. We do not suggest reducing an interpretive publishing program for the sake of signing, only changing the focus. Trail guides, it is argued, provide the visitor with an inexpensive "souvenir" to take home with them. But, usually, they have been provided a free folder with the basic information about the park and its resources. Is it not better to augment the free folders with professionally produced, site specific guides in full color as a sales item, which provides deeper discussions of topics touched upon in the free folders and trail signing?

Our goal should be an array of interpretive publications as sales items, from the general to the specific and technical. Items that will really be meaningful to visitors long after their on-site visits. The printed trail guide is often too specific to a spot, a location, to be anything more than useless when read off-site. Describing and interpreting "the scene before you" is ineffective when the drama of the sights, the sounds, and scents of the place are removed. Have we not all had the experience of perusing trail guides years after our visit, only to read, "look up in the tree in front of you on the second branch on the left" and felt utter frustration?

An Option

So, with utter confidence, may we suggest consideration of trail signing as a viable option for interpreting your trails or tours? Let's free the hands of the visitors, so their eyes, nose, and ears can be more attuned to the actual on-site experiences that *should* be the crux of their memories. Let's provide tasteful, discreet interpretive panels at appropriate locations, answering the questions that are most likely to come to their mind at that moment, thus reinforcing the significance. Let's provide other interpretive media for them to take with them--slides, general guides, monographs, video cassettes--to augment their visit at their leisure and use trail signing to its best advantage, playing its respective role in visitor enjoyment and satisfaction.

PUBLIC INTERPRETATION OF HISTORIC AND PREHISTORIC ARCHEOLOGICAL SITES

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> While it will always be true that archeologists need to communicate effectively among themselves, it now is abundantly clear that unless they also communicate effectively with the general public, and with those making decisions affecting the cultural resource base, all else will be wasted effort (McGimsey and Davis 1977: 89).

Most people support archeology and archeological preservation when they are given the opportunity to learn and understand. This is so because ***the public at large has an inherent interest in archeology and its interpretation***. We are witnessing a frightening increase in the commercialization of the record of human history in the United States. We must, through the cooperation of Federal, State, and local endeavors, provide more education, outreach, and involvement of the public.

KEEPING OUR LEGACY ALIVE

There are particular problems associated with public (popular) descriptions and is to bring the subject into focus. ***The call of the 1990s*** will be how to reach out to the public and involve them in the rich diversity of the American experience. To do that, we must also educate ourselves (those charged with keeping our legacy alive) on the issues.

The authors in this section address the issues and distinctive problems associated with the Interpretation of technical archeological experience related to the problems encountered and suggestions for resolution of the problems.

While there have been many ***innovative interpretive programs***, there is a dearth of written material regarding these programs. We hope, therefore, that the following presentations will help fill this dynamic future programs in the public interpretation of archeological materials.

DIGGING FOR THE WHOLE TRUTH: PROBLEMS AND SUGGESTIONS FOR INTERPRETATION AT NINETY SIX NATIONAL HISTORIC SITE

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ABSTRACT: This paper addresses the problem of the lack of comprehensive archeological interpretation of available information at the Ninety Six National Historic Site. Specific examples where significant information has been ignored in the interpretive program are discussed. Three probable causes for this problem are presented: **(1)** NPS originally designed the interpretive program for the emphasized themes during the Bicentennial Celebration of the mid-1970s; **(2)** exhibit planners were overzealous in their efforts not to confuse the visitor with the complexity of events and archeological remains; and **(3)** local landowners have traditionally respected the significance of the site, especially the ubiquitous Revolutionary War Star Fort component. I conclude that better communication, cooperation, and correlation of efforts among and between archeologists and interpreters is necessary if these problems are to be avoided in the future.
KEYWORDS: archeological sites, interpretation program, Ninety Six National Historic Site, Revolutionary War, Nathaniel Greene, fortifications, exhibits, video program, 18th century

INTRODUCTION AND BACKGROUND

The Ninety Six National Historic Site is administered and interpreted by the National Park Service as an historic site of particular significance for the 18th century. The park is located in the lower Piedmont region of South Carolina, an area that was considered to be at the edge of the Carolina Frontier, but strategically important during the Revolutionary War as a focus of government and commerce (Fig. 1). Park boundaries encompass 500 acres (1230 hectares), which include a number of localities that contain both 18th and early 19th century sites, as well as prehistoric remains.

It has enjoyed its greatest notoriety and has been traditionally promoted as the site of the May-June, 1781, siege by General Nathaniel Greene's Southern Army of the British and Loyalist fortifications which guarded the strategically important Village of Ninety Six. The site has also been recognized, however, as the site of the first engagement between British-Loyal Provincial and rebel (Patriot) forces in the South, and as the site where the first South Carolinian to die for the patriot cause was killed. During the 1750s and early 1760s, Fort Ninety Six was built and occupied to protect an important trading post and was an outpost for Colonial troops along the Cherokee Path.

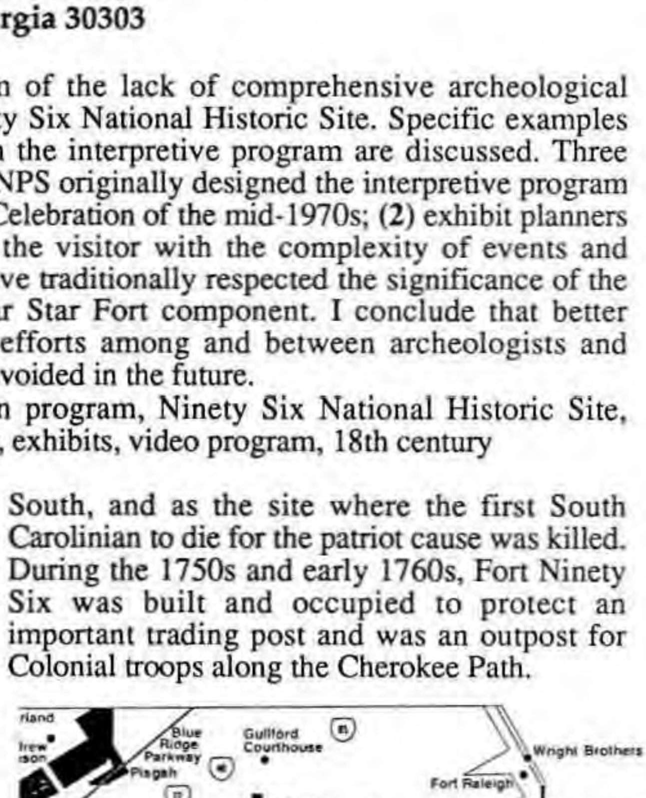

Fig.1. Ninety Six National Historic Site Location Map

The park has an unusually rich archeological potential that has been documented by an impressive series of technical reports. Exploratory investigations and testing by South (1970; 1971; 1972) Holschlag and Rodeffer (1974; 1976a; 1976b; 1977) and others in the 1970s have revealed a treasure trove of archeological information, providing fascinating details on the construction and placement of fortifications, as well as village structures, a courthouse and jail, and other features that surrounded and protected the village and immediate environs.

HISTORIC THEMES

The park's current Statement For Management (an annually updated planning document), states the primary interpretive themes to be:

(1) Develop of the English Colonies, 1688-1763/ Physical Development/ Territorial Expansion (relating to the "Gouedy Complex" (plantation properties, trading post, cemetery, and associated pre-Revolutionary War fortifications), and

(2) American Revolution War in the South (the Star Fort, siegeworks, the Stockade Fort, the Ninety Six Village, and connecting "covered way" communication trenches). Listed as "other themes" are: "The Original Inhabitants" (aboriginal Indian sites) and "Contemporary Society" (the post-Revolutionary War town of Cambridge).

CURRENT INTERPRETIVE STRATEGY

When visiting the park, one is greeted with an interpretive effort that addresses, almost exclusively, the events surrounding a seven month period (December, 1780 to June, 1781), with further focus of attention to the immediate circumstances surrounding the 21-day siege, from May 22 to June 12, 1781.

Thus, many of the significant events and circumstances documented for the "Development of the English Colonies" primary theme and other themes and associated events outside of the immediate events of the 21-day siege receive only cursory treatment or are ignored.

PROBLEMS AND SUGGESTIONS FOR IMPROVEMENT TO THE INTERPRETIVE PROGRAM

As I have emphasized above, the biggest problem at Ninety Six NHS, at least from this writer's perspective, is that the available archeological information is not being utilized within the interpretive program. This is the case despite an excellent series of investigative reports from which the park can draw. Some examples and suggestions for improvement to the current program are given below.

The Pedestrian Trail

WILLIAMSON'S FORT OF 1775. Hastily constructed by patriot forces in November, 1775, this fortification was the center of **"what was probably the first land battle of the war in the south"** (NPS 1975:19). The exact location and structural details of Williamson's Fort of 1775 was recorded archeologically by South (1972). The remains of this fort were found to be partially intruded upon by the construction of the 1780-81 Stockade Fort. A slab monument has been erected near the site of Williamson's Fort in honor of James Birmingham, who was killed in the 1775 engagement and is identified as the first South Carolinian to die for the patriot cause. A burial was discovered archeologically in 1971 (South 1972: 30-33) inside the fort, and is apparently the remains of a soldier who was killed during the battle. This burial *may* be that of James Birmingham.

Despite the fact that South's report provides a great quantity of information on the layout and composition of the fort, and that the battle has been recognized by historians as a very important early engagement of the American Revolutionary War in the South, the 1775 fort and battle *have been virtually ignored* by the park's interpretive program.

The interpretation of this fort is complicated by the fact that the 1780-81 Stockade Fort (see discussion below) was partially superimposed on the 1775 fort, and that the Stockade Fort has been reconstructed on site (Figs. 2&3).

It seems unacceptable that it has received little or no treatment in the interpretative program. South (1972: 54-59) has suggested a credible step-by-step stabilization and interpretation plan for the archeologically revealed features at Williamson's Fort, the 1780-81 Stockade Fort, and Lee's 1781 siege trenches.

This plan would outline or demarcate the alignment of the 1775 fort, while allowing for a reconstructed 1781 fort. However, except for some suggestions for the reconstructed 1781 Stockade Fort, this plan has been ignored.

Fig.2. Exterior embankment and fortification ditch of the reconstructed 1781 Stockade Fort that is superimposed on the archeologically determined 1775 Williamson's Fort alignment.

Fig,3. Interior of reconstructed 1781 Stockade Fort.

Suggestions for improvement: I disagree with statements on this matter by Holschlag and Rodeffer (1976b: 84), who felt that a physical interpretation of Williamson's Fort would confuse the visitor.

On the contrary, given the known historical significance of the 1775 battle site, and the fact that the DAR has placed a monument to James Birmingham on site, many knowledgeable visitors may be puzzled as to why Williamson's Fort, and the events surrounding the 1775 engagement, are not more thoroughly addressed and illustrated. An enhanced and more inclusive interpretive program that adequately addresses the 1775 fort will likely help *remove* confusion rather than increase it.

I agree with South's original (1972: 57-58) suggestion of placing posts which demarcate the position of the original 1775 fence rail palisade line. Where the two forts overlap, the posts can be lengthened or otherwise differentiated from the fully reconstructed 1780-81 Stockade Fort. Clearly marked explanatory signs would assist the visitor in understanding the spatial and temporal relationships for both forts. With the level of detail known through archeology, this task could be easily achieved.

FORTIFICATIONS AND OTHER FEATURES AT THE NINETY SIX VILLAGE. South (1970; 1971) and Holschlag and Rodeffer (1977) have recorded the absolute locations of the 1776-1781 fortifications surrounding the village. These included the town stockades (interior portions are termed "the stockade fort of 1776" by South, and "pre-1780 palisade" by Holschlag and Rodeffer) that were constructed prior to the arrival of British and Loyalists forces and the more extensive 1780-1781 fortifications implemented by the British.

The archeological work in the 1970s and by Rodeffer (1985) also produced evidence of the probable or possible locations of individual buildings (the courthouse, residences, smithy, livery stable, wells, privies, trash pits, cellars, and other outbuildings) and activity areas.

• ***Suggestions for improvement:*** Since the projected alignments and dimensions of the fortifications, buildings, and other features within the village are recorded and could be plotted and demarcated on the ground, NPS should mark their locations and alignments and provide explanatory signs.

KOSCIUSKO'S MINE. The alignment and dimensions of Kosciusko's mine were revealed archeologically and illustrated by South (1970; 1971) and Holschlag and Rodeffer (1976a). South (1972: 106-108) presented a suggested plan and for an exhibit hall. The mine (or tunnel) was dug by hand under the supervision of Count Kosciusko, an engineer temporarily detailed to Greene's Southern Army.

Although a wayside sign has been placed along the walkway near the approximate location of the entrance to the tunnelled chambers of the mine, the visitor is told little about the methods of construction of the mine. The actual mine entrance and position in the ground are not visible. We can conclude that the mine's strategic value and potential as an important component of the American Army's siege of the Star Redoubt (Fig. 4) needs additional emphasis here.

• ***Suggestions for improvement:*** The explanatory sign should be changed or supplemented to include the archeologically revealed information mentioned above. The park should consider providing the visitor with an on-the-ground demarcation of the outline of the shafts and galleries, with accompanying explanation on how it articulates with the complex of offensive siege works.

Fig.4. Pedestrian Trail along siege trenches in front of the Star Fort redoubt.

Caponier (Covered Way) Connecting to the Star Redoubt. There is little or no mention in the current interpretive program of the covered way or caponier (open ditch) between Star Fort and Cruger's 1780-1781 village fortifications (Fig. 5).

Fig.5. Caponier (covered way) alignment marked with wooden fence posts (foreground) and connecting to the 1781 Stockade Fort.

•***Suggestions for improvement:*** Since the alignment and dimensions of this covered way were revealed archeologically by South (1970) and Holschlag and Rodeffer (1977), NPS should mark the location and alignment of this feature on the ground and provide an explanatory sign.

The Jail. South (1971) and Holschlag et al (1978) recorded the locations of the fortifications and other features surrounding the Ninety Six jail. These features include the jail proper, the fortification earthworks around the jail (main ditch and parapet, stockades, palisades and banquettes), trash pits, and a possible caponier. An explanatory sign gives very brief information on the jail, but it is located some distance (200-300 ft.) from the jail site, and does not contain the information revealed during the archeological investigations.

An alignment of posts appear to mark the outline of the jail foundations, but this (post placement and alignment) is not clearly explained or referenced for the visitor. The great distance between the explanatory sign, coupled with the paucity of historical information, serves to hamper the visitor's ability to understand the historic scenario (Fig. 6).

Fig.6. Explanatory sign and fence posts marking the approximate corners of the jail in background.

•***Suggestions for improvement:*** As with the Caponier above, NPS should mark the archeologically recorded locations and structural alignments on the ground and provide explanatory maps and signs.

Lee's Siege Trenches. South (1972) recorded the location of an approach trench that was dug by members of "Lighthorse Harry" Lee's force during the 1781 siege. It was located approximately 100-250 feet northwest of the Stockade Fort. As mentioned above, Lee's trenches have largely been ignored in the interpretative program, with no physical reconstruction or representation.

•***Suggestions for improvement:*** I recommend that the location of this approach trench be demarcated and rendered for interpretation purposes as a system of shallow trenches and parallel embankments. This treatment would closely resemble the current interpretive rendering of the Star Redoubt siege trench alignments described above; i.e., work would involve the removing of topsoil above the trench fill, and throwing the soil into an embankment on the east side of the ditch, as was originally recommended by South (1972: 58).

An explanatory sign or wayside exhibit, perhaps containing a sketch of Lee's men inside the trench just before the assault on the Stockade Fort, should be installed. The sign should also explain why the capture of the Stockade Fort by Lee's men did not result in immediate victory by Greene's Continental Army.

Gouedy Complex. Archeologists have located the archeological remains of portions of the stockades, buildings, cellars, and other features associated with Gouedy's Trading Post and Fort Ninety Six of 1759-1761. South's (1970; 1971) work provides an abundance of data directly relevant to the primary park theme of "Develop of the English Colonies, 1688-1763/ Physical Development/ Territorial Expansion," Sub-themes would include such topics as:

(1) the mid-18th century Gouedy trading post, mercantile, plantation, and colonial frontier trade center;

(2) early trade with the Indians;

(3) Fort Ninety Six and the Cherokee Wars; and

(4) mid-18th century transportation routes.

Archeology has provided additional themes dealing with:

(1) a prehistoric contact occupation site; and

(2) 19th and early 20th century agricultural economies, land use, and domestic developments. The Gouedy Complex features have been totally left out of the interpretive program and exhibits.

• ***Suggestions for Improvement:*** I recommend that the known locations of the mid-18th century features be demarcated and rendered for interpretation purposes along an expanded visitor walkway, and appropriate wayside exhibits and explanatory signs installed.

The park should consider conducting further archeological investigations for better definition of the late 18th to early century features and themes, with eventual incorporation into the interpretive program.

Historic Roads. In addition to ignoring the important archeological investigations of the 1970s and 1980s, the obvious needs for further archeological investigations are also being slighted by the current program. For example, despite the fact that current planning documents identify a need for further research to determine the locations of the important 18th century roads and trails that converged at Ninety Six, historic roads remain undocumented.

THE VISITOR CENTER

Video Presentation. Although short in duration, the eight-minute tape is a definite plus to the interpretive program, because it at least mentions the Gouedy Complex, the 1775 fort, and other park themes other than the 1781 battle.

• ***Suggestions for improvement:*** The presentation should be updated and expanded to include more archeologically revealed information on *all* of the park's major themes and sub-themes.

Brochure. An NPS brochure is available at the Visitor Center, which briefly describes two "non-siege" but continues to leave out the pre-Revolutionary War events.

Displays. The exhibit room, consistent with the nature of the park's overall program, appears to be deficient in the coverage of themes other than the events immediately surrounding the siege. These pluses are somewhat mitigated because the Visitor Center is located *behind* the pedestrian walkway, so that visitors are lured or distracted away from the Center at the outset (Fig. 7).

• ***Suggestions for improvement:*** In addition to adding more information on the themes outside the immediate siege events, the park should consider moving the Visitor Center and video presentation at the entrance to the interpretive trail, rather than behind it, so that the visitor is not as inclined to skip the Visitor Center entirely.

DISCUSSION

One might ask: Was the park's *raison d'etre,* as defined in the Act of Congress (Public Law 94-393) (the "enabling legislation") that created the park, just to commemorate the immediate events that led up to and followed the May-June, 1781 siege? A reading of the enabling legislation reveals, consistent with the established historic themes at the site, that Ninety Six NHS was created to preserve and commemorate the historical significance associated with the settlement of the English Colonies as well as with the Southern campaign of the Revolutionary War.

A central question for archeologists *and* interpreters is why was the decision made in the middle 1970s to focus on the siege to the virtual exclusion of the other important themes at Ninety Six? My inquiries to the National Park Service's Interpretive Design Center at Harpers Ferry, West Virginia, the the chief planners and designers of the original and still current interpretive program, has revealed two probable explanations:

•1. The interpretive program at Ninety Six was designed in compliance with the planning initiatives in the mid-1970s for the Nation's Bicentennial celebration. An emphasis on specific historic events, especially those that had military (Revolutionary War) significance, were typically emphasized by exhibit planners.

•2. The notorious legacy of the 21-day siege was what had made the site (and property surrounding the site) stand out as important to the public eye and to Congress; land owners respected the desire by many not to disturb the site of the siege battleground (preserve the "sacred cow"); and

•3. Because of the documented (through historic accounts and modern archeology) density of objects and complexity of historical themes in the area, planners thought that, to reveal too many details (e.g., superimposed fort alignments, overlapping structural alignments, etc.) would confuse the visitor.

Notwithstanding the original reasons or justifications given for establishing the current interpretive scheme at the park, in my opinion, an unnecessary and unwarranted interpretive strategy has resulted. Key to this point is the plentiful documentary information (especially archeological) that exists for several major features pertaining to ***both*** primary themes that have received very little or negligible interpretive treatment at the park.

These largely neglected features include the 1775 Williamson's Fort, the pre-December, 1780 Ninety Six village (including the Ninety Six jail and courthouse) and related fortifications, and the Gouedy complex (1750s trading post, Fort Ninety Six, Gouedy plantation buildings, and the Gouedy cemetery). Much of this excluded information is located in the several excellent archeological reports produced during the 1970s, especially those that deal with the village and the Gouedy complex.

OTHER OBSERVATIONS

A general observation or concern, albeit secondary in importance to the factors discussed above, is the need for further archeological research in the park. The work would serve to address important research topics and provide historical information that could be used to fill existing information gaps and enhance the interpretive program of the park. This would apply to information needs associated with *both* primary themes discussed above. These subjects of inquiry include:

(1) the locations and nature of features (buildings, activity areas, and fortifications) associated with the Gouedy complex;

(2) outlines and details of the village and related buildings, activity areas, and fortifications;

(3) the locations and alignments of the 18th century historic roads and trails;

(4) the location and nature of Greene's army encampment;

(5) the location and nature of Lee's siege trenches; and

(6) the boundary and nature of Greene's Cemetery.

One crucial element that is missing at Ninety Six is a well integrated synthesis of the archeological and documentary information that incorporates and reconciles the vast resource data base. Rodeffer (1985: 5-14) has summarized the cultural history of the area and has provided a general framework for establishing historic contexts.

Although Rodeffer's report is helpful in establishing general contexts, it does not go far enough in providing a true synthesis of previous archeological work, nor does it provide specific guidelines and recommendations to management for enhancing the quality and accuracy of the interpretive program at Ninety Six N.H.S. A well defined, comprehensive research design or strategy is needed that provides specific guidelines to management for future work emphasis.

CONCLUSIONS

The current interpretive program at Ninety Six can be characterized as a good one *as far as it goes*. As pointed out in the above examples, the failure to use the information generated by competent archeological research and exploration, however, has rendered the present program inadequate and, indeed, unacceptable to the professional community of archeologists *and* interpreters.

This situation reflects what I believe to be inherent differences in perspective between archeologists, armed with technical information and a strong desire to see this information appreciated by the public, and exhibit planners and program designers, who share the desire to communicate with the public, but must also strive to provide an uncomplicated, educational, yet entertaining program.

An ideal interpretive design would be one in which both archeologists and interpretation designers are satisfied with the established program. Compromise from both sides and greater efforts toward communication are the logical vehicles for improvement.

Our efforts should be directed toward achieving the greatest degree of accuracy in our archeological research and in our interpretive planning. We must insure that our efforts are correlated between the reality of the past and explanatory exhibits. As archeologists and interpreters, it is only through what we do today in developing our historic sites that the future can know the past (South 1970: 48).

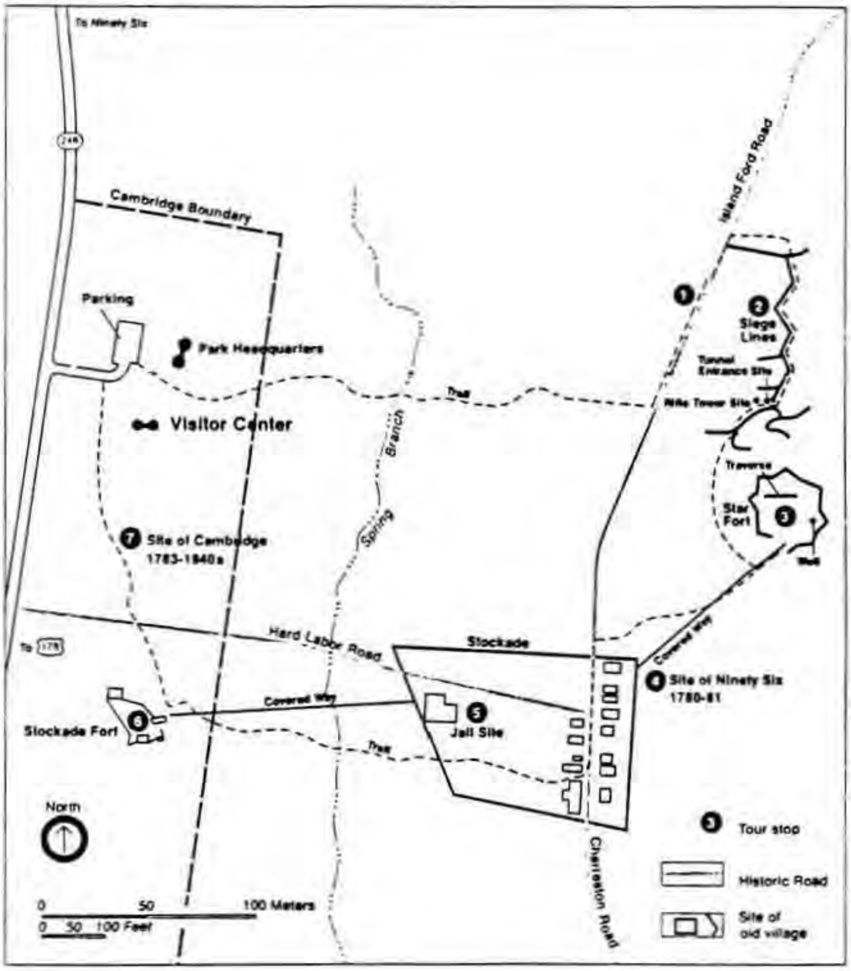

Fig.7. **Map of pedestrian trail contained in park brochure.**

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INTERPRETING OCMULGEE ARCHEOLOGY

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ABSTRACT: With few facts at hand, Ocmulgee's interpreters must personalize a prehistoric landscape, link visitors to an unbroken chain of humanity extending back to the earliest Americans, and inspire lasting appreciation for irreplaceable resources. They must encourage field work and research aimed at providing an up-to-date information base, seek innovation interpretive methods to compensate for reduced staffing, and serve as front line defenders of America's endangered archaeological heritage.
KEYWORDS: Tilden, Freeman, archaeology, prehistory, excavations, cultures, artifacts, data base, Discovery Lab

INTRODUCTION

National Park Service interpreter Freeman Tilden (Tilden 1957) warned that most park visitors seek enjoyment, not instruction. Ideal interpretation implies re-creation of the past, and kinship with it. It should aim to present a whole rather than a part, and it must tell a story.

Tilden quotes G.K. Chesterton's reminder, "... the soul of a landscape is a story, and the soul of a story is a personality." The prehistoric ruin should represent the life and acts of people. Interpreters must somehow convey the notion to the visitor that the ancients who lived there might come back this very night and renew possession. With these admonitions in mind, interpreters at Ocmulgee National Monument strive to put personality into a landscape which tells a saga of diverse American cultures over a vast span of time.

During the 1930's, Ocmulgee became the cradle of Southeastern archeology. A number of widespread cultures and pottery types were named for sites in Bibb County, Georgia, near the park.

Some 2.4 million artifacts, unearthed by large scale archaeological excavations conducted during the 1930's and small "digs" in the intervening years, prove that the 683.48 acres now protected by Ocmulgee National Monument were occupied by an unbroken chain of cultures from the Ice Age until the present. Despite the hugh amount of work conducted during the Monument's infancy, only about 17% of this great site has been excavated and the vast majority of the park's artifact collection has not been analyzed or cataloged to National Park Service standards. Ocmulgee's mysteries far-outweigh the certainties.

OCMULGEE'S MYSTERIES

As a site-specific interpretive data base, park staff relies on: **1**) facts and theories recorded in a few manuscripts and journal articles from the 1930's and 1940's; **2**) *The Ocmulgee Funeral Mound*, by Dr. Charles Fairbanks, a report published by the park's cooperating association; **3**)a few unpublished archaeological reports from the 1960-1980's based on study of percentages of artifacts excavated at the park and nearby areas or tests conducted prior to small construction projects within the park; **4**) the 1959 Ocmulgee handbook; and **5**) data compiled for management document. Additional information applicable to the park's resources is sought in books on Southeastern cultures and reports on archaeological excavations conducted in the Southeast.

Interpreters gaze through the mist of antiquity and try to visualize the long continuum.

INTERPRETING ARCHAEOLOGY AT CUSTER'S LAST STAND

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ABSTRACT: The battle of the Little Bighorn, or Custer's Last Stand, has been an enduring American legend since that fateful day of June 25, 1876. The near mythological proportions the story has assumed recently combined with the public popularity of archaeology resulting in wide-spread public attention to the Custer Battlefield Archeological Project. That attention was focused by an international media blitz that overshadowed the press coverage of the original fight. That overwhelming public interest and how the project attempted to deal with the immediate need for interpretive feedback is the subject of this paper. Battlefields, as a whole, are really ceremonial sites where the public can see, touch, and feel an interpreted version of the past. Often battlefields are perceived in very romantic terms. This is especially true at Custer Battlefield National Monument, where nearly every visitor arrives with a preconceived notion of the story of the Battle of the Little Bighorn. These notions range from the truly literate scholar to the visitor whose misconceptions are generated from having seen one of the many motion pictures on the subject.
KEYWORDS: archaeology, interpretation, visitors, Custer, battlefield, ceremony

INTRODUCTION

Most visitor attitudes can be classified into one of several very general and overly simplified categories. First are the Custer detractors who believe that he got what he deserved, for whatever reason. Second are the Custer apologists who are convinced that Custer's command was wiped-out due to the failure of someone. Often this is the basis for the great cover-up theory. The third category is the "Lo the poor Indian" group, who believe Native Americans were mistreated and this victory was their single greatest triumph, even if it signaled the end of a lifeway.

Obviously no category is exclusively correct or necessarily wrong. That is the challenge of park's interpretation. The park interpreters face a real challenge; the oral presentations must be objective and factual and at the same time they must be ready to politely dispel myths generated by often uninformed but widely held beliefs.

The story of the Battle of the Little Bighorn begins with the enforcement of United States Government policy to return Sioux and Cheyenne Indians to their reservations in the spring of 1876. By late June the army had a good idea where the Indians were located, but not specific information. General Alfred Terry sent Lieutenant Colonel George Custer and his Seventh Cavalry ahead of two converging columns to find the Indians.

THE MORNING OF JUNE 25TH

On the morning of June 25th, Custer let his men stop briefly as they were crossing the divide into the Little Big Horn drainage. They stopped at a place now known as the Crow's Nest, and the Indian camp was spotted in the valley of the Little Bighorn. Custer moved his command into the valley of the Little Bighorn, and in the afternoon divided his men into three groups, Captain Thomas McDougall and his company to guard the pack train, Captain Frederick Benteen led three companies in a southern arc to cut off a southerly escape route, and Custer took the rest of the men toward the Indian encampment.

Before entering the village, Custer split his troops again. Three companies were assigned to Major Marcus Reno. Reno was to follow the south side of the Little Big Horn River and attack the village from the south. Custer would follow the north side of the river, cross and attack at the north end of the village with the remaining five companies. Between them, they would encircle and capture the Indians. Benteen would be to the south and west to capture any who attempted to escape. Reno and Custer paralleled each other on the opposite sides of the river until Reno encountered the village and began the attack. As Reno's men began fighting Custer was seen on the bluffs on the opposite side of the river, riding north.

After initial confusion in the Indian village, Reno's men encountered heavy opposition. They retreated to the woods near the river, and then across the river and up the bluffs on the river's east side. The retreat was confused and disorderly, at best. When fording the river, skirmishers were not put out to defend the forders and the men crossing the river were easy targets for the Indians. Many men did not hear the retreat call, or were not able to move from their position, and were left in the woods in the valley, straggling in over the next 48 hours to rejoin the command.

CUSTER GOES NORTH

The men who made it to the top of the bluffs quickly assumed a defensive position and returned the warriors fire. Custer, meanwhile, had gone north to a ravine now known as Medicine Tail Coulee. Here, he sent back Trumpeter John Martin with a message to Benteen. "Benteen come on Big Village. Be Quick, Bring packs. P.S. Bring packs."Custer was, of course, referring to the ammunition packs carried by the pack train under McDougall's care.

Martin reached Benteen with the message. Benteen followed Custer's trail and found Reno in position on the bluff top. The pack train and McDougal's company followed Benteen and joined the command a short time later. Reno's men wondered what happened to Custer. They assumed that like themselves, Custer and his men assumed a defensive position and were pinned down somewhere to the north. At one point, Captain Thomas Weir led his company to the north in the hopes of finding Custer's men. The rest of the command followed, and they got about a mile, to an area known today as Weir's Point, before being driven back by Indian fire. Some said that from Wier's point they could see dust and smoke to the north, and assumed that was where Custer and his men were fighting.

The Indian fire let up during the night of the 25th, but resumed next morning. Some of the men who had been left in the valley used the cover of darkness to rejoin the command. Reno's men were pinned down the entire day, but could see a line of Indians below them, leaving the village. The weather produced another blistering Montana June day and during the heat, water became a critical factor, particularly for the wounded.

Enlisted men were sent to the river to get water for the wounded. Sharpshooters were set to draw Indian fire during the foray and several trips were made to river. Individual stories of heroism abound. Some of the men who went for water for the wounded and the sharpshooters were later awarded the Medal of Honor for their gallantry in action. Another foray to the river was made the night of the 26th, to recover the body of Lt. Benjamin Hodgson, who was killed crossing the ford. Twice when the Indians got too close to the line. Capt. Benteen formed his men and charged, the Indians were driven back. Capt. Benteen walked around the line, encouraging the men, and keeping their flagging spirits aloft.

THE NIGHT OF THE 26TH

The night of the 26th, Indian fire again slackened and by the morning of the 27th, the Indians were gone. Reno's men saw dust in the distance and then could slowly make out cavalry troops. Several of Reno's officers met General Alfred Terry's and Colonel John Gibbon's command in the Indian village, all wondering where Custer was. Soon the scouting party brought back the news. Custer and his men lay dead on the slopes beside the Little Big Horn River.

Reno's men were detailed to quickly bury the dead. The heat that made water such a critical factor during the battle had not treated the bodies kindly. Individuals were difficult to identify, even to those who had known them well. The regiment did not have much in the way of digging tools and spoons and cups from the mess kits were used to dig. Meanwhile the dead in Reno's position were also buried, and their equipment gathered into a pile and burned, so as not to fall into the hands of the Indians.

The men retreated to the mouth of the Little Big Horn where the steamer *Far West* was waiting. The steamer made record time to Bismarck, North Dakota, bearing the wounded and the news.

WHAT HAPPENED TO CUSTER?

What happened to Custer, how did it happen, and why did it happen are the three primary questions that have come down since the battle. In all 210 men died on Custer battlefield, including Custer and four members of his family. None of the questions are adequately answered to the satisfaction of all visitors to the site even today. The battlefield was set aside by the army in 1879 and came under the jurisdiction of the National Park Service in 1941. The roughly one mile square area of the battlefield set aside in 1879 reflected the societal values of the time for a suitable memorial for fallen heros.

Our societal values have changed through time, and so has the interpretation of the battle to the public. Until 1983 the interpretation was primarily based on the available documentary resources; the remembrances of those who fought with Reno, those who buried the dead, and those of a few Indians who participated in the battle. Interestingly, the accounts of the white survivors and those of the Indians about what actually occurred on the Custer battlefield were often at odds.

WILDFIRE

A potentially tragic wildfire, in August, 1983, virtually destroyed the vegetation of Custer Battlefield National Monument, located near Hardin, Montana. The superintendent recognized a fortuitous situation arising from the fire. With the vegetation gone a unique opportunity existed to commence an archeological inventory of the battle site. Richard Fox, then a graduate student at the University of Calgary, initially assessed the potential for archeological remains on the field. He immediately faced a great deal of media attention as a result of the public interest. As Fox's (1983) reconnaissance report was reviewed by the Park Service for the potential for further work, the public continued to ask many questions. When the decision was made to expand the project to a full scale inventory with limited excavations it was recognized that there would be wide-spread public and press attention focused on the project (Scott 1987).

From the inception of the Custer battlefield archeological project the public interest was unflagging. At the project's beginning it was recognized that some organizational structure was necessary to effectively deal with the public interest. Almost all archeological investigations begin with a research design. The Custer project was no different in respect to the traditional components addressed—research, logistics, analytical procedures, etc., but the plan also included a specific element that addressed the need for a public contact individual to answer the public's and the press's questions.

THE ARCHEOLOGISTS' FIELD INTERPRETATIONS

As originally envisioned the coordinator was to function as a press contact. In this role the spokesperson would meet the press and brief them on the project's status, current findings, and handle initial telephone calls from the press. The coordinator was also to provide the archeologists' field interpretations to the park interpreter for dissemination to the interpretive staff on a daily basis. An early morning meeting was proposed to brief the coordinator on the findings of the previous day, important discoveries, field interpretations, and locations where the project personnel would be working that day.

Once field operations actually began the coordinator role was assumed by the park superintendent in 1984. A literal media blitz descended on the park and the public response was overwhelming. The Superintendent spent nearly 40% of his time in the coordinator role. Because of the press of business a full-time coordinator, a professor of journalism and a project volunteer, was assigned the coordinator role during the 1985 field efforts.

PRESS RELEASES AND WRITTEN INFORMATION

The daily morning briefing proved very valuable. Press releases were prepared as planned and written information for the public was also prepared and taped to the visitor's center front door. Each interpreter was provided a copy of the public information so that all had the same information available. The morning meeting was also useful in that the archeologists had time to review the results of the previous day's efforts and discuss what interpretation would be given to the coordinator. This allowed the information to be fresh but not an off-the-cuff comment or interpretation. The archeologists also used the evening to plan the next day's assignments and work areas. Thought was given to maximizing the archeologists exposure to the public while still being able to accomplish the project mission.

PARK INTERPRETERS FIELD ARCHEOLOGISTS

Questions directed to park interpreters and the accessible field archeologists by the public set the tone for the interpretation. The public was most interested in what types of artifacts were being found and how, not if, but how was the archeological study changing history.

In order to respond to the public's wants several avenues of, what were called, field interpretation were implemented. First and foremost was the daily briefing that was taped to the visitor center entrance and given to the interpreters. The briefing statement contained information on the types and quantities of artifact finds made. An attempt was also made to insure the briefing statement placed the artifact finds in context. If the archeological work was focusing on the so-called Last Stand Hill then the historical information relevant to that element of the battle was also included in the briefing. If the archeological data appeared at odds with the traditional interpretation this was pointed out. No conclusion was made, but the briefing stressed that future planned detailed analysis of all the project data would help to resolve those discrepancies.

A temporary display was also established in the visitors center. The display contained a few traditional archeologists tools, a variety of artifacts found during the investigations, a few photographs of field work in progress, and text to briefly explain the process. This display drew a significant amount of attention and generated numerous questions. The staff interpreters not only used the display as a means to tell the archeological story, but to generate questions to make the point that there were varying historical theories on the battle, and that archeology could help to prove or disprove one or more of those opinions.

Aside from the staff interpreters and the display a third level of interpretation was employed during the project. This was in-field interpretation by the archeologists. Staff interpreters scheduled small group tours to areas where archeologists were working. At the location, usually the site of an excavation for human remains, the archeologist would present an overview of the project and a summary of findings.

The primary focus of the 15 to 20 minute presentation would be on the work going on before the group. Every effort was made to stress the role of historical archeology in the study of historic sites and analytical techniques that would be employed in the laboratory. In essence, the presentation was a pitch for understanding the process of archeology.

When the archeologists were working in visitor accessible areas, visitors tended to congregate to watch the excavations. An archeologist was assigned to provide impromptu interpretations about the locations and answer visitor questions. In numerous cases the interest was so great that a single interpretive event often ran to nearly an hour including presentation and answering torrents of questions.

ARCHEOLOGICAL INTERPRETATIONS

The staff interpreters were well versed in the event history and most had some level of interest in the material culture of the battle. Thus, there was ready-made feedback system with the archeologists and interpreters. This situation kept the information flow in a positive and two-way loop. Archeological interpretations of specific elements of the battle were literally changing daily, and the interpreters were able to put those interpretations to the public within 24 hours.

Early in the project a means to make the public understand the archeological process was devised, and met with great success. This involved explaining that the archeological investigation was like a crime scene investigation. Most people could easily relate to the analogy of detectives (read historians) interviewing victims, suspects, and witnesses and the forensic personnel (archeologists) gathering the physical evidence for a more detailed analysis.

Such forensic analyses provided a more complete picture of situation than oral accounts could alone. The visitor easily accepted the concept that oral accounts could be suspect—someone did not remember correctly, did not see that part of the action, was opinionated, etc.

The archeological data, on the other hand, was physical evidence. It did not lie. The artifacts are the actual remnants of the battle, although their position and context (provenience) had to be interpreted. It was stressed that the archeological artifacts as they were found were deposited as a result of a decision made in the past. Perhaps that decision nor the process of making that decision could be reconstructed with the artifacts and their provenience, but the result of that decision could be interpreted.

THE ARCHEOLOGIST'S POINT OF VIEW

From the archeologist's point of view the opportunity to conduct public interpretation was invaluable. On the one hand it was enlightening to receive first hand the public's perception of what archeology is and what it does toward understanding the past. Secondly it was an opportunity to explain field and laboratory techniques to the visitors. Most archeologist to visitor interpretation was done at an excavation of one of the many marker sites that dot the field and purport to identify where a soldier died in battle. Human remains were usually found at these sites and the visitors fascination with the recovery of human remains provided a target of opportunity to provide the visitor with a basic education on why the study of the bones are important and what a variety of detailed scientific and forensic examinations can tell the archeologist about the people who died in the battle.

As an aside, in no case did a visitor voice an opinion that the excavation of marker sites was improper. In fact, descendants of the soldiers killed at the battle visited the excavations and expressed approval of the investigations.

Follow-up since the completion of the field work has helped to maintain a high public profile for the project. Two books have been published on the archeological investigations (Scott and Fox 1987; Scott et al. 1989) as well as several articles. The books and some articles (Scott and Connor 1986; Scott and Harmon 1988; Scott, Connor, and Snow 1988) are sold at the park visitors center. In addition, the results of different aspects of the work are briefly discussed in the Custer Battlefield Historical and Museum Association quarterly newsletter and the annual slick format publication *Greasy Grass*. Perhaps the most interest has derived from two positive identifications made on some of the human remains.

There were pitfalls to the interpretive effort, as is the case with any project. First is the time the project archeologists spent in interpretive efforts. Adequate time was not planned in the project schedule for this effort. Field adjustments had to be made. Secondly is the public demand for immediate conclusions to be made in the field.

It took a great deal of thought and constraint to answer questions where the data required detailed analysis before arriving at conclusions. It became important to recognize that the public could not have all their questions answered. And it was important to make the public recognize that much more behind the scenes work was required to come to some conclusions about what the data means.

POSITIVE PERSONAL INTERACTIONS

The positive personal interactions between the archeological team, the staff interpreters, and the visitors, as well as the project's public visibility is credited with a 20% increase in park visitation. An added benefit to that increased visitation and project publicity is a 150% increase in sales at the Association bookstore. Association membership also trebled in the same time period. Since the Association funded the majority of the archeological investigations, the archeology was, in a sense, paying for itself.

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SEEING WHAT ISN'T THERE: INTERPRETATION AND REINTERPRETATION OF ARCHEOLOGICAL RESOURCES AT OLD DORCHESTER STATE PARK

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ABSTRACT: Circumstances dictate that archeology and history be gradually interpreted and reinterpreted at Old Dorchester State Park, the site of a colonial village northwest of Charleston, South Carolina. Making technical information intelligible to the public is not considered a problem at Old Dorchester. Rather, it is viewed as part and parcel of the interpreter's duties. The far greater challenge—to the park, the public, and the protection of archeological resources in general—is in teaching about basic archeological concepts to impart a sense of archeological ethics to visitors.
KEYWORDS:association, context, ethics, Old Dorchester State Park, stewardship

OLD DORCHESTER STATE PARK

Old Dorchester State Park is deceptive. Little visible evidence exists today of the history of this site, located on the Ashley River about 24 miles northwest of Charleston, South Carolina. A solitary church tower, a few gravestones, a tabby fort, the remains of two wharves (exposed to view only at low tide), and scattered foundations and piles of brick are the only apparent reminders of a town that flourished there for nearly 100 years.

Founded in 1696 by Congregationalist settlers from Dorchester, Massachusetts, the village of Dorchester on the Ashley developed into a small but vital inland market center, serving the needs of frontier Indian traders and riverside planters.

The westward shift of the frontier, the decentralizing effects of a staple crop economy, and the migration of a number of its inhabitants to Georgia in the 1750s all presaged Dorchester's eventual decline. The last straw came during the Revolution, when British forces devastated the village at the end of a long occupation in December 1781. Dorchester never recovered. Bricks were scavenged from ruined buildings, and the town site reverted to farm and timber land.

Local historians kept interest in the site alive over the years (Smith 1905), but it took the exploratory excavations of Laurence Lee, an instructor of history at the Citadel, to generate real enthusiasm in the late 1950s and early 1960s for preserving the site as a historical park. The state of South Carolina leased the town site in 1960 and acquired it outright in 1969. Spurred by the coming of the Bicentennial of the American Revolution, the South Carolina Institute of Archeology and Anthropology conducted digs in and around the tabby fort in 1972 and 1973. The rest of the town site, however, remained largely unexplored.

COLONIAL SOUTH CAROLINA

Why has a site with the potential to tell us so much about colonial South Carolina gone unexcavated? Part of the answer lies in the nature of the agency that holds the site. Cultural resource management and historical interpretation are still fairly new endeavors to the South Carolina State Park System, which places primary emphasis on providing outdoor recreation. Only within the last three years did

South Carolina State Parks create positions for a district historian and an agency archeologist. Lack of funding provides the rest of the explanation for the lack of archeology at Dorchester.

So how do people see what isn't there? How do they visualize a village that no longer exists and left few visible traces of its existence? We make the best of a difficult situation at Dorchester by gradually presenting information to the public as it is uncovered.

"PIECES OF THE PAST"

The main vehicle for transmitting that information is our "Pieces of the Past" tour. participants mentally reconstruct Dorchester using the available above-ground remnants of the village, evidence obtained in historical and archeological research, and secondary information on such broad topics as colonial architecture, town planning, and trade patterns. There are several advantages—or rationalizations—to this approach.

By presenting information gradually, we give the public a greater sense that historical knowledge is gained through a constant process of acquiring, ordering, interpreting, and reinterpreting data. Participants in the tour become active players in the process, imaging the unfolding scenes as we supply them with the facts and possible interpretations of the facts about Dorchester. We can argue, too, that being able to imagine the past and its succession of changes is far more rewarding than simply being faced with a static reconstruction of a village frozen in time.

Finally, any mistakes we make in our "reconstructions" can be easily and cheaply rectified. The disadvantages of our gradual approach are obvious: We can never present a complete or even near-complete picture of Dorchester to the public, nor can we see the picture ourselves, and our educated guesses about the village may turn out to be wrong.

TECHNICAL ARCHAEOLOGY

It should be apparent, then, that dealing with technical archaeological data is not a problem at Old Dorchester State Park. Little technical information is available, first of all, because so little archeology has been performed at the site. The information obtained in the 1972 and 1973 digs at the fort is not overwhelmingly technical. On the contrary it clear and accessible and easily incorporated into our tours (Carrillo 1973 and 1976).

The conclusions reached in the reports are not all conclusive, either, so their tentative nature fits well with our tentative interpretation of the park. Even if we were blessed with an abundance of technical information, interpreting it should not pose a problem. History is an all-encompassing discipline with no specialized jargon. A major responsibility of a historian-interpreter is to translate specialized information for an educated lay public. Our challenge at Dorchester is in communicating something much more difficult: the basic goals and concepts of archaeology.

Since our examination of Dorchester is by necessity a gradual process, we have to teach the public that what stays underground is indeed protected. Many well-meaning amateurs believe that unexcavated artifacts are somehow lost. These amateurs would be more than happy to recover such "lost" artifacts for us.

Visitors to Dorchester are taught that archeology is concerned more with the discovery of information than with the recovery of individual artifacts. They also learn about the concepts of context and association, that the circumstances in which an artifact is found and its relation to other artifacts nearby can shed more light on the past than can a single artifact wrenched carelessly from the ground.

PUBLIC EDUCATION

We also educate the public about the real value of artifacts. A British soldier's buttons are valuable not so much as military memorabilia but as indications of a long, destructive occupation. Similarly, the shreds of pottery found on the site are not simply pieces of delftware and stoneware to be identified with antiquarian assurance as "North Devon such-and-such" and left at that; they are the keys to dating the site. They can also point out the level of material goods available to the people of Dorchester at a given time, providing suggestions on such topics as relative wealth and trade patterns. The primary value of artifacts comes from their ability to tell us about the past. The last concept we want the public to understand is that of stewardship. Before becoming a park, Dorchester was a favorite haunt of relic collectors.

Sharp-eyed visitors still can easily spot pipestems and bits of pottery and glass poking up through the surface. Collecting is now forbidden, through; even casual casting about for surface finds is subtly discouraged. Our visitors discover that artifacts at Dorchester ar the common property and heritage of the people of South Carolina. The implication that follows, of course, that artifacts at other sites are also the common heritage of all South Carolinians. The only difference is in who holds the site and its artifacts in trust for us.

If the foregoing discussion sounds like a belaboring of the archaeologically obvious, it is because that is precisely what it is meant to be. These concepts are obvious to an archeologist, but they are not so readily apparent to the average person. They must be made obvious to the average person, though, it our efforts to protect and interpret archeological sites like Dorchester are to have any lasting effect.

ETHICS

What it all boils down to is ethics. An educated lay public is fully capable of understanding technical information on excavation methods, artifact analyses, or preservation techniques. Interpreters of archeological sites are equally capable of providing clear explanations of such technical details. That, after all, is part of their job as interpreters.

Teaching ethics is quite another proposition. It is much more challenging that seeing a village as it existed over 200 years ago. Yet we must impart a sense of archeological ethics to our visitors. The best way to do this seems to be through an understanding of the basic aims and concepts of archeology. Understanding the basics—the archaeologically obvious—should be considered a prerequisite to understanding the technical details of digs and artifacts.

If we succeed in translating technical information but fail to convey a sense of archeological ethics along with it, we will miss a great opportunity to educate the public about something beyond our individual sites: the need to respect the many unexplored and unexcavated archeological resources that exist all around us. The consequences of such a missed opportunity should be obvious to us all.

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ARCHAEOLOGY IN THE CLASSROOM: AN ARTIFICIAL ON-SITE EXPERIENCE

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ABSTRACT: A hands-on archaeological dig simulation was created for use in the classroom. The exercise consists of an introductory slide presentation on archaeological excavation methods, a hands-on excavation activity, analysis of data recovered, and compilation and interpretation of the site history. When time allows, discussion of site formation activities can be incorporated. The flexible simulation exercise is adaptable to all audiences. It has been tested successfully on elementary school and university undergraduate students. The simulation provides the excavation aspect missing from many archaeology activities currently being used in the classroom and it enables a "field" experience in situations where actual fieldwork is not possible
KEYWORDS: archaeology, excavation simulation, teaching methods.

INTRODUCTION

Archaeology intrigues most people. It is a discipline which integrates aspects of many disciplines. It is therefore a useful topic for teaching thinking skills (Dyche 1984). Because professionally supervised excavation experiences are not available in many areas, the hands-on aspect of data recovery is frequently not a part of classroom archaeology studies and activities (Holm and Higgins 1984).

Even where excavations are being done, professional, economic and personal reasons deter general participation. An artificial site activity was created to simulate the soil removal and artifact recovery processes and to emphasize the kinds of non-recoverable artifacts (features) that archaeologists use to interpret and understand a site.

EXERCISE OVERVIEW

SITE SELECTION. The "site" design is that of a checkerboard. Only every other square is excavated. Cardboard storage boxes are the three dimensional excavation units for teams of two or three students. A blank checkerboard site map is provided. This map will be filled in with information recovered by the students. A multicomponent "site" is used.

For our purposes, the lower level represents a late Woodland Period Southeastern Indian settlement including post molds of parts of two structures, storage pits, garbage pits, hearths, signs of tool manufacturing and food processing activity and human burial. The upper level represents a Colonial period component with portions of handmade brick foundations, utilitarian and fancy ceramics, gender associated artifacts and activity areas and trash pits.

SOILS AROUND THE ARTIFACTS

Soils around the artifacts are simulated by crumpled plastic trash bags of varying shades of brown. Dark brown bags surrounded by lighter brown bags represent features such as trash pits, burial pits, house floors and post molds. Black bags represent hearths, white bags represent sterile soil. Objects being used as artifacts are placed within the folds of the crumpled bags. To avoid confusion for the novice excavator, the two components are separated by white bags or "sterile" soil. The completed boxes (units) are covered with their lids and than placed on the floor, patterned as one color of a checkerboard. Each unit is numbered in sequence.

Numbered file folders for each unit hold:

1. forms for drawing each level's features and artifacts and recording their associations,

2. forms listing artifacts recovered for each level, and

3. burial recovery forms. Also included are plastic bags, blank labels for each bag, pencils, and rulers. A brief overview of Woodland Indian and Colonial culture characteristics provides unknown cultural background information.

EXCAVATION AND ANALYSIS. After viewing a brief slide presentation on archaeological excavation methods and materials, teams of students randomly select a box and carefully excavate, record and bag artifacts and other contents and record their observations and data. Upon completion of the excavation, each team analyzes their data and makes preliminary cultural interpretations of their part of the site.

The entire class then meets together. On the large site maps of each level, the teams fill in the appropriate square with information obtained from their box. Teams then share with the class the interpretation of their segment of the site. When all teams have reported, class discussion amends and fine tunes the interpretations. During the discussion period, the teacher directs the students toward noting any data associations and relationships that might have been missed, encourages the consideration of reasonable alternative interpretations, and leads the class to a site interpretation that best fits the recovered information.

FOLLOW-UP. Focusing on their own culture and using what they have learned, students are asked to consider:

1) what would remain of their immediate surroundings for future archaeological recovery, and

2) how well would those remaining data tell the future about them and their cultural activities.

EVALUATION OF THE EXERCISE. Formal evaluations concluded that the exercise for university undergraduates and elementary age students is enjoyable and fulfills the goal of providing a hands-on understanding of the excavation, recovery and interpretive aspects of the archaeology based lesson. The major project aspects of the archaeology based lesson. The major project difficulty is the time and labor required for "site" set up. With repeated use of the exercise, set up time was reduced, although still lengthy (about 20 minutes per unit).

One way to deal with this problem would be to divide the class in half and have each half create "sites" to be excavated and interpreted by the other. Guidance about box assembly and a lesson on site formation processes would have to be included as introduction to this aspect of the exercise, however, and that would require more instructional time.

CONCLUSION

Archaeological field methods as well as the thinking skills required for analysis and interpretation are more easily understood by students who have gone through a careful hands-on recovery exercise. The classroom site excavation simulation exercise described above provides a successful hands-on alternative to participation in an actual archaeological dig.

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THE ARCHEOLOGIST HAS DUG A HOLE IN THE MIDDLE OF MY GUIDED WALK!

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ABSTRACT: Archeologists spend time in the parks each summer looking for archaeological sites prior to construction and other development. The presence of an archeologist for even a short period of time can provide a new dimension to existing interpretive programs. The archeological work provides the visitor access to the archeologist and exposes the visitor to an actual archeological excavation. With a minimum of advance preparation, the archeologist can provide a number of interpretive aids. These aids can be used to address archeological objectives such as the role of preservation archeology in the park, archeological activities, local geomorphology, and cultural chronology in the park. Interpretive objectives such as the role of past human activity in the park ecosystem can be addressed. The archeological presentation should be integrated into the interpretive program.

KEYWORDS: archeology, excavation, interpretation, Native Americans, local community, stewardship, guided walks, cultural resource protection

OBSERVATION

For years, archeological field work has been seen as expeditions to remote places. Excavations, as places of mystery and discovery, have captured the public's imagination. Over the past twenty years, there has been an increased protection of all archeological sites on federal property. Now construction and maintenance projects result in small archeological digs. Too often the work is done only to protect the resource with no explanation of the project being developed either for the public or the park staff. The archeological field program, in addition to providing resource protection, can provide the usable information for interpreters and visitors.

GOALS

Even with a small short term project, an archeologist, with the help of the park interpretive staff, can translate his field work into several interpretive goals.

The archeologist can provide usable resource information and materials for interpretative programs The field program enables the visitor to interface with cultural resources at the actual excavation site. Interpretive programs can introduce the visitor to current cultural resource issues and how it relates to the park story. The visitor is able to develop their own preservation ethics pertaining to both natural and cultural resources.

OCCASION

Archeological evaluation precedes construction and maintenance around buildings; along walkways, roadways and trails; at visitor centers, administrative sites and maintenance areas; and finally at concession sites such as hotels and restaurants. If archeological resources are found in the area, full fledged excavations with trowels, grids, screens, and wheel barrows may occur. When these occur in areas of high visitation, every effort should be made to provide interpretation for these activities. In areas where there are already a program of guided or self guided walks, the presence of the archeological excavation should be integrated into existing interpretive programs.

AUDIENCE

The archeologist should be prepared for three audiences, each having a different level of interest in the excavation. The most obvious group is the park visitor whose interest in the project may be broad and needs to be focused by the interpretive presentation. A related audience will be members of the local community, especially ethnic groups such as Native Americans. ⁛ local audience will be more focused, with specific interests relating to the need for excavation and treatment of sacred items, and burials. The third audience is the park interpretive staff itself who will be interested in baseline information, objects, exhibits, handouts, and training opportunities.

INFORMATION AND SKILLS

The archeologist, members of the local community, and the interpretive staff are all contributors to the success of the program. As subject matter professional, the archeologist brings an enthusiasm for the subject matter in a broad historic/prehistoric perspective. The archeologist is trained to see the people behind the artifacts and dirt and has the capability to recreate the human experience. The field archeologists' personal experience relates not only to the romance of archeology, but also to their professional and personal commitment to preserve the archeological record for future generations.

Member of the local community serve to fine tune any presentation. Aspects of local history and personal involvement give the interpretation an immediacy. Local historic or Native views of recent use or ties to the area help to explain apparent paradoxes in land use. Sensitivities to divergent views are heightened through discussion of sacred values.

The interpretive staff is critical for focusing the message of the archeologist, for putting it into perspective of the park mission, and to communicate that message to the park visitor and to the local residents. The interpretive staff is knowledgeable in the integration of the cultural message into the natural ecosystem approach to interpretation of the park. It is important that these excavations not be seen as **"islands of the past"**, but as part of the ecosystem of the park. Excavation serves glimpses at man's past role in the park also serves as a catalyst for interpretation of the "Man and the Biosphere" program.

OBJECTIVES

In Alaska, the archeology in the parks program has identified six immediate interpretive objectives to achieve the goals for archeological field programs. The archeologist can provide information on the prehistory, history, and ethnography of the local area. The archeologist can explain how the field project relates to the history, ethnography, and prehistory of the area.

The archeologist can develop stories about what would be seen if we were here at the time of the site. The archeologists could provide on-site interpretation about the actual excavation project. The interpreter could integrate this archeological information into the park's natural and cultural themes. The visitor will develop their own definition of "Stewardship" of cultural resources.

METHODS

The emphasis has been on developing the message through various means. In addition to direct interaction, methods were selected for readily available materials, reproducibility, low security, weather resistance, economy, and ease of transporting. The tactics for achieving the objectives have included the following techniques;

- display panels
- handouts
- slide presentation package
- short onsite interpretative talk
- interpretive collections (archeological items)
- hands on displays
- temporary artifact display

PRACTICAL APPLICATIONS

The program has been developed through use in three different park situations. The demands of the each situation has resulted in unique solutions and the development of new approaches that have been incorporated in following projects:

- Klondike Gold Rush National Historical Park

Location: Skagway
Facility: Visitor Center in Coastal City/port
Users: Visitors transferring from cruise ships to tour buses/train
Local Resources: Resident railroad community
Interpretive Emphasis: Gold Rush Alaska historic values and the world wide expansion of the industrial frontier in the late 19th century

- Katmai National Park and Preserve
  Location: Brooks Camp
  Facility: Visitor Contact Center in an isolated park area
  Users: Fly-in visitors and fisherman
  Local Resources: Native community
  Interpretive Emphasis: Prehistoric and ethnographic values including maximizing the cultural use of great number of readily available salmon and other resources.
- Northwest Alaska Areas
  (Cape Krusenstern National Monument, Kobuk Valley National Park, Noatak National Preserve)
  Location: Kotzebue
  Facility: Visitor Center in a Bush Town
  Users: Packaged tour visitor and locals
  Local Resources: Native community and community college
  Interpretive Emphasis: Prehistoric and ethnographic values the relation of cultures to a changing forest-tundra boundary

EVALUATION

Effectiveness of the archeological interpretive experience has been evaluated by both park and regional interpretive specialists. Subsequent use of the materials by park personnel have been reviewed by regional archeologists to assure quality control of the factual message.

The most satisfying evaluation has been from the local native community. These comments have resulted in refocusing part of the presentation, making the presentation available in non-traditional ways, and widening the interpretive process to include the results of the archeological project. The last aspect was particularly important because it closed the loop so often left open: Getting the results of the work back to the community. Many times one hears "so all this work was done, but what does it mean?" and "People are always coming here to do studies, we never hear what they found out".

CONCLUSION

The development of a cultural resource interpretive program is recent in the Alaska Region. Many of the parks are only ten years old, and the interpretive programs are in the developmental stage. In many parks there may only be a single interpreter for 100,000 to 10,000,000 acres. In addition to interpretation, the interpreter usually has a major responsibility for law enforcement, game management, subsistence, and natural resource studies.

Through this archeology in the parks program, we have been able to bring cultural resource issues to visiting public and the local community. Most importantly, we have been able to develop, quickly and economically, a set of quality interpretive materials for our seasonal interpretive staffs.

HISTORY IN YOUR BACKYARD, FRUSTRATIONS, TWO: DIRTY LITTLE SECRETS OF PRESERVATION

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ABSTRACT: Saving our priceless resources is frustrating and time consuming. Frustrating because everyone does not share our views, there is never enough money and we can't save everything. We must use our time wisely to inventory and prioritize our historic resources to determine what to preserve. Obtain funding and stretching it as far as it will go by taking care of the essentials first and doing your own research will increase your efforts. An historic site with a "shave and haircut" and informational marker will go a long way to stimulate the public and your governing body to further support your efforts.
KEYWORDS: Frustration, recognition, inventory, documentation, restoration, preservation

INTRODUCTION

When the NAI asked us to submit topics for this conference, they provided a sample paper called, "Frustrations". My reaction upon seeing this was, "How nice, they've already guessed the title of my talk!". I will discuss some of the problems that present themselves in dealing with the preservation of "backyard" history in order to suggest possible solutions.

The first problem is one of recognition. While few people would dare to take liberties with the grand old dames of Charleston, the virtue of some of their vernacular counterparts is less certain. Local properties simply do not *initially* generate the interest and respect automatically extended to Mt. Vernon and Drayton Hall. The problem is further compounded when you consider that most local or regional park agencies like ours have many conflicting interests and do not live and breathe for historic preservation. How then, do we combat these attitudes and proceed with the business of preservation and interpretation?

INVENTORY YOUR PROPERTIES

You can't expect others to respect your properties if you don't know what they are and where they are. Scour every inch of your land holdings, look at old maps and other easily obtainable and cost-effective documents. Put the information together in booklet or notebook form containing brief histories and photographs and distribute to everyone who comes in contact with these sites. Get your supervisors to formally acknowledge the existence of this publication and hold illustrated workshops to familiarize <u>all</u> staff.

PRIORITIZE YOUR PROPERTIES

As my father's old Navy Admiral used to say, "Whaddya want, 10% of 'sumptin' or 100% of 'nuttin'." *Don't* get bogged down trying to save everything because if your agency is like most, not all sites need or deserve preservation and funds will always be in short supply. Save the best or most representative or whatever is most important to your program.

GET SOME MONEY

To continue where the old Admiral left off, "You can't make 'sumptin' outta nuttin'!". Volunteers and that ole "can do" spirit are great, but it's hard to see results without writing some checks. Put together cost estimates and present these to your governing body at budget time. Don't worry too much about precise figures because restorations usually cost more and take longer than initially anticipated.

FIX SOME UP

Nobody really likes to fund old buildings that need a "bath, shave or haircut". You will be told, "Can't be done" or, "It's lasted 100 years and will stand another 100 years". Both statements are malarky. If man built it, man can fix it and no building will last without maintenance and repairs. If you are a small agency, you probably can't afford the luxury of hiring consultants, so spend your money on bricks and mortar where it counts most and do your documentation quickly and cheaply through photography.

You will be amazed at the turnabout in people's attitudes toward a freshly restored building. Don't worry *too* much about criticism, all restorations are going to be criticized by someone, the important thing is to save the building.

INFORMATIONAL MARKERS FOR INTERPRETATION

Put signs up declaring the historic importance of your site for all to see. As a result of your "facelift", you have now "created" history in someone's backyard. Of course, it was there all along, but most were unaware of its existence.

In closing, I would like to summarize by emphasizing early involvement with managers, etc. Remember it is easier to make changes on the drawing board then in the field. Above all, keep your sense of humor, you are going to need it!

HISTORY IN YOUR BACKYARD INTERPRETING A MILL: ITS CONTRIBUTION TO A COMMUNITY

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ABSTRACT: Today the interpretation and writing of history is moving away from the famous, the research into whom has been vast and towards the life of the common man. How he lived, what he produced and what he left behind is central to the question, who are we? Interpreting a mill, an enterprise serving the needs of a community, would better enable us to answer this question then a study of Mt. Vernon and the mansion's impact on the neighborhood. We need to take stock of our surroundings and interpret to our public, the vast historical resources in our own backyards. This study demonstrates the use of a saw and grist mill to present a picture of daily life in Hyattstown, Md.
KEYWORDS: milling, miller, Hyattstown, Hyatt, custom.

INTRODUCTION

Established in the 1920's, MNCPPC has as its mandate, the protection of Rock Creek, a stream that flows through Montgomery County and empties into the Potomac River~ While acquiring parkland, 20 mill sites along the stream valley came to be owned by the Department of Parks.

Montgomery County's location between the Piedmont and coastal plain below the fall line created a positive environment for milling. Mills were constructed to grind bones for fertilizer, pulverize sumac for tanning leather, to clean and beat cloth, extract oil from plants; the variety is amazing. A number of streets are named after mills. Today, there are two standing mill structures left in the County, one is Hyattstown Mill in Little Bennett Regional Park.

HYATTSTOWN

Hyattstown is a small community in the northern most reaches of Montgomery County. A mill on Hyattstown Mill Road has existed since at least 1798, the year that Jesse Hyatt laid out the roadside agrarian community along the "great road", the Georgetown-Frederick Turnpike which connects Frederick, Maryland, to the port of Georgetown. The road was "great" in name only as it changed seasonally from quagmire to dust bowl. It continued to be a major artery to the West however, until the 1950's. Drovers, gypsies, drummers and an occasional celebrity traveled this road from its early days.

JESSE HYATT

Jesse Hyatt's family typified the trend of the era: migration to the West, leaving farms that had ceased to produce a living. Of the four brothers, only Jesse remained in Montgomery County. He sold lots along the road with deeds that provided payment of annual ground rent to him as well, an interesting entrepreneurial concept. The town was officially incorporated in 1809.

In 1804, there were six houses: the number had doubled by 1811. By 1820, the town had grown to include a storekeeper, blacksmith, carpenter, tailor, innkeeper and constable. The existence of the mill represented an industry in the community. The mill functioned as a "custom mill" during most of its existence, grinding wheat and corn for the local populace and sawing lumber. Bypassed by the railroad, the economy depended on surrounding farms.

In 1918, a fire destroyed the mill and over 1500 bushels of wheat. The mill owners did not have the resources to rebuild, so the townspeople eager to retain the facility in their community worked together to reconstruct the mill using siding from a dismantled distillery located upstream. The mill ceased to operate in the 1930's. "There is no neighborhood in any part of the United states without a water gristmill for grinding the corn of the neighborhood" (Jefferson 1786).

THE MILL AND THE COMMUNITY

The mill and the community were woven together. Each depended on the other and both depended on transportation, in this instance the Georgetown-Frederick Turnpike. The fortunes of the mill increased as farmers turned away from tobacco and toward grains. Often villages evolved around mills.

The mill functioned much like a country store or post office. While one errand was being attended to, time was spent gathering and expounding information with one's neighbors while inhaling the unique smells of a mill: a combination of fresh ground grain, feed bags and water. Often the miller was a neighbor, as well, who resided in the adjacent miller's house. The miller enjoyed a position of authority in the community, especially if he owned the mill.

THE MILLER

Not only did he provide a service, he commanded respect as a trained artisan. The miller was certainly a skilled mechanic having to understand intimately the intricate workings of the milling apparatus. Millers generally learned their trade firsthand as apprentices. There were also reference books, *The Young Millwriqht and Miller's Guide* by Oliver Evans, first appeared in 1795.

Everyone required his services for flour, cornmeal and lumber were basic commodities. Sacks of wheat and corn were brought to the mill across a saddle or by wagon. He derived his income from barter, money or toll: a certain percentage of the milled grain in lieu of cash.

Sometimes the grain might be exchanged for flour already ground. Often customers would accept only their own grain, ground to their specifications.

This was the meaning of "custom": your grain, ground to your specifications. As in all commodities. quality was not consistent. At harvest time, the miller worked overtime to accommodate his patrons. Often lines were long and tempers short, but most farmers wanted their own grain rather than an exchange from a communal barrel.

THE MILLER AND THE COMMUNITY

The miller and the community did not always existed in total harmony. Early legislatures enacted laws to protect the unwary from the greedy miller. For instance,square housing around the millstones, provided hidden pockets concealing a goodly amount of grain. Another tactic utilized a concealed spout, siphoning off grain to a private bin.

Grain measures and tolls had to be uniform by law. Remembering that the miller or mill owner often operated a monopoly, made him a powerful individual indeed. The people dependent on the mill however, would be sorely taxed without it. Fire was always a constant threat due to the highly combustible flour and the friction of the millstones. The miller's office, the only source of heat, made it the only comfortable place to conduct business in winter.

A temporary set-back would be a dry spell with water too low to turn the wheel. A frozen mill pond did not present the same problem. Ice could be broken up, but a low water level would close down the mill. The vagaries of nature sent millwrights seeking other sources of power. Not until the 20th century, did the Hyattstown mill convert first to roller machinery powered by steam and later to gasoline.

TODAY

Today, the community survives without the mill which ceased to function in the 1930's. This community is unique in that a number of early buildings survive and the town is still largely undeveloped despite its proximity to Washington, D.C. and the Interstate. Some still remembered the "fine stone ground cornmeal and very good flour" in 1963.

Seeing the stream that barely flows and the old building covered with rusting siding, it is difficult to imagine the awesome power of the once great wooden waterwheel operating the mechanized system of milling or the traffic of customers obtaining the materials of sustenance and the nourishment of human contact.

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HISTORY IN YOUR BACKYARD: UNEARTHING IT

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ABSTRACT: The Montgomery County, Maryland Department of Parks recently initiated an archaeology program designed to inventory and interpret sites within park boundaries. With the help of 75 volunteers, park archaeologists conducted excavations and opened sites to the public, making them cognizant of the history in their backyard. Using examples from our site surveys and two more intensive excavations, we explained the "lives of those everyday, ordinary people" and showed visitors how much of their past has "fallen through the cracks." Our aim was to create an awareness not only of what local cultural resources exist in our county parks, but also to evoke a personal sensitivity to one's own role as volunteer, visitor and county resident.
KEYWORDS: Archaeology in your backyard, archaeological site tours, artifact interpretation

INTRODUCTION

The theme of this workshop is tailor-made for archaeology which *has* to be an integral part of any park system that wishes to have a planned approach to resource management and interpretation, cognizant of the "interdependency of people, biota, water and soils" (MNCPPC 1988). The Montgomery County, Maryland park system is a primary place to begin such research and interpretation because it owns most of the county's Fall-Line stream valleys which have great natural potential for prehistoric and historic sites. However, the public is unaware of most of these resources.

Prehistorically, there are other remains besides just "old Indian trails." Lacking historical "great persons, places or events" does not mean that Montgomery County does not have a history. At the Department of Parks, we are in the process of awakening the public to forgotten things and places.

Through archaeology, we are interpreting to them the lives of "everyday, ordinary people" and showing the public how much of their past has "fallen through the cracks." We are recovering their county's social history.

The public is most interested in what touches their own personality, experience and ideas, so we have physically involved the people. Our 75+ volunteers are involved both in discovering sites and excavating and interpreting them.

"DISCOVERY TREKS"

We use volunteers on "discovery treks," a euphemism for digging test pits. These mostly involve prehistoric sites, of which approximately 80 have been identified on park land. This is mostly just hard work, and in order to sustain our volunteers' interest, we also involve members in "full-fledged" digs. Most of these have been historical and have become the basis for interpreting the past lives of our "everyday, ordinary people" to the public.

SITE TOURS

On different occasions, we have advertised tours of our excavations. We begin with visual orientations, signs designed to explain about the site and also to draw people towards it. Each tour is begun by explaining how we dig. We tell them that archaeology is history from the ground up. We show them that by means of gridded squares laid out over a site, the horizontal measurements record differing areas of human activities (living areas, storage areas, etc.) and the vertical measurements uncover changing types of artifact-bearing soils which chronicle those changes over time.

They see that artifacts are found and recovered by "peeling back" those soil layers, most often by using masons' trowels and, less often, with shovels or dental picks. As they watch, the removed dirt is sifted through 1/4 inch screening to recover even the smallest item. Numbered by square and level in which it was found, we tell them the bagged artifacts are then transported to the laboratory where the long process of conservation begins. We explain that for every hour in the field, three are needed in the laboratory.

SITE INTERPRETATIONS

At the Oakley Cabin Site, we formed chronological and socioeconomic questions. For example: "When was the log house built, and how do its artifacts reflect the lifestyles of the people who lived there?" By showing the public the artifacts, people are linked to the past. Here, we explain how it can be seen that the cabin was built in the late 1860s or early 1870s.

The absence of ceramics and glass from the first half of that century, plus the presence of later shell-edged plates (1860-1870s), Bristol-glazed stoneware (post-1880), datable pressed glass vessels (1870s), a coin (1864) and a patent date on a small gear (1863) all focus on a terminus post quem, the "date before which" the cabin could not have been built, in the late 1860s.

The public visitors also learn is what ceramic types were available to the general public in the last third of the 19th century. What this reinforces is the especially quick spread of newer machine-made glassware.

They see poor, Black, two-room cabin dwellers possessing fluted, stemmed goblets and commemorative cups which, a few years before, would only have been found in more wealthy households. The Industrial Revolution allowed the general populace to enjoy molded and decorative glass without having to pay the price of cut and engraved pieces.

At the Agricultural History Farm Park, our volunteers have also begun excavation of an ice house from a time when the Bussards first bought the property. Such a dig **(1)** helps in its reconstruction as a working farm, **(2)** contributes to an understanding of the lifestyles of its inhabitants and **(3)** aids in interpreting the farm to the public.

REUBEN AND MARY RIGGS

Because we have just begun excavation and have too few artifacts for valid interpretation, I want to discuss how we used the information from the excavation of an ice house at the near by Oaks II tobacco farm to explain the owner's (the Riggs) lifeways.

We begin by asking questions which would pique the interest of our "consumer-conscious" visitors. For example, "Why did its owners, Reuben and Mary Riggs, scions of wealthy families, and themselves the owners of some 20 slaves, live with their seven children in a two-room log house and leave behind cast-off items little distinguishable from the middling farmer?"

By showing the public the related artifacts, they are brought into contact with an earlier time where status was not marked by ceramic or glass items. They are made aware that the excavated milk pans, rural "Gaudy Dutch" bowls, snuff jars, wine bottles with seals and other eighteenth century artifacts are part of the folk customs and tobacco culture that still existed in early nineteenth century Montgomery County.

These visitors could see when and how these customs changes as the switch to growing grains and cereals in the 1840s (and the technology that went with them) brought local people into contact with the more national culture that was the result of the Industrial Revolution, a culture where expensive molded "Gothic" ironstone pottery, new canning techniques, and more varied and high-priced glasswares were the sign that the notion of their "elite" status had taken hold of the family. Such are some of the conclusions and comparisons we hope to reach as the dig at the Agricultural History Farm Park progresses.

CONCLUSION

Such tours allow the public to gain an insight into the workings of historical interpretation and encourages them to apply such knowledge to their own community and family backgrounds. It also heightens their sensitivity to modern folk and national influences which exist today in Montgomery County, Maryland.

This seems to be an age when a great number of people have a special longing to be linked with such continuity. Our aim has been to create a new awareness, not only of what local, cultural resources exist in our county parks, but also to evoke a personal sensitivity to one's own role as volunteer, visitor and county resident.

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TIME AND THE RIVER: BACKDROP TO THE HUMAN STORY

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ABSTRACT: The story of the interpretation for a general audience of archeological and historical research conducted in the Richard B. Russell Multiple Resource Area from 1969 through 1985. This research preceded building of the Richard B. Russell Dam and Lake. Archeologists and others investigated prehistoric and historic sites in Elbert and Hart Counties in Georgia, and Abbeville and Anderson Counties in South Carolina, spanning 11,000 years of human occupation. Emphasis in the public volume is placed on explaining the information so that it will be entertaining and easily understood, while retaining accuracy.
KEY WORDS: Savannah River, accuracy, creative, human elements, storyteller's art, stand alone, photographs.

INTRODUCTION

There is a 28-mile stretch of land along the Savannah River in Georgia and South Carolina that received some of the most intense scrutiny from archeologists and historians that any piece of property has ever undergone. For about 20 years, experts pored over the landscape searching for the secrets of the past.

There was urgency in their work, a pressure that intensified as those 20 years dwindled down to just a few. The Richard B. Russell dam was being built, and would soon create a lake that would submerge much of the area. Whatever researchers didn't find before the dam opened would be lost forever.

Sponsored by the United States Army Corps of Engineers Savannah District and administered by the Atlanta Interagency Archeological Services Division of the National Park Service, the investigations were called the Richard B. Russell Cultural Resources Mitigation Program.

Hundreds of experts from many different fields participated, accumulating knowledge about the environment as well as the people who lived there over the past 11,000 years.

Besides the time-honored archeological practice of digging and sifting dirt to find artifacts, they used the latest technology to analyze ancient plant and bone remains. The sciences of geology, geography, paleontology, biology, botany, and zooarcheology were all represented in the probe of the distant past, while the social sciences were prominent in research into more recent history. Countless hours were spent reading old tax and census records, as well as old newspapers, to track the lives of people long gone. But the effort to document human life in the 52,000 acres of the study area also included those still living. Collecting oral history from the elderly of the black majority population was one of the final components of the project.

THE RUSSELL PAPERS

Such a wealth of knowledge was gained over the years that the results fill thousands of pages in more than 20 extensive reports and many other monographs comprising the Russell Papers. These are technical writings designed for a target audience of scientists and historians already familiar with the argot of serious research and already sold on the importance of the endeavors.

Our task was to take the results of these two decades of research, strip them down to the essentials, and reclothe them in a fashion readily acceptable to a general audience without losing the fundamental integrity of the original material.

The challenge, as you can imagine, was enormous. How should we choose what to include and what to omit? We had no real conception of just how long 11,000 years is and how much can happen in those years until we started to count them down. Unless we did some ruthless cutting, our book would be as thick as the New York telephone directory and about as interesting to read.

A saving grace, however, was a two-volume technical synthesis of the Russell Papers, whose authors, David Anderson and J. W. Joseph, did an admirable job of condensing the information. We relied often on their judgment of what was especially significant in the many individual reports. But, again, their intended readers were scientists and the already converted, so their vocabulary would leave most of our audience scratching their heads.

Encouraged by the scope of work written by John Jameson of the National Park Service, we chose to take as creative an approach to the task as we could muster, beginning with the title and cover photograph, because, like it or not, many people do judge a book solely by its cover.

BENEATH THESE WATERS

We wanted a title with a bit of intrigue, and a photograph that would further grab attention and stir curiosity. We picked BENEATH THESE WATERS, and a crisp, color shot of the Savannah River winding away from the camera, all blue and inviting, like a path beckoning to be followed.

Once we snared interest in opening the book, we wanted to maintain it through every single page. We decided the best way to do that was to use the methods that storytellers have always relied on, to focus on the universal human elements first and foremost. Our intention was to write the story in such a way that the reader would grasp and appreciate the unfolding stages of human progress that are our shared national heritage.

We wanted to take the first people in the area, the PaleoIndians of the late Ice Age, and bring them alive amid the wonders and terrors of a wild, unfamiliar land, and to do the same for all those who followed them, to make them real, as individualistic and important as any of us.

At the same time, we wanted to interweave selected information from the Russell Papers, as well as additional research we conducted on our own. And, we wanted to highlight and explain the methods the experts used, to showcase their efforts, to give them deserved credit, and to build the case for the importance of those efforts. But if we were going to try to teach the reader something, and we intended to teach a good deal, we better be entertaining in the process, a maxim writers from Jim Henson to Herman Wouk, James Michener to Barbara Tuchman, have followed.

THE LATE ARCHAIC PERIOD

Again, we relied on the storyteller's art, using the technique of scene setting to create a visual backdrop. Here is an example from a chapter about the Late Archaic period of 3000 to 2000 B.C.:

> On a clear morning in early spring, a hawk soared over a dense forest. His sharp eyes scoured the world below, searching for a small, careless animal that would provide his first meal of the day. Only the wind disturbed the quiet until the hawk reached an unexpected clearing in the trees. Loud, unfamiliar sounds erupted, and disturbing swirls of gray smoke curled into the sky. Sensing danger, the hunter beat his powerful wings and was soon miles away.
>
> There was too much to do along the river that morning for anyone to notice the retreating hawk. People involved in various activities were scattered across the quarter mile of the gap in the woods. They cleared the land themselves, up to 80 yards wide, by cutting away underbrush and small trees. Bigger trees that could not be felled were stripped of bark as far a man's arms could reach with stone knives. They cut away big swaths of the trees' skin, leaving the tender wood exposed and soon killing them. Upper limbs remained, but their reach was now permanently devoid of leaves, and allowed the sun's full strength to reach the ground.

The stage set, we went on to explain how food was cooked in pits, stone tools were made, and possibly some of the first houses in the southeast were built at this setting called Sara's Ridge in Anderson County, South Carolina.

Then we time traveled into the 1980's to explain how all of this came to light.

> A bulldozer equipped with a sharp blade first cleared the site and pushed back surface soil. Then the crew marked the area into precise meter squares about a yard wide by inserting stakes, creating a

grid for pinpointing exactly which spot might later yield a discovery. Patiently, workers dug with sharp, flat shovels inside the squares, scooping out about four inches of dirt, then sifting the soil through a screen stretched across a wood frame suspended from saplings. Dirt could pass through the quarter-inch mesh, but any stone artifacts would remain on the screen.

> They labored methodically, square by square, without any startling results, then repeated the cycle, starting at the first square and digging down four more inches in a tedious procedure that could not be rushed or avoided. Finally, when they reached between two and three feet below the surface, darkened circles in the soil appeared.
>
> Analyzing their findings, the archeologists speculated that most of the stains represented benches, drying racks for fish and meat, and baffles to block the wind. But the most exciting discovery was a distinct oval of postmolds about seven-and-a-half yards long and five-and-a-half yards wide. This had to be the outline of a shelter.

Besides using scene setting, we added action whenever possible to move the story ahead. What we most wanted to avoid was a dull recitation of facts. So many people resist or even hate reading history because what they recall from their school experience was an endless stream of boring dates, battles, and one-dimensional characters.

Not that we avoided dates and battles. One of the more interesting discoveries in the Russell studies came with the excavation of a Revolutionary War stockade called Ft. Independence in Abbeville County, South Carolina.

Archeologists learned a good deal about the fort, how the headquarters' cellar was built, the unusual placement of the chimney, even the sorts of china used in the building, which was also the commander's residence. They accumulated so much information that in our retelling we risked slipping into list making.

Enter Nancy Hart, and another technique that proved invaluable to us—character development. Just as a movie director sometimes focuses the camera on a single object in a room, then gradually widens the scope to take in the rest of the setting, we sometimes picked out an individual for close scrutiny, then elaborated on that person's era.

NANCY HART

Few were as colorful for this purpose as Nancy Hart, for whom Hart County, Georgia, one of the four counties in the Russell study area, is named. Her involvement with the Revolutionary War coincided perfectly with the details about Ft. Independence and kept the archeological information from becoming too ponderous.

Reportedly six-feet tall, her bellicosity and prowess with a rifle led the Indians to call her Warwoman and to name Warwoman Creek near her home in her honor.

> Married to Benjamin Hart and mother of six, she favored the revolution, and her support of the rebels was apparently known to loyalist soldiers patrolling the area. When six of them stopped at her secluded house in her husband's absence and demanded she feed them, Nancy Hart refused, saying she had only one turkey left. One of the soldiers then shot the bird and again demanded that she prepare them a meal. Outnumbered and goaded by the men's taunts, Hart complied, but she also hatched a scheme to foil the intruders.
>
> Plying them with alcohol, and by some accounts joining in the tippling, she sent a daughter into the woods, ostensibly to fetch water, but really to alert Benjamin Hart of the danger. The family used blasts on a conch shell to communicate over distances, and when the girl gave three blows on the makeshift horn, Benjamin Hart knew he should return and bring help because there was trouble at home.
>
> Meanwhile, Nancy Hart used the soldiers' inattentiveness while they noisily drank and ate to sneak two of their rifles out of reach and through a gap in the wall. She was pushing a third gun through the crack when one of the soldiers noticed and alarmed the others. Quickly, Hart raised the gun to stop them from disarming her and warned them not to move. When one man ignored her order and attempted to take the weapon, she shot him dead. Her daughter returned just then and handed her another of the rifles, which Hart used to hold the soldiers at bay. But again, one or more of the men charged her,

she fired, and another loyalist slumped to the floor, wounded.

> The soldiers next attempted to reconcile with the formidable frontierwoman, but she was implacable and kept them at gunpoint until her husband appeared with several compatriots. They wanted to take the prisoners outside and shoot them, but Nancy preferred hanging them instead. One by one, the five men, including the wounded one, were fitted with nooses, and strung up from trees. Some reports say that the rebels, including Nancy Hart, whistled or sang 'Yankee Doodle Dandy' while the nooses tightened and strangled the soldiers to death.

Luckily for us, and for the American rebels, Nancy Hart didn't stop her efforts with that one brush with the enemy. Accounts say she was a spy, that she dressed like a man and acted deranged so she could move close to loyalists and observe their actions, then report them to General Elijah Clark. And she participated, with her husband and oldest son, in the battle of Kettle Creek on Valentine's Day, 1779, just south of land now part of the Russell Reservoir.

One of the biggest difficulties we faced was translating hundreds of highly technical terms. While the Russell Papers show an admirable display of brain power, and even in some cases, sparkling prose style, most of the writing would be unintelligible to people outside the fields being discussed. And, we have to note, scientists, like the rest of us who pick up pens with good intentions, sometimes fall prey to the temptation to use plenty of what Mark Twain called "fifty cent words," thinking, mistakenly in our view, and in Mark Twain's, that the more syllables a word has, the better.

Our particular favorite is fronto-occipital cranial deformation. Thirteen syllables to describe head shaping, a three syllable practice which some native Americans engaged in because they didn't like the natural shape of the human skull. They bound babies heads to boards for a year or so, until their skulls flattened.

Whenever possible, we substituted short words for needlessly long ones, common terms for obscure ones. Our aim was to use strong, simple language, readily accessible to an intelligent and interested reader who was prepared to think, but not inclined to scrounge through the dictionary after every sentence.

This by no means implies a deliberate effort to "dumb down" the information. Quite the contrary. We intended for and hope that *BENEATH THESE WATERS* challenges the imagination, and opens new vistas to an audience that may be reading about some of the eras described for the first time. But a cardinal rule of nonfiction writing is never to assume knowledge on the part of the reader, and we tried always to remember that as we wrote. While it would have been much easier many times merely to lift entire passages from the technical reports and plop them down in our manuscript, we resisted, and labored over translations until we were sure they were both clear and accurate.

LATE ARCHAIC PERIOD

Being specific was another component of the same quest. For example, rather than just say that trade seemed to increase during the Late Archaic period, we pointed out that within about a thousand years, fiber-tempered pottery spread from the Savannah River to north Alabama, Tennessee, and along the Mississippi River. Red jasper beads from Louisiana showed up in Florida, and soapstone was used in Louisiana far from any source of the rock.

Putting the information from the Georgia and South Carolina research into a broader context was also a recurring theme. If the story was to have universal appeal, then the scope should be much broader than just a 28-mile stretch along a particular river. While the primary emphasis of this public volume was always on the investigations in the target area, we roamed far beyond those boundaries. We read widely, seeking out background sources for the different periods and events. If a report referred to another source, we read the original material, whenever possible.

CIVIL WAR BATTLE AT SHARPSBURG

For example, when a technical report mentioned that a man from the area lost a leg in the Civil War battle at Sharpsburg, we found out about the battle, learning that the Union victory resulted from a stroke of fate when a Union soldier found Confederate General Robert E. Lee's battle plans wrapped around three cigars and gave them to his superior officers. That tidbit is the sort of human interest detail that keeps a reader turning pages, looking for more. We wanted to convey the stories of flesh and blood individuals, not faceless masses, to portray the drama of real-life existence that exceeds any fiction writer's imagination.

Towards that end, where appropriate, we recounted the tales of individual lives, especially those with elements of a good story—hopes, fears, conflicts, triumphs, and defeats. In the chapter about industrial development, for instance, we highlighted a man named William Mattox. The Russell studies included research about seven mills, with fairly technical details about the differences between a breast wheel, a paddle wheel, and metal-encased turbines. The information was important, but might put off the casual reader. William Mattox was tailor-made to add interest because he started as a wealthy investor, achieved great success, then suffered a disastrous setback when lightning struck his uninsured mill. From the pinnacle of wealth and achievement, he sunk to poverty, and was eventually murdered.

PHOTOGRAPHS

Also helping us explain difficult concepts was a collection of photographs accumulated by the archeologists and others in their research. We devoted considerable time and energy culling through these photos, searching for the clearest depictions of techniques and artifacts possible, helped again by John Jameson. Many of the photos we picked out of the individual technical reports and reused just as they originally appeared. They add a dimension to the book that is invaluable. It's one thing to explain the beauty of a prehistoric Clovis spearpoint and quite another to see the glossy black chert with its hundreds of delicate flake marks glinting against a blue backdrop.

Yet, we strove to write descriptions that would stand alone, knowing that while most of us look at a book's photographs and read the captions, some readers skip over them altogether. We didn't rely on the illustrations to take the place of thorough explanations. For example, here is how we described one group of spearpoints, again, keeping in mind that what was most important was the people who made them:

> "The Russell studies revealed that small groups, possibly even lone travelers from eastern Tennessee or the North Carolina piedmont, ventured into the area about 8,000 years ago. They used metamorphic rocks and poor-quality chert found near the river to fashion a spearpoint with a notched stem at the base. Called a Stanly Stemmed, the projectile often appears to have two awkward elbows jutting out from each side.
>
> Perhaps the explorers met others already long established along the river, and were welcomed and treated as honored guests. But they could have been viewed hostilely as interlopers and subjected to attack. Or maybe they passed through unnoticed altogether. Only nine Stanly Stemmed points were found, and their owners left few other clues about themselves, suggesting that they did not linger and may simply have chanced into the territory on an extended hunting trip.

Besides the Russell Papers photographs, we also included original drawings we commissioned from an artist who is also an archeologist, and photographs collected from many other sources, such as the Georgia Department of Archives and History, the National Park Service at Ocmulgee National Monument, the Smithsonian Institution, and the Charleston Chamber of Commerce.

Once we had all these wonderful illustrations, deciding how to display them was the next hurdle. Using an example published by the Department of the Interior, we devised a clean, horizontal make-up, using two wide columns of text, balanced by as many illustrations as possible. We avoided cluttering the page like the plague. No postage-stamp size photographs were allowed. If we picked one to include, we wanted it to be big enough for all its details to show. We avoided using subheads, finding them distracting, and opted for a slightly larger than usual typeface, which is easier to read and more pleasing to the eye.

We strove to make *BENEATH THESE WATERS* as visually interesting as we intended the text to be, but without requiring the reader to puzzle out which caption went with which illustration or where the text jumped to on the following page. And, again, while it would have been simpler and much faster to use fewer illustrations, and to settle for some slightly out-of-focus photos instead of holding out for those of the best quality possible, we held firm. The result is a book with well over 100 photographs, maps, and drawings, in most cases coupled on the same pages with the writing they help support.

CONCLUSION,

In conclusion, we would like to share with you one more passage from the book. We can't claim credit for putting these particular words together, although we would be proud if we had. They come from a man whose family occupied a house in the area for some 130 years, a house they called the "Old Home Place." The passage illustrates how we sometimes used quotations to summarize and explain. In this case, the words of Henry A. Cook about his relatives the Clinkscales and their home and lives as hard-working farmers, eloquently convey a sense of continuity stretching back to when the Indians occupied the same land, as well as the impact a night train had on a boy's imagination.

He remembered his mother spending summers, "putting up pears, peaches, beans, and such things in big Mason jars; in making jams and jellies of the abundant berries and grapes and watermelon rind pickle. The big orchard was loaded with fruit for anyone to pick and eat who wished them. All were in great variety. Their flavors were delicious and there were no poison sprays to be washed off in those days."

He recalled stories adults told about the Indians who once lived there, and how they left "behind all kinds of stone arrow and tomahawk heads, partly buried in the sand, which were a constant stimulus to us to play at being Indians. We had a copy of Ernest Thompson Seton's book, 'Two Little Savages,' which was kind of a bible to us. It was filled with drawings and descriptions of all kinds of Indian equipment: tepees, headdresses, moccasins, bows and arrows. Our fervor to make all of these things was limited only by our extreme youth.

> Another favorite and exciting sport for us was to fish and ride in the bateaux in the Savannah river. But that required grown-up supervision. And sometimes we could persuade them to take us across the river on Tucker's Ferry not far up the river.

And he remembered how,

> My Uncle Zeke took me with him on his tours of the farm where gangs of men were at work in the fields. I rode behind my Uncle on his horse. He was a wonderfully kind and patient man and he became very fond of me, probably because he was unmarried then and had no boys of his own. We acquired a kind of sympathetic understanding that is rare in this workaday world.

Late at night when the play had ended and the grownups had stormed in to quiet the children,

> peace would reign again. Then, in the quiet night, we could occasionally hear the Seaboard Railroad trains over in Georgia blowing for their crossings, on their way to and from Atlanta. I have long ago decided that railroad engineers are really big kids at heart. They love to play tunes on their whistles as they rush headlong through the night. They strike a tremendous response in the hearts of small boys, lucky enough to hear them on a dark night.

As for us, we think we were also exceptionally lucky to have the opportunity to recount those memories as part of one of the most rewarding professional experiences of our own lives.

MILITARY STAFF RIDE: ITS HISTORY, FORM AND APPLICATION IN THE NATIONAL PARKS

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INTRODUCTION

In *John Brown's Body,* Stephen Vincent Benet makes the following poetic analogy between the reality of war and the mere study of military history: If you take a flat map and move wooden blocks upon it strategically, the thing looks well and blocks behave as they should.

The science of war is moving live men like blocks, and getting the blocks into place at a fixed moment. But it takes time to mold your men into blocks. And flat maps turn into country where creeks and gullies hamper your wooden squares. They stick in the brush, they get tired and rest, they straggle after ripe blackberries and you cannot lift them up in your hand and move them. . ." (Benet 1948)

Playing war games, reenacting military engagements and putting yourself in the mind of historic military heroes does not parallel war and it never will. But since the late Nineteenth Century, professional military branches have increasingly recognized the value of tracing the steps others have laid before them on history's hallowed grounds. **My premise** is that the history of the military staff ride, along with its form and especially the application of the event in National Park Service sites is a vital and significant part of our agency's responsibility in preserving this aspect of America's history.

THE STAFF RIDE

First, let us examine the history of the staff ride. By definition, the event consists of "systematic, preliminary study . . . an extensive visit to the actual sites . . . and an opportunity to integrate lessons derived from each." (Robertson 1987) Argument can be made in numerous areas for where and when the first staff ride took place. In the summer of 1888, General H.V. Boynton of Ohio walked the ground at Chattanooga and Chickamauga side by side with his old commander General Van Deerveer. An idea was conceived that day when Boynton noted that "the time has fully come when the participants in the great battles of our Civil War, can . . . study its battles purely as military movements." (Paige and Greene 1983)

The initial staff ride took place in the summer of 1906. Major Eben Swift, Assistant Commandant of the General Service and Staff School at Fort Leavenworth, took twelve officers on a staff ride of Civil War battlefields. These men boarded a train for northern Georgia and retraced events that took place between Chattanooga and Atlanta during 1864. The next four years these events were included in the curriculum at Fort Leavenworth. One of the participants on these early staff rides emphasized the learning process by noting that "All morning we have had discussion of the features of the battle . . . and every evening we have our discussion, a different man having the main discussion each evening." (Luvaas 1988).

TEACHING AND TRAINING

Until World War I the Army made use of this method of teaching and training its officers. The U.S. Marine Corps took the initiative with staff rides during the 1920s. In 1921 at the site of the Battle of the Wilderness, the Marines staged "the largest field exercise of any U.S. force since World War I." A sidelight to that 1921 visit was a large group of spectators including President Harding and his wife.

The following year a similar event was staged at Gettysburg where 100,000 spectators viewed the exercise for the troops. In 1923 at New Market, Virginia and in 1924 at Antietam, Maryland, the Marine Corps staff ride and reenactments took place. These activities met with tremendous public support and general curiosity (Stephens 1988).

The National Park Service role in catering to these groups took the form of special interpretive programs at Chickamauga in 1940. Draftees from Fort Oglethorpe were instructed about the Civil War battle that year and again in 1941. Horse trails were constructed along historic routes especially to accommodate cavalry study. (Paige and Greene 1983)

In 1951 when the Army War College moved to Carlisle Barracks, Pennsylvania, a visit to Gettysburg became tradition. Unlike the old War College staff rides, however, these did not include weeks of detailed preparation, study and analysis. The summer ROTC workshop at the U.S. Military Academy included a visit to Antietam and Gettysburg beginning in 1968. Staff rides on a volunteer basis were sponsored by the National War College at Antietam in the mid-1970s. (Luvaas 1988) The Center for Military History cited three hundred staff rides in the United States and Europe in 1986.

FORM OF THE STAFF RIDE

From the history of the concept, let us now look at its form. What is the process that turns an item in the curriculum into a learning experience? Carl von Clausewitz terms it "critical analysis—determine the facts, establish cause and effect, and analyze the results." (von Clausewitz 1966) In other words, find out what, why and how the event took place and establish its relevance to modern day war. In the U.S. Army Center of Military History publication, *The Staff Ride,* William G. Robertson analyzes the process by dividing it into a Preliminary Study Phase, a Field Study Phase and an Integration Phase. Most staff rides use a similar format regardless of the terminology.

The Preliminary Study Phase is critical. It is this advance study of detail that separates the staff ride from other forms of battlefield tours. Days, weeks or months of preparation and logistical organization are needed to make the event the type of learning experience it is designed to be. Classroom lecture, individual study and discussion are combined in this phase. The details of the battle studied in this phase directly relate to the effectiveness of the staff ride. The Field Study Phase follows where all of the important sites are visited. The leader aims at maintaining student involvement throughout the Field Study. First-person accounts of the combat are utilized when possible. Often during on-site discussions, the formal barriers of rank are purposely broken down, allowing for honest disagreement of why certain events on the field took place. Finally, in the Integration Phase, the group reflects jointly on the experience.

Soldiers gain insight from this type of sharing and impressions can be organized and articulated into a coherent summary. Properly carrying out these three phases will hopefully bring about the desired results. (Robertson 1987)

APPLICATION IN NATIONAL PARKS

Going beyond the history and form of the staff ride is important discussion of its application in our National Parks. The National Military Park idea, conceived as "a rational system, designed to preserve major battlefields for historical and professional study", became reality at Chickamauga and Chattanooga National Military Park in 1890. (Lee 1974) When Major Swift and his twelve officers rode the fields in 1906, they perceived this site as "unsurpassable as a place for interesting pilgrimages or military study." (Paige and Greene 1983)

At Fredericksburg, such intense study and analysis from the professional military has taken place that the Army War College has published its own guidebook. Army staff rides during 1935 and 1936 sponsored by the Army War College emphasized Burneside's failure to select a "correct strategic objective" during this campaign as a critical error in judgement. The notes from this series of staff rides state clearly that "Burnside's objective (the Confederate capitol) was incorrect." One hundred twenty-three years later the Army's warfighting manual contains as one of its Principals of War that the commander should "Direct every military operation toward a clearly defined, decisive and attainable objective." (Holmes and Nevins 1936, and FM 100-5, Operations 1986)

Lee's primary mistakes after his victory was to permit Union withdrawal without opposition. During the Army staff rides of the mid 1930s, troops were reminded that "No defense is complete without definite and well considered plans for the assumption of the offensive when the situation permits." Again quoting the Army's warfighting manual, "seize, retain and exploit the initiative" could easily apply. (Holmes and Nevins 1936, and FM 100-5, Operations 1986)

Chancellorsville has been described as offering the modern soldier the most to think about of all Civil War battles. Despite committing more money, soldiers, supplies and better equipment, the Union forces lost the battle. Today's soldier, facing NATO forces in Europe, must ask "How did it happen?" (Luvaas and Nelson 1988)

REVOLUTIONARY WAR

Revolutionary War battlefields are popular staff ride sites. Smaller armies and battlefields make the logistics of organizing a ride much easier. The simpler formations, tactics and maneuvers are better understood. Staff rides at Cowpens National Battlefield were the norm during the summer and fall of 1988. Six times in a span of several months, Marine Corps, Army and National Guard units coordinated visits with park staff ranging in length from a few hours to several days. General O.K. Steele, commander of the Second Marine Division at Camp Lejune, conducted a staff ride with fifteen regimental commanders in the summer of 1988.

General Steele's visit to Cowpens was designed as an informal learning session for each commander. It was also born of his like long interest with this particular site. General Steele saw the events of 17 January 1781, along with the Park Service's willingness to coordinate the event, as an outstanding opportunity to teach his subordinates valuable lessons on the art of military leadership.

Tactically, Cowpens has long interested those who study military history. General Daniel Morgan's double envelopment of the British that routed the enemy with 80% losses has been called "perfect" in the annals of military engagements. With a degree of good fortune, exceptional control of his troops, and the ability to see and seize the opportunity, this American general handed the British perhaps their most devastating loss of the war. "The late affair," wrote Cornwallis, "has almost broke my heart." Mark Boatner writes that "Morgan's victory must rank as a classic, any way you look at it." (Boatner 1976)

The U.S. Army's warfighting manual, has detailed explanations of envelopments and double envelopments, calling them "the basic form of maneuver." Banastre Tarleton saw this maneuver executed flawlessly against his troops at Cowpens. (FM 100-5, Operations 1986).This reminds us of the application of the staff ride to National Park Service areas commemorating, preserving and interpreting military history. We have an expanded role as educational facilities for America's armed service units.

CONCLUSIONS

We have looked at the history, form and application of professional military staff rides. Stephen Vincent Benet's poem, I think, contains significant truth. You ***can*** indeed take a flat map. . .you ***can*** move wooden blocks strategically and the thing ***will*** look well. The blocks will behave as they should. But commanders try to move real, live soldiers as easily as those wooden blocks. Then the creeks and gullies get in the way, the blackberries envourage straggling and it takes time to mold men into wooden blocks. How others have succeeded or failed at this is what the staff ride concept is about. A 20th century general, standing on historic ground trying to reconstruct the events in the mind of his historic counterpart is more than fun and games. In our National Parks, serious analysis is being applied to modern day national defense.

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RUSSIAN ARTIFACTS FROM SITKA NATIONAL HISTORICAL PARK: A CONSERVATION CHALLENGE

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ABSTRACT: The Russian Bishop's House, was built in the Colonial Capital of New Archangel (Sitka) in 1842 for Bishop Innocent (Veniaminov). In 1972, with the acquisition of the historic house, the National Park Service began a fifteen year $5 million restoration/preservation project. Preservation work on the collection has provided the conservation lab with an opportunity to examine closely objects from two areas and cultures, St. Petersburg and Russian-American. The information gained through research and the innovative techniques developed are now used to help interpret the historic house and its furnishings, a little known episode in American History.
KEYWORDS: Russian Bishop's House, conservation, restoration/preservation, innovative techniques, interpretation.

THE RUSSIAN BISHOP'S HOUSE

The Russian Bishop's House, Sitka, Alaska, is one of the few remaining structures dating from the Russian colonial period in America. After completion in 1843, the house served as a residence, chapel, and religious training school for Alaska's first Orthodox primate, Bishop Innocent (Veniaminov) now St. Innocent, Evangelizer of the Aleuts and Apostle to America.

The building and furnishings were acquired in 1972 by the National Park Service from the Orthodox Church of America. More than fifteen years of research and planning have gone into the restoration of the log structure and the preservation of the furnishings. Few Russian documents were accessible. This and many other problems were encountered in trying to interpret the historical, archeological, and architectural data.

The project goals were to restore the Bishop's House to its 1853 appearance, adapt the first floor for exhibits, and refurnish the second floor. The building and its exhibits would not only serve to interpret the Russian-American Company and the life of Bishop Innocent (Veniaminov) but would also focus on the construction of the building. For more than forty years the rugged Bishop traversed Siberia and Alaska by dog sled, kayak, and on foot to establish rapport with the natives.

While the building was being restored, all the furnishings remaining from the Bishop's occupancy were shipped to the Division of Conservation's laboratories at Harpers Ferry Center, Harpers Ferry, West Virginia. There, conservators preserved the paintings, metals, textiles, ceramics, ethnographic materials, and furniture, always keeping in close consultation with personnel at the Alaska Regional Office and the park.

TREATMENT OF THE OBJECTS

Treatment of the furnishings from the Russian Bishop's House has been one of our most interesting and challenging projects. During the course of conservation treatment, a number of interesting factors came to light that currently are being interpreted at the site.

Working closely with the Division of Historic Furnishings at the Harpers Ferry Center, we have uncovered exciting information during the course of this project, our first experience working with objects of Russian or Russian-American origin. One of the documents acquired by Curator Kathy Menz is an 1847 inventory ordering a shipment of the furniture by the Bishop from St. Peterburg to Sitka, Alaska. The inventory describes a sofa and six chairs upholstered in gold-colored plush.

Most of the furnishings treated in the labs are directly associated with Bishop Innocent. Some of the objects reflect skilled craftsmanship, while others are more simple in design and craftsmanship. The vestment cabinet, desk in the Bishop's study, altar, several lecterns, and throne are made from woods native to Alaska, such as spruce, and Alaskan cedar. They are of unsophisticated design and quite possibly could have been made by the BISHOP himself. Oral history does suggest that he made some of the furniture.

THE CONSTRUCTION OF THE FURNITURE

The construction of the furniture is unusual. In disassembling the loose joints in several of the arm chairs, we found the seat frame to be a separate unit. Its sides are dovetailed and attached to the interior surface of the chair sides with wooden dowels. The side units are of mortise-and-tenon construction with mahogany veneer over red pine. Each unit consists of a leg, back post, side rail, arm, and arm post.

When separated, multiple chair side units will stack flat. The upholstered chair back and the back splat also nest well against each other. The veneered side of the tenon ends of the back and back splat had a finish applied prior to assembly. This is unusual since glue does not adhere well to a finished surface.

I do not believe these factors are typical of Russian furniture construction. Rather, they indicate that the furniture was produced to be shipped disassembled and then assembled on arrival. A mahogany veneered settee and pedestal table also employ construction techniques that allow them to be disassembled. These include threaded wooden dowels and nuts in the table base and handmade iron bolts, which screw into housed, threaded metal plates in the arms of the settee.

Many of the construction techniques of the set of side chairs revealed themselves during the disassembly of the weakened joints. However, the joinery at the front leg where the side rail and arm post meet remained puzzling because the joint was tight and covered with veneer. Since the curator was planning to have an armchair reproduced along with twelve side chairs, we decided to X-ray this portion of the chair, to provide the craftsman complete information on the joinery.

X-RAY

The X-ray revealed that the wide tenon of the front leg extends up through the mortise of the seat rail. This tenon is roughly notched out at the top to form a mortise for the tenon of the arm post. This type of joint appears somewhat crude and unusual, but it has withstood the test of time.

Removal of the top layer of black oilcloth from the chairs revealed another layer of upholstery. This is unusual because, when a piece is reupholstered, the upholsterer generally removes the previous layer before applying the new upholstery. Under the second layer we found yet another fabric. Upon removing the third layer we were amazed to discover the original gold-colored plush, a warp pile with both the pile and base structure being mohair.

This fabric is the oldest in-place upholstery we have seen in the furniture lab. We assume that because it was in Sitka, it was beyond the reach of experienced upholsterers. Probably the worker did not want to disturb the complex layer of plush, linen, and horsehair stuffing, so he simply tacked the reupholstery over the old. Unknowingly he thereby preserved a rare example of mid-19th century Russian upholstery.

INNOVATIVE INTERPRETIVE TECHNIQUES

Original upholstery was found on only four of the five chairs in the set. Because of the value of the inherently fragile fabric remaining intact, we decided to leave the fabric in place and simply to cover it with similar reproduction fabric. For this purpose I devised a technique for attaching the reproduction fabric in a nonintervening manner. This technique involves the fabrication of a Plexiglas insert that fits between the wooden members of the slip seat frame.

Clips were produced from brass mending plates and 10/32 machine screws. The clips are attached to the Plexiglas with a nut and washer. To install it, the insert is pressed down into the seat frame and the brass clips are turned with a screwdriver. When turned, the clips slide under the frame. The Plexiglas insert also helps to reform the seat by pushing the sagging stuffing back into position. Velcro hooks are then adhered to the Plexiglas using a hot glue gun with adhesives 3764-TC.

The new upholstery was cut and formed to fit over the original and Velcro loops were sewn around the edges. As a protective barrier a layer of Stabliltex, a woven monofilament polyester, was laid over the original material. The new fabric was placed over the Stabiltex and pulled into position by pressing the Velcro tape together. For interpretive purposes the original seat fabric and handforged tacks can be revealed.

ORIGIN AND IDENTIFICATION

Wood samples were removed from some of the artifacts and sent to the Forest Products Laboratory in Madison, Wisconsin, to determine which objects were constructed in Sitka and which in St. Petersburg. The more sophisticated pieces are made of mahogany veneer with a secondary wood of red pine. Those more simple in design and construction were produced from spruce and Alaskan cedar.

THE BISHOP'S THRONE

From the seat of the Bishop's throne a few feathers had worked their way around the edge of the secondary linen cover. We wanted to be able to determine whether the feathers came from Russia or from Alaska.

The feathers were sent to Zoologist Roxie Laybourne at the U.S. Fish and Wildlife Service, who identified them as Mallard and Common Merganser. Unfortunately, both species are found in both Alaska and Russia. Determining their origin proved impossible.

A large cabinet from the inner sanctuary of the chapel was used to house the priest's vestments. On the side of the cabinet we found among many coats of paint, two narrow stripes of water-soluble blue paint (protected by shelving) over an earlier coat of oil-based green paint. A similar blue paint was the earliest paint layer found on one of the stools located next to the Bishop's throne.

HISTORICAL ARCHITECTS

Historical architects at Denver Service Center, who were working on the restoration of the structure, had already determined to paint the walls of the sanctuary this same blue. With the evidence we now had, we decided to paint the furniture the same color.

We determined that this blue paint is a calcime paint consisting of whiting, glue, prussian blue pigment, and water, and we replicated that formula. Calcimine is a good paint for conservation purposes because it can be removed easily if necessary.

Glued over the joints between the back boards on the vestment cabinet are strips of rag paper cut from ledger sheets. Each strip is 2 1/2 inches wide. The paper strips were probably adhered over the joints to keep dust from entering through the cracks and settling on the vestment robes. Written in ink on the paper strips are early dates, places, and names in Russian script. Our staff photographer took photographs to record the data for later translations of the documents.

In the Bishop's House similar strips of paper cut from the letters and journals of the Russian Orthodox Church and the ledgers and reports of the Russian American Company are glued over the seams and cracks between the spruce log walls and planks of the ceilings. These also being translated from similar photographs.

ASSISTANCE FROM SOVIET UNION AND THE ORTHODOX CHURCH

During the final stages of the project help was sought from the Soviet Union to provide information not available in the United States. Also assistance was requested from the Orthodox Church for information and suggestions concerning the Chapel and Sanctuary.

THE SUMMER OF 1987

In the summer of 1987, Ms. Nina Vernova, Curator of the Petrodvorets State Palace in Leningrad and Mr. Alexei Schenkov, Architect Historian from the All-Union Science Research Institute in Moscow, met with us to discuss the restoration and furnishings of the Russian Bishop's House. Sessions with them conducted in both Harpers Ferry and Sitka were productive in answering many questions from how to tie on a slipcover to proper placement of a setting of furniture.

During the installation of the artifacts in August 1988, Father Joseph Kreta, chancellor of the Diocese of Alaska and dean of St. Herman's Seminary in Kodiak, Alaska, and Father John Perich, pastor of St. Herman of Alaska parish in Wallingford, PA., were called into the project. Father Perich had been working for several years in conjunction with the National Park Service on locating, acquiring, and identifying Russian religious artifacts from the period 1847-1853.

Both were an enormous help in the placement of the religious articles in the chapel and house. On October 18, 1988, the Russian Bishop's House was dedicated and the Chapel was reconsecrated for use by the Orthodox Church on special occasions.

TRANSLATIONS REQUEST

Recently a Russian delegation visited the Harpers Ferry Center. It was headed by Mr. I. G. Ivanov, Chief Specialist for Scientific and Architectural Center for Town and Rural Settlements Planning and Development, Moscow. Mr. Ivanov's assistance was requested in translating the inscriptions located on the following two objects:

VENEAMINOV'S BEDROOM

On exhibit in 1842-1853 Veneaminov's bedroom is a wooden bed made of ash. The mattress support is a wooden frame. Linen stretched across, is stenciled with a Russian seal. On the reverse side of the frame there is a paper label with the letters "AP" and "St. Petersburg" in ink glued onto the wood.

In the adjoining guest room we have placed a large seal-skin bag. During treatment of the bag our ethnographic conservator located a Russian inscription on the back of the bag. To record the inscription ultraviolet photographs were taken by the staff photographer.

"NEAR THE CITY OF NARVA"

According to Mr. Ivanov's translations the lettering around the perimeter of the seal reads BARON A SHTIREITS' FLAX WEAVING FACTORY and the wording below the seal means "near the City of Narva," a town located in Northern Russia.

The top inscription on the seal-skin bag is RYE RUSKS (hard crisp rye bread), used as ships stores and the HEH he believes are initials. Accordingly, I might speculate that unless the Russians eat rye bread in bed, we may have the bag exhibited in the wrong room!

CONCLUSIONS

The work on the collection from the Russian Bishop's House has provided us with the chance to examine closely objects from two areas and cultures, St. Petersburg and Russian-America. New avenues of cooperation between the Soviet Union and the United States are opening up as a result of the collaboration in the project.

TRAVELING EXHIBIT

A traveling exhibit from Harpers Ferry Center to Russia and one in return from Russia to the United States is under consideration. The Sitka project has created a better curatorial understanding of the objects and I hope, in a small way, has helped to better relationships between our two countries.

The information that came to light during the conservation treatment of the artifacts is now being used to help in the accurate interpretation of the Russian Bishop's House and furnishings.

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HUGO AND IT'S AFTERMATH ON CHARLESTON'S HISTORIC STRUCTURES

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ABSTRACT: Hurricane Hugo affected an estimated 1.8 million people, 12 persons died, 270,000 lost their jobs, 64000 were left homeless and damage estimates ranged as high as 5 billion dollars.
KEYWORDS: hurricane, interpretation, Charleston, history

HURRICANE HUGO

At the invitation of the Mayor of Charleston and the Historic Charleston Foundation, Inc., Associate Director Jerry Rogers asked the Park Historic Architecture and Preservation Assistance Divisions to organize a relief effort. September 27, five days after the storm, an NPS preservation team was on-site. Thirteen preservation specialists were rotated into Charleston for the next six weeks.

The Charleston Hurricane Assistance Team (**CHAT**) focused on two major areas: (**1**) assessment of hurricane related damage and (**2**) dissemination of technical information through workshops.

Based on the damage observed, the first wave of "**CHAT**" members developed a damage assessment survey form. Working in pairs, team members performed a visual inspection recording information on exterior storm related damage and class "C" cost estimates. Electrical, mechanical and plumbing damaged was not assessed. Survey efforts were completed on 144 of the most architecturally and historically significant structures and damages were estimated in excess of 10 million dollars.

SURVEY DATA

Based on the survey data five major categories of storm damaged occurred. They included:

1. Loss of roofing surfaces (slate, metal, tile, etc.)

2. Collapse of unreinforced masonry (chimneys, gabled walls, parapets)

3. Window damage caused by wind pressure, airborne debris and shutter failure

4. Loss of mechanical and electrical systems to flooding and rainwater infiltration

5. Saturation of interior finishes from flooding and rainwater infiltration

Survey information gathered by the team was entered into computers and used by Charleston city officials to analyze the type of damage incurred by any subgroup or structure. Data was retrieved by queries and sort commands for surveying a particular need. For example, storm damage to slate roofs consisted of 40 percent of the total damage to roofs.

HISTORIC CHARLESTON FOUNDATION

Working with the Historic Charleston Foundation the team participated in a series of preservation workshops focused on non-destructive methods of drying out water laden structures and methods of repairs to historic features and systems. Other areas of assistance included the preparation and distribution of specifications, technical literature, NPS preservation briefs on preservation issues and locating suppliers of building materials.

Team members also met with homeowners at the office of the HFC or on-site. During the six weeks over 1000 homeowners were offered technical assistance.

(This paper is a compilation of trip reports and CRM bulletin articles prepared by "**CHAT**" members with coordination from Chief Historical Architect Michael Adlerstein.)

"SAFETY IN NUMBERS: THE HERITAGE EDUCATION FORUM AND CURRICULUM-COORDINATED PROGRAMING IN THE CHARLESTON AREA"

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ABSTRACT: The Heritage Education Forum, a consortium of over twenty museums, historic sites, and nature preserves in the Charleston area that provide curriculum-coordinated programing, offers a model for other regions that are rich in cultural and natural resource organizations. The members of the Heritage Education Forum cooperate to promote themselves to local schools by developing programs geared to curriculum goals, offering teacher workshops, and conducting ongoing dialogues with educators and administrators.
KEYWORDS: education, Heritage Education Forum, networking.

HERITAGE EDUCATION

The term "heritage education" demands a broad definition in the Charleston, South Carolina, area. A wide variety of cultural history can be interpreted here—wars, plantation life, historic architecture—but that alone cannot completely encompass the heritage of the South Carolina lowcountry. The natural history of the region has influenced human history; and human action, in turn, has affected the natural environment. Cultural and natural history are inseparable in the lowcountry. The resources used in interpreting the lowcountry's heritage reflect the region's diversity: historic buildings, gardens, parks, libraries, nature preserves, and art museums. They a common goal of interpreting the lowcountry's past and present. A common thread linking these agencies is membership in the Heritage Education Forum, a consortium of cultural and natural resource agencies that provide curriculum-coordinated programs for school children.

The Heritage Education Forum—HEF for short—grew out of a need for cooperation and coordination among several Charleston institutions that offered educational programing. Initial meetings late in 1981 defined broad goals and objectives, but the real impetus for organization came a year later when Charleston was chosen as one of four sites in the nation for a Smithsonian Institution teacher workshop. The workshops strengthened ties between schools and local institutions that provided educational programs to supplement the school curriculum.

In response to the need and the Smithsonian stimulus, HEF was formed late in 1982.

The regional teacher workshop, held on November 10, 1984, attracted over 200 area educators. A trade fair exhibition and methods classes taught the teachers how to use community resources and hands-on activities to expand the range of their normal classroom instruction. The *Compendium of Curriculum Coordinated Programs*, a handbook for teachers describing the programs of HEF's

The *Compendium* and its accompanying poster were distributed to schools throughout the state to acquaint teachers with curriculum-coordinated programs available in the three-county area of Charleston, Berkeley, and Dorchester. HEF completed a slide/tape presentation introducing the member institutions and their programs for viewing at teachers' conferences and in-services.

The Heritage Education Forum's main mission of networking is an information exchange for museum educators, community program directors, and school personnel. Networking between educators allows for cooperation and complementary programing including Charles Towne Landing State Park and the Old Exchange; printing a cooperative brochure; and the Charleston Museum and the Gibbes Museum of Art working together to offer a program. The latter enabled students to take a class on the history of Catawba pottery at the Charleston Museum and to follow up by taking a class on pottery making at the Gibbes Museum of Art Studio.

Networking and cooperation are beneficial to the community as well as to the institutions. Hands-on educational opportunities for the public are increased, and public service has prompted greater involvement of the school system in HEF.

HEF's activities continue as it strives to meet its members' needs. The *Compendium* is being printed this year to include 18 member institutions and 9 support institutions across the state. A flyer has been printed and distributed this year which contains a list of members, their phone numbers and brief descriptions. It serves as a ready reference for teachers for field trips.

On October 20, 1990, a teacher workshop sponsored by HEF, the Smithsonian Institution, and the National Trust for Historic Preservation was offered to afford teachers and administrators the opportunity to survey the extensive range of educational activities available in the community, state, and nation. This one-day workshop and trade fair introduced educators to various methods and techniques for utilizing facilities more effectively with their students.

Currently HEF is working on a teacher recertification project with the Citadel. The class will offer educators either graduate credit hours or recertification points. The objective is to make teachers more aware of community resources so they can use these resources in their classrooms.

HEF's long-term goal is to ensure that the institutional members offer quality educational programs to the students of the Charleston tri-county area. Monthly meetings held since 1982 keep HEF striving toward this goal. The strong institutional commitment to education has been the foundation of HEF.

The short-term goals are not as obvious. The question being continually asked is if there is life for HEF after whatever project in progress (the *Compendium* reprint, the Smithsonian teacher workshop, or the NAI conference) is completed. The stumbling blocks exist because each institution is involved in its own goals and has trouble finding time for HEF. But the fact that major tasks are accomplished helps members realize HEF's strengths.

The cooperation and networking help each institution with its individual needs. Members from the different institutions are members of national organizations such as AASLH, ALHFAM, AAM, and NAI. The information gathered from these organizations helps all HEF members with their professional development.

There is a constant exchange of ideas on problems commonly encountered. The larger institutions as well as the smaller ones contribute equally when such situations are discussed as organizing volunteers, dealing with chaperones, or writing guidelines for field trips.

The member institutions remain stable, but personnel within each institution change. When a new representative does arrive, it takes several meetings for that person to become familiar with HEF projects, procedures, and goals.

HEF suggests the following guidelines:

1) Identify community resources available for the creation of a cooperative organization;

2) identify goals for the organization;

3) make commitments to the organization through the use of bylaws, regularly scheduled meetings, agendas, and minutes; and

4) learn from your cooperative organization's successes as well as its failures.

GOING, GOING, SAVED !

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ABSTRACT: The Annapolis Registered National Historic Landmark District is 240 acres of land laid out by Royal Governor Francis Nicholson in 1694. Today the Historic District includes 17 architectural styles of three centuries and is one of America's fines urban areas. How has so much been preserved? Historic Annapolis, Inc. a non-profit preservation, educational and historical organization was founded in 1952 to preserve the character and values of this area. As preservation successes unfolded, a tour developed to teach and encourage preservation in an urban environment.
KEYWORDS: preservation, Historic District, adaptive use, role playing

INTRODUCTION

When you approach Annapolis by way of the Chesapeake Bay and the Severn river an exhilarating vista meets the eye, the Annapolis Historic District. You see the 1695 baroque city plan created by Royal Governor Francis Nicholson with two public circles, State Circle and Church Circle. Streets radiating from the circles tell a story of a city plan, a seaport and the beginnings of urban civilization. Since 1695 Annapolis has been the capital of Maryland, the county seat of Anne Arundel County, the home of the U.S. Naval Academy and St. John's College.

The early growth of Annapolis ended in the 1930's when the steamboats left the city. Before Route 50 was completed in 1961 linking Annapolis to Washington, D.C., it was a two hour journey by back roads from our nation's capital to Annapolis. During this early period Annapolis saw decline, degradation and buildings carelessly altered. The majority of residents wanted change in their city. Change to them meant tear down the build anew.

In 1952 Historic Annapolis, Inc., renamed in 1989 the Historic Annapolis Foundation, was formed. The members believed Annapolis had urban character under the accumulated tarnish. Espousing the value and the fragility of the city's historic core, they set out to reveal and preserve the city's character and values. Their techniques to preserve were varied and innovative.

DAVIS-CARROLL HOUSE

For example, the 18th century Davis-Carroll house was saved from demolition by moving it from its commercial Main Street setting to the campus of St. John's College. It was adapted from residential to office. To prevent the further destruction of the waterfront area, a demonstration program was begun. Two 18th century buildings were saved by purchase and adaptively used. In the early 1960's through research and public awareness three historic blocks were saved from demolition by the U.S. Naval Academy's expansion program. In 1965 the historic core was made a National Historic Landmark by the U.S. Department of the Interior.

A volunteer walking tour group had been formed in 1955. Its purpose was to communicate the city's rich and varied history. Guides were trained to lecture on the usual popular attractions, the Maryland State House, several house museums and the U.S. Naval Academy.

As the 1960's Progressed, Annapolis saw an incredible amount of activity, much of it threatening to the urban environment. Historic Annapolis met challenge after challenge in its advocacy role. In 1969 a long sought after goal of Historic Annapolis was realized when an Historic District was established by a city-wide referendum.

THE PRESERVATION PROGRAM

The preservation program gained prominence as buildings and streets were saved. Diverse groups wanting to see preservation in action made their pilgrimages to the city. For example, students from Columbia University's School of Historic Preservation, and enthusiast from Miami, Florida, wishing to save Art Deco architecture, businessmen from western Maryland and Pennsylvania wanting to see the economic benefits of preservation and other groups from small and large towns asking how to establish and Historic District, came to Annapolis.

The need for a special group of walking tour guides emerged. By the eve of America's Bicentennial, a preservation tour became one of the organization's thematic tours. A cadre of guides interested in preservation were educated and trained to advocate our methods and interpret our preserved environment.

Education included preservation history in Annapolis and lectures on architecture in the city. It became the policy to walk to the historic site for reinforcement after each lecture. All lectures were taped and made available to guides for over-learning. Preservation vocabulary was stressed. Revolving fund, easement, lease-back arrangement, preservation data bank and streetscape became second nature to the guides.

HISTORIC DISTRICT COMMISSION

To improve visual observation guides participated in architectural and preservation hunts searching for architectural elements. One of the most popular training techniques was role playing illustrating the work of the city's Historic District Commission. Participants were divided into groups each with an identity of a group involved in the application process, i.e. Historic District Commission, Planning and Zoning Commission, local chapter of the American Institute of Architects, Historic Annapolis, residents associations and the applicant. Problem was posed to the group. Maybe a resident had applied to the Historic District Commission for a demolition permit to tear down a building on historic State Circle. The building had no architectural or historical significance.

The applicant wished to replace it with a Phillip Johnson type glass house. This role playing encouraged the exchange of ideas. Each group must justify their conclusions. They learn one of the most pressing problems in an historic area, incorporating contemporary design into the historic fabric of the city. Too they learn the role and the decision making process of private and governmental bodies in the city's environmental decisions.

1965-1976 the house of William Paca, a signer of the Declaration of Independence was saved from demolition and its environment was saved. Preservation guides learned first hand the techniques of preservation.

GEORGE WASHINGTON'S WALK THROUGH ANNAPOLIS

Children were not forgotten in preservation touring. A George Washington's Walk Through Annapolis was designed. In a two hour tour children saw the Annapolis George Washington had seen during his more than fifteen visits to the city. Each child was given an 18th century identity. They wore a name tag with a name printed on it of a person Washington would have met on the streets of Annapolis. Guide training for the children's tours included communication skills, questioning strategies, role playing, inventory study and preservation on an elementary level.

CONTEMPORARY CHALLENGES

Success and power often breed new problems. Contemporary challenges to the environment had to be included in our teaching. This includes government and private development, the removal of green space, the use of non-biodegradeable material, architects erecting out of scale structures to celebrate their egos, politicians thinking short term and newspapers not understanding the most serious and trivializing the the most complicated.

The preservation tour continues to unfold and to be reevaluated. As discoveries from urban archaeology and archival research continue, layer upon layer of richness is added to the interpretation. The climax of the preservation tour came October 13, 1987 when 150 participants of the International Council on Monuments and Sites, professional from 68 countries met in Washington and choose Annapolis for a study tour. In Annapolis they were introduced to the American preservation experience. Preservation guides interpreted Annapolis: the waterfront city, a colonial port, a center for pleasure boating, a major institutional center, a city of neighborhoods, a city developing.

EFFECTIVE INTERPRETATION DURING REHABILITATION OF A SITE'S PRIMARY RESOURCE

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ABSTRACT: Recent rehabilitation of the Truman Home, Independence, Missouri, and the Lincoln Home, Springfield, Illinois, demonstrated effective interpretive techniques for enhancing visitor understanding and support for such projects. Repair at the Truman Home did not eliminate guided tours, but interpreters had to adjust to the work. At the Lincoln Home, visitors could not tour the primary resource for over a year. A variety of creative programs and activities compensated for the loss of access. In both cases, interpretation enhanced visitor understanding and appreciation for historic preservation. Special efforts encouraged visitor support for similar care with historic structures back in their hometowns.
KEYWORDS: historic preservation, Lincoln Home, rehabilitation, Truman Home

INTRODUCTION

Visitors arrive at historic sites with precise expectations. In particular, they expect to experience the primary resource through a guided tour or some other system of access. During major rehabilitation projects, historic sites encounter serious visitor disappointment. In recent cases at the Truman Home and the Lincoln Home, interpreters had to respond to the rehabilitation of their principle sites. With different approaches, each site developed programs that satisfied visitor expectations and gained their support for historic preservation.

HARRY S TRUMAN HOME

From November, 1985, until November, 1986, the Truman Home exterior underwent rehabilitation. Workers carefully removed many layers of old paint from the entire structure using heating devices. In addition, they repaired or replaced deteriorated elements of historic fabric, especially porches and siding. Although guided tours continued throughout the project, interpreters frequently had to modify the exterior and interior tour routes to accommodate the work. They used their explanation of tour route changes to illustrate and discuss the standards and processes of historic preservation involved in the project.

DEMONSTRATE TECHNIQUES

To demonstrate techniques, they used samples of deteriorated woodwork that the project had replaced. By working in close contact with the contract supervisor, interpreters gained knowledge sufficient to explain the project. Dialogue with project officials also enabled interpreters to restructure the guided tour to accommodate the changing location of the work. In addition to site visitors, interpreters explained the project to the local community by contacting media and nearby visitor centers.

They stressed the reasons behind the project, as well as the fact that the home remained open for tours. Instead of an inconvenience, the project evolved into a valuable means of increasing the public's awareness and support for the principles of historic preservation that could apply to historic sites and structures back in their hometowns.

Furthermore, visitors developed a greater understanding for the National Park Service's decision to limit the number of visitors on each tour in order to prevent long-range damage from unlimited visitation.

ABRAHAM LINCOLN HOME

The Lincoln Home restoration was a long term project involving interlocking disciplines, the most subtle of which was interpretation. With the science of invention and the art of planning, interpretation was used to replace visitor shock and disappointment with knowledge and appreciation.

The Lincoln Home was closed to the public from May, 1987, to June, 1988, by structural work that had been ten years in preparation. Careful study of everything from existing conditions, the aging process, and visitor impact told a structural story which needed careful repeating.

During the project, this story was carefully infused into alternative experiences which included a filmed tour of the home, a variety of tours of the Lincoln Neighborhood and its historic structures, and many special theater presentations.

VISUAL TOURS

Direct, visual tours explained archeology at Lincoln Home and its nearby buildings. Open fabric investigations and core specimen examples were explained and illuminated. Media releases, direct mailings, brochures, handouts, billboards, and feature articles brought the message to the visiting public and interested people and groups in the local area. As always, the most effective method of interpretation was a direct, personal style.

ONE-TO-ONE INTERPRETATION

One-to-one interpretation provided both challenges and refreshment for all. Interpreters used sympathy and humor with their knowledge of the project to create an experience with Abraham Lincoln. By provocation and revelation, they enabled visitors to pass beyond the closed doors of the home. The entire process was so well orchestrated that complaints turned to praise, and apprehension to appreciation. Visitor promises to return after the project became fact. The challenge and opportunity of this unique period in the home's history brought a renewed spirit of creativity and enthusiasm within the interpretive staff that carries forward to this day.

APPLICATION

Interpretive strategies used at the Truman Home and the Lincoln Home during their rehabilitation projects can apply to other historic sites facing similar situations. Interpreters must begin with a cooperative dialogue with project officials to acquire the knowledge necessary to explain the program.

Interpretive techniques should educate visitors in the principles and processes of historic preservation. In particular, visitors should develop a comprehensive view of preservation that accepts the temporary inconveniences of a rehabilitation project.

When visitors cannot have any access to the primary site, interpreters must develop meaningful alternative programs that convert visitor disappointment into support for the project. Interpreters should work closely with local media, visitor and convention bureaus, and visitor information centers to inform the public about program changes caused by the project. With such strategies, interpreters can make a genuine impact on people's perception and support for wise management of our nation's cultural resources.

THE SHOW IMPORTS THE ARGUMENT: RECREATING 1631 AT AGECROFT HALL

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ABSTRACT: "Belike this show imports the argument of the play" wrote Shakespeare. The Agecroft Living History Program attempts to "import" the argument that visitors to an artifact-related museum can better understand their own place in history by understanding the people who built, made or used our artifacts. Agecroft was transplanted to Richmond from England, and the first-person program portrays the people of Agecroft Hall as it stood there in 1631. The program addresses seemingly contradictory interpretive problems in time, space, mission, methodology and relevancy in encouraging the visitor to become the investigator, discovering for himself life in 17th century Lancashire.

KEYWORDS: English life, first-person living history, research, dialect, training, interpreters, implementation, relevancy.

"Belike this show imports the argument of the play"
***Hamlet* Act III, Scene**

THE CREATION OF THE AGECROFT LIVING HISTORY PROGRAM

The creation of the Agecroft Living History Program came about in an attempt to address a complicated set of interpretive and educational challenges. The program attempts to reconcile differences in time, place, methodology and mission statement to relate 17th century English social history to a modern, and largely uninformed, American audience.

Agecroft Hall is first mentioned as a place name in the parish of Eccles, Lancashire, England in the year 1376. The house stood about six miles from the center of Manchester. Little is known of the first thirty years or so of Agecroft's existence. From 1402 to 1926, however, an amazingly complete record of the house and land surrounding Agecroft exists in the form of wills, inventories, court documents, warrants and commissions in the Lancashire Public Record Office and the City Library in Manchester. Agecroft must rate among the best documented houses in Northwest England, if not the country.

Briefly, the house was built and maintained by a family called Langley which occupied Agecroft until 1565. At the death of Sir Robert Langley without a male heir, the estate was split between four daughters, one of whom, Ann, married, about 1570, a young man named William Dauntesey. Daunteseys continued to occupy the house for the next three and a quarter centuries. During this time, the area around the estate changed drastically. Nineteenth century Manchester was the heart of the English industrial revolution, and the surrounding countryside became a vast landscape of factories and collieries belching forth smoke, soot and noxious fumes.

AGECROFT THREATENED WITH DEMOLITION

Standing in the path of industrial development, Agecroft was threatened with demolition in 1811 and again in 1852. The exploitation of neighboring coal seams created vast open pit mines within yards of the old Hall. By the 1920's, the owners of the house had determined that the coal was more valuable than the building and Agecroft was again scheduled for demolition. Hearing of the condemned building, T.C. Williams, Jr., a wealthy industrialist from Richmond, Virginia, purchased the house and had it dismantled, transported to his family estate (which was in the process of being turned into one of the first planned communities in the United States) and re-erected on twenty-three acres overlooking the James River. In his will, Mr. Williams provided for the house and grounds at Agecroft to become a museum.

AGECROFT ASSOCIATION

The Agecroft Association opened the house to the public in 1969 with the mission of interpreting the social history of late 16th and early 17th century England using household objects and decorative arts in sympathetic room settings inside the house itself. Thus, for twenty years visitors have been offered a glimpse of English life using the old estate as a backdrop. In 1989, it was determined that the approach of using artifacts and fine art was not sufficient in itself to meet the mandate of interpreting social history established in the mission statement.

A variety of programs have since been implemented to address the issue on a broad spectrum: lectures by recognized experts, classes on the decorative arts and on history and culture, estate walks which detail the entire history of the house and museum, architectural and garden tours, as well as the traditional educational programs and special events. One component of the program is the Agecroft Living History Program.

AGECROFT LIVING HISTORY PROGRAM

The decision to implement a first-person living history program was made in an attempt to offer an intense, multi-sensory experience to the visitor. From the outset, it was understood that the program would never completely explain the Agecroft story. It was intended to meet a carefully defined and narrow goal, namely, allowing the visitor a participatory experience in investigating the world of our 17th century ancestors.

Secondly, wherever possible, we wanted to relate what the visitor experienced in his or her living history encounter to our collection of original artifacts. It was always intended that our program should be as closely collection-related as possible.

Since the house retained its original name "Agecroft", the staff decided early on to adopt a very site-specific technique, rather than a generic "somewhere in England" one if the documentation and research would support such an approach. Happily, as noted above, a wealth of material exists on the site; enough to encourage us to pursue the goal of developing a Lancashire-based program. Once the decision to interpret an historical Agecroft was made, the location of that place in time became paramount. Could we choose an historical time frame which would meet all of our requirements of relating social history in a defined geographical location, our collections policy and a commitment to make the program relevant to 20th century Americans?

We felt limited to the years 1588 to 1660 by our collections policy. That provided a frame of reference, at least. We had a will and, particularly, an inventory of the estate of William Dauntesey (son of the first Dauntesey owner) which gave us a very clear picture of the estate in 1637. The only documentation which compared in importance was a will of 1565. Looking at the issue of social relevance to the 20th century (and, honestly, at the cost of reproducing the clothing and reproduction artifacts for the late 16th century gentry) we opted for the latter period.

THE LIFE OF AGECROFT, 1631

From the first, the decision was made to focus on the life of Agecroft revealed not through its owners alone, but through the lives of the majority of the manor's residents, who were laborers and yeomen. Any portrayal of the life of the 17th century rural English gentry alone would be so foreign (not to mention historically inaccurate) to our modern visitors that it soon would degenerate into parody rather than reality. The predominantly rural/pastoral nature of life in 17th century England demanded that we focus attention on the life of the manor, not on its gentle inhabitants alone.

We also wanted to focus on "normal" life on the manor, not on life disturbed by major political or military upheavals, which all but eliminated the years 1639-1660. After much deliberation, the year 1631 began to present some interesting possibilities. We knew quite a bit about the estate in 1637, and felt that some extrapolation was allowable; we knew about conditions of inflation and depression in the area due to fluctuations in the international wool trade; we knew about the many "tramping poor", homeless men, women and families who went about the country begging for their livelihood; we knew of concerns in England about the role of government (in the person of King Charles I) in the lives of its citizens, and, lastly, we knew (as would our characters) about the settlements in Virginia and New England, which gave us a link to the house's present location. There were two factors, however, which tipped the scale in favor of 1631.

LANCASHIRE

Lancashire was a predominantly Catholic area of England. Our area of the county, however, was a staunchly protestant enclave. In 1628, a locally-born, French educated priest, Father Edmund Arrowsmith, was found, tried and executed for holding mass in the county. Thus, the opportunity to explore an area in religious turmoil was appealing.

Also, in 1631, the King, in another attempt to raise funds for his treasury, attempted to force the English gentry to accept knighthoods or pay a fine. William Dauntesey of Agecroft was among the gentlemen of Lancashire who refused the proffered "honor" and paid his fine. This event in 1631 was a major turning point in attitudes of the country gentry toward their sovereign, Charles I. The year 1631 was adopted.

After setting ourselves in place and time, the continual process of research began in earnest. We needed to know as much as possible about the county and locality we "lived" in. What did it look like? What plants and animals grew there? What was the weather like? What trades were pursued? Several works and studies were especially helpful, which may be found in the reading list. John Speed's *Theatre of the Empire of Greate Britain* (1610) was invaluable as were period maps like the one drawn by Christopher Saxton in 1577 in the Agecroft collection.

Primary and secondary sources found in the proceedings of the Lancashire and Cheshire Antiquarian Society and publications by the Chetham Society greatly aided our efforts, as did the University of Manchester. The retention of a trained researcher in the Manchester area to work with the Salford Historical Society and other sources helped to build up a body of information which enabled us to begin to flesh out our knowledge of the period and locality.

LANGUAGE

Language is one of the most important tools in any interpreters bag, and, of course, 17th century spoken English was very different from our own. Lancastrians were, and are still, readily identifiable by their speech. It was felt to be vital that the modern visitor experience something of that difference. Working from my own background of dialect study and works by 19th century scholars and antiquarians like John Harland, T.T.Wilkinson and John Roby, who all recorded aspects of the Lancastrian dialect, as well as that of modern linguistic scholars like Stanley Ellis and Martyn Wakelin, we were able to produce, what we feel to be a reasonably accurate and acceptable approximation of 17th century Lancastrian speech.

Conversations with Mr. Len Travers, formerly Director of Interpretation and Dialect Consultant at Plimoth Plantation, "fine tuned" our efforts. Language/dialect study continues to be an inexact science, but one which we feel greatly enhances our visitors experience and emphasizes the difference between "then" and "now".

With research well underway, and a definite program in mind, the time came to recruit a staff to interpret the information to the public. It was felt that the program, in its infancy, would not profit from, nor demand, a large number of interpreters. We chose not to advertise the positions generally, but the local history community was advised that we were looking for a small number of volunteers for living history at Agecroft.

Interviews were conducted and out of the applications received, ten individuals were chosen for a training schedule of six months. Guided individual readings supplemented twice-monthly formal training sessions on a wide range of topics from religion to folklore, from dancing and amusements to politics.

DIALECT

Dialect was heavily stressed and individual sessions were held to facilitate learning. During the course of the training, two individuals dropped out, and the first Agecroft living history program was presented with eight interpreters. None of our interpreters is paid for their training, though they are reimbursed for actual program hours. None receive any reimbursement for clothing or equipment expenses. Clothing and personal interpretive "impedimenta" is strictly controlled by the professional museum staff.

A costumer who constructs many of the clothes worn also advises on others and has a part in the final approval of all clothing construction details before any period clothing is worn in public. We also require that our first-person interpreters not appear in 17th century clothing in other Agecroft programs. In this way we preserve some of the illusion necessary to first-person interpretation.

Interpreters were assigned characters who actually lived at Agecroft in 1631. Of the initial group, two represented members of the Dauntesey family, two represented domestic servants, one a local merchant visitor, two agricultural servants and one a tradesman and tenant of the manor employed by the family. This established a mix of views on life and the issues of the day as well as reflecting the agricultural nature of the area.

The training nearing completion, an occasion to "debut" the program was selected. Again, a local occasion, which allowed many aspects of 17th century rural life to be explored and offered active involvement for the visitors was selected. "Eccles Wake" a very local celebration honoring the patron saint of the parish church was chosen. Historically, it was held in early September and involved three days of celebration.

"ECCLES WAKE"

Our Eccles Wake was held over the weekend following the Labor Day Holiday and featured sports like bowling, stoolball and running (a favorite Lancashire pursuit) and a target shoot (our nod to the cult of the firearm). Discussion centered around the harvest, agricultural prices, religion and the attempts to sell knighthoods. Specific activities were scheduled, but structured so as to appear natural and unplanned.

The weekend attracted wide media coverage and attendance rose to ten times the usual numbers. Due to the unique nature of the program, a careful orientation was necessary before visitors became the historical investigators. They needed to know something about the time, place and people with whom they were dealing. The regular tour guides staffing the orientation center were given the basic information on the program, instructed on how to present it to the public, and a small handout on living history was provided with the admission ticket.

A signboard was also developed and displayed just before entering the interpretive area with information on the period, some current events of 1631 and featuring photographs of the living history characters. Under each photo was a short "biography" designed to provide a point of departure for discussion.

In this way we could guide the interpretive experience, cutting down on duplication of effort and making each character more real by insuring that each had a slightly different point of view. This helped greatly in advancing the level of question and experience. We found questions centering around "why" and "how" rather than "what"; a focus on issues rather than on objects alone. Subsequent living history weekends have met with equal success.

SECOND YEAR

We are now beginning our second year of living history at Agecroft and have expanded the number of interpreters to eleven, adding a local constable and farmer as well as a local girl hired to be a milk maid. There have been and remain some difficult spots and omissions in the living history program, one being that Agecroft was not rebuilt exactly as it was dismantled. Our house is only about half as large as the original. Likewise, some of our gardens are inappropriate to the 17th century. These are reasonably easy to deal with by restricting our activities to those areas most suitable to an English setting. Still, we will never have an absolutely pure period setting.

Until recently, all living history was limited to outside locations. We have lately been "loaned"space in the house with separate outdoor access. This space has been furnished for use as a period study. Here we can discuss business interests, bring out the maps of the estate and give a feeling of life inside the house as well as allow the visitors to experience some of the reproduction artifacts in their proper setting.

Unfortunately (from the living history perspective) this space will eventually be used for exhibit space as a chapel. A glaring omission is our lack of a domestic space, like a kitchen; a situation which may soon be remedied with the addition of a working still house and bake oven.

RESEARCH, DESIGN AND IMPLEMENTATION

Throughout the process of research, design and implementation of the Agecroft Living History Program, we have tried to make connections between our own world of the late twentieth century and that other, shady, world of the seventeenth century; to focus on historical trends and problems which people of that time faced successfully or unsuccessfully, which trouble us still. One hears echoes of our own world in the desperate pleas for help from Lancashire in the disastrous year of 1623, when the harvest failed and people starved to death in their own homes. We recognize ourselves in their attempts to reconcile a desire for order and law with a more representative government.

They, too, tried to deal with an increasingly powerful conservative religious minority which attempted to decide what was best for the entire country. And which of us can fail to see some of our own faces lit by the flames which destroyed Richard Merriot's Manchester inn in 1631? The establishment was burned to the ground by neighbors when the inhabitants were struck down by the plague, a contagious disease, as little understood at that time as is AIDS in our own.

The aim of the program has always been more than a simple relation of historical data. We hope to give the visitor a vehicle for understanding the past; to discover for themselves the relevance of history and to more fully comprehend *their* present. This, hopefully, is the argument best imported by our show.

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HISTORY COMES ALIVE! A LEARNING ADVENTURE AT GETTYSBURG NATIONAL MILITARY PARK

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ABSTRACT: The Student Education Program at Gettysburg National Military Park is a time proven method for interpreting history to school groups. Centered around roll playing activities conducted on the battlefield, this program stimulates students to learn by identifying with the soldiers who experienced the Civil War. This "connection" takes the students from everyday camp life into the heat of battle and through the suffering and medical treatment of the sick and wounded.
KEYWORDS: Gettysburg National Military Park, historical interpretation, field trip.

INTRODUCTION

For many young students, studying history is dull! Just remember some of your own experiences from way back when. Often, in an attempt to add excitement and stimulate interest, teachers with class in tow embark on field trips to authentic sites. At this point, the young and inquisitive minds come into our custody. As interpreters and guardians of our heritage, we are faced with the challenge of providing an accurate yet meaningful and exciting learning experience.

PROGRAM DESCRIPTION

Every Spring, Gettysburg National Military Park experiences the field trip scenario as thousands of students come to see where this pivotal battle of the Civil War took place in July of 1863. To make a real connection with the students and enliven their study of history, the interpretive staff has developed an active learning adventure called Student Education Programs (SEP). These two hour programs, designed specifically for class field trips, are based on the principle that children learn best when actively involved.

The main ingredient for student involvement in the Gettysburg SEP is roll playing. Each student assumes the identity of a Civil War soldier and participates in a variety of exercises in one of three programs: Care of the Wounded, Pickett's Charge and Civil War Soldier.

Our overall strategy is to stimulate their imaginations so the students can step back in time and experience history from the point of view of the soldiers who endured it. Use of authentic objects and battlefield sites allow a physical contact with history. Actual quotes from battle participants help set the tone and appeal to the students emotions. Their emotional involvement is considered essential to our program if students are to understand the whole story, including the fear and hate, devotion and honor which were prevalent throughout this conflict.

CIVIL WAR SOLDIER presents the motives of young men for joining the Union Army and the subsequent hard, unpleasant, dangerous and often boring life of a soldier. After taking their oath and a typical physical examination, equipment and living conditions are discussed as a student volunteer is fully outfitted for the field. The uniform, weapons, rations, and haversack form a heavy and cumbersome load and help illustrate the stark living conditions soldiers endured.

Under command of student officers, the recruits learn to march, load and fire their muskets (simulated drill only) and to fight as a unit. The program concludes with a mock skirmish and discussion of the realities of being a Civil War soldier.

CARE OF THE WOUNDED illustrates the role of the Army Medical Department and examines the horror of war as seen through the eyes of a surgeon. During sick call, students depict typical illnesses which plagued the soldiers and learn of the inadequate and often harmful "cures" that were practiced.

Problem solving activities include establishment of a field hospital, transportation of the wounded from the battlefield and assigning the order of treatment (Triage) for a group of wounded.

This program concludes with a mock amputation being performed by the surgeon and his student assistants. Authentic medical tools and surgical procedures help make this a very realistic activity. It captures the attention of everyone and dramatizes the cost of war in a way that even 20th century students can understand.

PICKETT'S CHARGE examines the experiences and emotions of soldiers in battle. The students become part of the 28th Virginia Infantry and assume the identity of Confederates who actually participated in this famous charge. After a discussion to establish context and a drill session, students are placed in battle formation and ordered to lay on the ground in the same area where Pickett's men awaited their orders. And when they rise up for battle, the students march the historic 3/4 mile route toward the "Angle" with their regimental flag (a pre-visit project) leading the way. Group unity and pride are stressed throughout this activity.

The student officers are instructed to maintain strict discipline and well dressed lines. Casualties are identified and remove many from the ranks as they proceed across the open field. Quotes from survivors help the students visualize their precarious situation and actual experience of participants. A final roll call is held to emphasize the high cost of war, the futility of Lee's strategy and a measure of the soldier's devotion.

PLANNING CONSIDERATIONS

A successful educational program requires careful planning and organization. Program management and preparation can be as important to the outcome as the presentation itself. Some important considerations are:

•Target the program for a specific grade level, but be adaptable.

•Develop a pre-visit booklet to prepare teachers and students for the program. Include background information, work sheets, instructions for activities they will complete during their field trip, a bibliography and follow up activities. Completion of this work is vital for a good experience.

•Plan alternatives for outdoor activities in case of inclement weather. This can be a real challenge!

•Limit the number of participants. Thirty-five is about the maximum one interpreter can handle and should accommodate most classes.

•Plan program starting times to allow sufficient travel time for schools to arrive and depart within their school day. Gettysburg offers programs at 9:30 a.m. and 1:00 p.m.

•Establish a reservation system and be consistent in following it. Advertise your program offerings well in advance. Remember, buses for field trips must be reserved several months in advance.

•Conduct your school programs away from major visitor use areas if possible.

•At all times think safety first. If there is a potential hazard, school groups will find it!

•Reward your student participants upon completion of the program. An inexpensive button or sticker, or a polaroid photo of the class adds a personal finishing touch.

•Evaluate each program. The field interpreters should objectively evaluate each activity noting problems and suggestions for improvement. Give each teacher a self-addressed evaluation form. Their feedback can be very helpful.

•Be open to adapting and changing programs to meet varying needs. Never consider the programs as finished.

A SUCCESSFUL CONNECTION

How successful has the Gettysburg approach been in providing meaningful field trip activities for our visiting students? In ten years, over 40,000 students have participated. Teacher evaluations have been very complimentary of our role playing approach and program requests now outnumber available slots.

The best measure of success can be seen in the performance of the students. Their attentiveness, enthusiasm, demonstrated ability to work as a unit, and provocative comments all indicate a solid connection is made as history comes alive at Gettysburg National Military Park. It can come alive at your site too!

THE PINCKNEY PERPLEXITY: A CHALLENGE TO MANAGEMENT

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ABSTRACT: In 1988 Friends of Historic Snee Farm was organized to protect the farm from a proposed housing development. Congress subsequently established the Charles Pinckney National Historic Site at Snee Farm in Mt. Pleasant, South Carolina. Charles Pinckney was one of three men who signed the U.S. Constitution from South Carolina. According to local legend the house at Snee Farm was constructed in 1754 by Pinckney's father. However, preliminary historical and archeological research suggests that the house may date instead to the early to mid-nineteenth century and may not be associated with Charles Pinckney. Archeological research conducted at the site several years ago located the foundations of a probable eighteenth century building near the present house. Perhaps the archeological remains are the only reminder of the Pinckney era.
KEYWORDS: archeology, historical research, historic farm,

INTRODUCTION

The purpose of our paper is to present a discussion of the archeological, historical, and historic architectural research conducted for the historic farm over the past few years.

On September 8, 1988 Congress established the Charles Pinckney National Historic Site at Snee Farm in Mount Pleasant, South Carolina. The National Park Service is responsible for interpreting the life of Charles Pinckney, preserving and interpreting Snee Farm, and presenting the history of the United States as a young Nation. Preliminary archeological and historical research conducted prior to and since the establishment of the site has revealed a rather intricate and complicated history of the property.

THOMAS PINCKNEY

The first Pinckney, Thomas, arrived in Charles Town in April 1692 (Williams 1978:4-5). Thomas Pinckney began what was to become one of South Carolina's founding families. Thomas' grandson, Col. Charles Pinckney II (1732-1782), was a wealthy lawyer and planter who married Frances Brewton in 1753. The following year he acquired Snee Farm. His eldest surviving son, Charles Pinckney III, was born in Charleston in 1757. He later became his father's overseer at Snee Farm, Christ Church Parish (Williams 1978). The family had a "fine old residence" in Charleston which was destroyed along with 250 other dwellings in the fire of January 1778. It is believed that British sailors set the fire (Williams 1978:113).

PINCKNEY'S ILLUSTRIOUS CAREER

Pinckney's illustrious career began at the age of twenty when he served as a delegate to the Continental Congress. In 1779 he was elected to represent Christ Church Parish in the South Carolina legislature. That year Pinckney also enlisted in and served as a Lieutenant of the Charleston Regiment and served at the siege of Savannah. When Charleston fell to the British on May 11, 1780, Charles Pinckney became a British prisoner (Williams 1978:157, 183-184).

COL. CHARLES COTESWORTH PINCKNEY

It was during the British occupation of Charleston that Colonel Charles Cotesworth Pinckney (Charles Pinckney's cousin) and General William Moultrie, British prisoners, were paroled to Snee Farm. Col. Charles Cotesworth Pinckney's letters written from Snee

Farm in the fall of 1780 contain no descriptions of the farm (Pinckney family papers, Library of Congress).

In 1782 Charles Pinckney inherited Snee Farm from his father. An inventory dated 1787 describes Snee Farm as containing 40 slaves, including a wheelwright, three carpenters, a gardener, an oarsman, a driver, and five field hands (Brockington 1987:28). These data suggest limited agricultural activity since only five of the fourty slaves are field hands and seven slave have special skills. The occupations of the slaves hints at the plantation activities. This subject will require more historical research.

CONGRESS OF CONFEDERATION

From November 1, 1784 to February 21, 1787, he sat as a delegate to the Congress of Confederation. (Dictionary of American Biography (DAB) Vol.XIII-XIV, p.612). When the Constitutional Convention convened in Philadelphia, Pinckney played an influential role. In January 1789 young Charles Pinckney succeeded Thomas Pinckney as Governor of South Carolina. His public career spanned 37 years and included three more terms as Governor of South Carolina, one U.S. Senate term (1798), and one U.S. Congressional term. Thomas Jefferson appointed him Minister to Spain in 1801, and in 1806 he returned to Charleston where he was elected governor for the fourth time. Pinckney later served two terms in the South Carolina General Assembly before his death in 1824 (Dictionary of American Biography 1946:613).

SNEE FARM

Pinckney's own description of Snee Farm is from a letter he wrote to President George Washington in April 1791. Governor Pinckney invited Washington to rest at Snee Farm before continuing on to the celebration in Charleston. Pinckney described Snee Farm as "indifferently furnished... and where your fare will be entirely that of a farm.

It is a place I seldom go to, or things perhaps would be in better order" (Jackson and Twohig 1979: Vol. VI, p.127). Pinckney must have spent more time at his upcountry estate near Columbia than he did at Snee Farm; because by 1796 he was again serving as Governor in Columbia and had leased out Snee Farm. It has been noted that Pinckney lived a lavish style until his estates were mis-managed by his agents (DAB).

SNEE FARM

Documentation which describes Snee Farm is an article from DeBow's Review (July-August 1864) depicting elaborate gardens at Pinckney's favorite country place. Nineteenth century plat maps and a Civil War map document the spatial arrangement of the slave village, main house, associated buildings, and the land use for the area from 1841 to 1865. By 1900 the farm changed hands five times.

A 1919 map depicts the buildings and roads (USGS Fort Moultrie Quadrangle Map). A series of landowners have altered the landscape; for example, in the 1920s the farm contained approximately 700 acres, but by the 1930s the tract was reduced to about 600 acres, and by the 1970s the farm was reduced to about twenty-six acres.

PINCKNEY HOUSE

Although initial historical research focused on graphic images and written descriptions of Snee Farm during the Pinckney era, research is now focused on the house itself. The Historic American Buildings Survey team believes that the house originally contained eight rooms, four up and four down, with each floor bisected by a wide central hall, a plan which is typical of low country farmhouses. X-ray analysis of joinery methods in the house appears to show that the building flooring, studs, rafters, and sills are held together with machine cut nails, suggesting that Snee Farm house was constructed between 1820-1840. At present the results of the dating procedure are unconfirmed. Future historical research must examine tax digests, deeds, and plats following Pinckney's period of ownership.

CHARLES PINCKNEY NATIONAL HISTORIC SITE

Brockington (1987) and HABS (1990) have documented modifications and additions to the house by Mr. and Mrs. Thomas Ewing in the 1930s (Charleston News and Courier, December 1936). Today the Charles Pinckney National Historic site includes the house with 1936 wings, stable, corncrib, swimming pool, small one story house, horse pasture, grove of ancient live oaks, and a marble memorial to Charles Pinckney's father in the east yard. There may be no standing structures to remind us of the life of Charles Pinckney. We do, however, have preliminary archeological information from survey, testing, and limited data recovery conducted by Brockington and Associates in 1987.

PRELIMINARY ARCHEOLOGICAL TESTING

In July 1987 preliminary archeological testing revealed the presence of intact, well preserved brick and mortar foundations in the east yard of the present day house. Historic ceramics recovered from the test excavations suggest an occupation date of 1744 for the lowest levels and a mid-nineteenth century date for those levels nearest the surface. It has been suggested that these brick foundations may represent the remains of an earlier house on the site (Brockington 1988:110).

CONCLUSION

Additional archeological investigations may be required to definitively locate late eighteenth century buildings. It should be noted that archeological data recovery in the fall of 1987 also located the remains of three mid-nineteenth century slave structures (Stine 1989). This information should prove useful for interpreting slave lifeways and to demonstrate cultural landscape changes. The National Park Service anticipates the need for intensive archival and archeological studies to solve the puzzling problem of interpreting Snee Farm.

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INTERPRETING AMERICA'S FORGOTTEN HERO: THE COMMON LABORER

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ABSTRACT: Rouse ye noble sons of Labor
and protect your country's honor,
Who with bone, and brain and fibre,
Make the nation's wealth.
Lusty lads, with souls of fire,
Gallant sons of noble sire, -
Lend you voice and raise your banner,
Battle for the right.

These rousing words from the 1875 "March of the Rolling-Mill Men" describe the common iron laborer of the late 1800's. Often forgotten in America's history, these "lusty lads" have earned their place in American history through an "honest days work and a job well done". Through the use of living history (first person interpretation), one of the most powerful and yet potentially dangerous tools available to the interpreter/educator today, the participants of this session will be introduced to George Kephart, the filler of Hopewell Furnace near Birdsboro, PA and learn of his life in 1836 at a charcoal cold-blast furnace, as well as the importance of the common laborer.

KEYWORDS: laborer, interpretation, social history, education, filler, iron plantation, research.

THE CHALLENGE

Freeman Tilden, the recognized father of modern park interpretation, has defined interpretation as "an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience rather than simply to communicate factual information". He states in *Interpreting Our Heritage* (Tilden 1957) that "the purpose of interpretation is to stimulate the reader or hearer toward a desire to widen his horizon of interests and knowledge, and to gain an understanding of the greater truths that lie behind statements of fact". Thus, "interpretation is the revelation of a larger truth that lies behind any statement of fact".

Interpreters employed at historic sites are challenged to recreate a scene of the past for the visitor without blemishing the historical accuracy of the site. It is difficult and hard work to "provoke" an accurate image of the past without "glamorizing the historic site or indulging in hero worship at the expense of the truth". We must be careful not to create "folklorismos" (folklore) which are pseudo traditions that are passed on to the visitor as the truth (Anderson 1984). But of much greater importance is the fact that no recipe exists from which to contact the thoughts, values, and emotions of people who lived in the past.

THE LITERATURE OF THE PERIOD

Even having steeped ourselves in the literature of the period, worn its clothes, and slept on its beds, we never shed [1990's] perspectives and values" (Sherfy 1977). All quality historic site interpreters know that ideal interpretation implies "recreation of the art, and kinship with it". The problem is how to achieve this desirable end. It is not easy (Tilden 1957)!

> "Therefore, it seems that the key to making the past come alive is through a functional approach to historical interpretation. Our concern should not be with a dwelling only as a house but also as a home; we should not view furniture and tools solely as relics of the past that have survived, but also as the personal possessions of PEOPLE who once lived (Gerlach 1975).

Recently social historians are teaching us that "history is people ALL TYPES OF PEOPLE, thus rejecting the traditional notion that rulers are more important than the ruled". Thus for those historical interpreters who work at a site "whose misfortune has always been that George Washington slept someplace else" (Carson 1981), we can now confidently interpret the lives of "common people".

By interpreting the lives of people we are providing the visitors with what seems to interest them the most—helping them create a kinship with people of the past. No longer is the site seen as a "ghost town", but a community of people who lived during a different era of history.

"AMERICA'S FORGOTTEN HEROES"

Throughout the United States are numerous historic sites that should welcome the challenge of interpreting ordinary people and everyday life—the miller, miner, farmer, blacksmith, maid, seamstress, cook, woodchopper, canal worker, millgirl, and ironworker to mention just a few of "America's forgotten heroes".

They illustrate America's ethnic diversity, both rural and urban, and depict the social status and working relations between management and labor. m their lives interpret the struggles of a growing nation and the environmental impact that industrialization created. They are the pulse of America, America's true romantic heroes—the ancestors of today's BCG's (blue-collar guys) (Olsen 1989).

Hopewell Furnace National Historic Site, one of 355 National Park Service sites is an example of a site that has accepted the challenge of interpreting the lives of iron plantation workers. Located in southeastern Pennsylvania near the birthplace of the state's iron industry, it represents the finest example of an early American (18th/19th century) iron plantation—the forerunner of today's iron and steel giants. Here you can experience a 19th century iron community, its lifestyles and operations, and learn of the tasks of workers who fired the charcoal-fueled furnace from 1771-1883 to produce pig iron and finished castings.

GEORGE KEPHART

Furnace-related occupations included: founder, filler, teamster, gutterman, moulder, collier, woodchopper and office store clerk. During its best year in 1836, Hopewell Furnace employed 246 employees who "charged" the furnace 24 hours/day for 445 continuous days of operation (Walker 1966). A fine example of the "worker" in 1836 was the filler of Hopewell Furnace, George Kephart, a men who worked from 6 a.m. to 6 p.m. everyday, filling the furnace every half hour.

George's assignment was to load 400-500 pounds of magnetite ore, 30-40 pounds of limestone, and 15 bushels of charcoal in carts and empty these raw materials into the throat of the furnace (at 100+ degree temperatures). His salary was $16/month and when the furnace was shut down for repairs, George appears on the ledger of the Company Store being paid $.60/day to take out the hearth and put in the furnace inwalls.

George Kephart's purchases from the Company Store for the years of his employment (1819-1848), included shoes - $1.50/pair; "segars", $.22; knife, $.20; leather, $.37; storegoods/linen, $.56; suspenders, $.25; oysters (a special treat), $.75; handkerchief, $.33; and in 1823 his most expensive purchase from the store—a $20.00 pocket watch (a major investment considering his total annual salary was $122!).

HOPEWELL'S RECORDS,

According to Hopewell's records, George Kephart as born on December 23, 1800 and died on November 2, 1871. He fathered seven children, including five boys who followed in "pops" footsteps and were employed at the furnace. He also provided his children with a tutor paying Andrew Collins $2.30 for their education. And when he died his wife placed on his gravestone a fitting epitaph whose last line sums up the "rebirth" of George Kephart at Hopewell National Historic Site—"Gone but not forgotten"!

An interpretive technique that exemplifies Tilden's definition is "first person interpretation". This method allows the interpreter to dress in clothing typical of those worn in the past and take on the personality of an individual of another era to stimulate the visitor's interest in those folk who are "gone, but [hopefully] not forgotten".

HOPEWELL FURNACE

Since 1987, Hopewell Furnace NHS has actively using this interpretive technique to educate and to provoke an interest in America's industrial heritage. Learning from the mistakes of previous attempts at "living history" at other

NPS sites, Hopewell Furnace has established firm guidelines to ensure that all living history programs achieve high standards of historical accuracy and directly relate to the historical theme of the site.

Only after extensive research analyzing Company records, census data, diaries, and other reference tools were **George Kephart** (the filler of the furnace), **Thomas Foster** (the office store clerk), **Eliza North** (the maid in the ironmaster's house), and **Jacob Moak** (the teamster) recreated to enhance "the visitor experience".

THE SUCCESS

All quality interpretive programs require that a "firm foundation" be established before success can be achieved. The four foundation blocks of success for each interpretive program include: a quality research data base, an outline, historical accuracy and administrative support.

QUALITY RESEARCH DATA BASE

"The more one learns, the more one realizes there is to be learned". All interpretation must be based on research that is unending. Someone with research training or experience should go through all pertinent manuscripts, records, newspapers and books to get facts about the site and should then evaluate these facts and draw acceptable conclusions from them (Alderson, Low 1987).

Interpreters who are performing first person programs should constantly be searching for historic information to support their presentation. This includes oral history assignments. Once the data is gathered, it must be analyzed and attached to the whole (community, county, state and national scene).

OUTLINE

Without an outline, the interpretive experience is a jumbled mixture of nothingness. It will lack direction and purpose and will likely wander from topic to topic. The program should be theme oriented. To the interpreter, the outline should represent the skeleton; the facts - the flesh, with the interpreter giving the first person experience soul.

HISTORICAL ACCURACY

All historic site interpretation needs accuracy for without it, the program loses sight of its purpose. Historical accuracy is critical. It helps eliminate those pseudo-traditions which we cannot support with historical references.

If you cannot support it, don't use it! Don't attempt to glamorize the past. Let the worker's lifestyle speak for itself. Accurate information does not need to be dull. Remember, the visitor has a right to expect the truth.

CONCLUSION

All interpretive programs should have the full support of the principle administrative officials responsible for the site. The program's goals and objectives must be supported by the interpretive administrative documents (i.e., enabling legislation, guidelines, general management plans, statement for interpretation, and interpretive prospectus).

Through the use of first person interpretation, we can bring the past to the present; however, we need to be careful to ensure that we are not distorting the truth. For yes, we do have a story to tell. And, America's forgotten heroes—the common laborers, should be part of that story—for, indeed, they have their place in American history too!

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MRS. MARKS: A WOMAN WITH A PAST

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ABSTRACT: Living history interpretation, in which an interpreter simulates life in another time (Anderson 1987), or first-person interpretation in which an interpreter "acts the part" of a person from the past, are unique methods of presenting history. Frequently, famous people from the past, or representative fictional characters such as soldiers or frontiersmen are portrayed. However, researching your own park history to find an actual person to portray—someone who settled on the land, raised crops on it, or journeyed across it—can add a special dimension to your interpretation of your regions history.
KEYWORDS: living history, first-person interpretation, settler.

INTRODUCTION

During the past few months, many people have reported seeing a settler in the park dressed in a long red dress and wearing a checked apron and white cap. The settler has been spotted cooking stew, carrying water, and collecting witch hazel leaves throughout the park Several people have claimed that they spoke with her, and she even gave them a cup of sassafras tea! I decided to walk the trails myself to see if I could flnd her...

A **first person character** like Mrs. Marks can be a valuable tool for teaching history in a variety of settings to a variety of groups. Encountering a "settler" on the trail is sure to stop even the most dedicated jogger—but first-person characters can be equally effective for outreach programs to local schools, campfire programs, evening lantern hikes and seasonal events. In this presentation, you will meet Mrs. Marks and learn how she evolved into a person with a past.

BEFORE YOU SEARCH FOR A PERSON WITH A PAST...

Decide if first-person interpretation is the best method to use for your program or site. Things to consider:

1) If you will be talking about a subject your audience is not familiar with, such as maplesugaring or blacksmithing, it may be difficult to explain those activities without the benefit of modern comparisons. First-person is effective for interpreting social history, but it is difficult to use in interpreting past technology and trades (Vance 1986).

2) Does your site have a setting which will be conducive to interpreting history—or will you be portraying a colonist next to a superhlghway with jets flying overhead? You may be able to ignore them, but I have found that many audiences won't!

3) Since portraying a real person requires you to choose a specific period to interpret—will that greatly limit your ability to interpret important "later" aspects of your site?

4) Do you have adequate research data and resources available to research a person from the past?

5) Will you be comfortable playing the part of a person from the past?

DIGGING UP THE PAST

If you decide to try first-person interpretation, you should begin by setting several interpretive goals: what time period will you interpret? Why is that time period important to your park? What historical information do you want to convey with a character?

Finding the right person with a past is a matter of both hard work and serendipity. I discovered Mrs. Marks as I was skimming a history of pioneer families, just trying to gather information about settler life in my region. When I researched her history more extensively, I found that she had actually settled on land adjacent to what later became a Cleveland Metropark Reservation. She fit the time period (early 1820's) I wanted to interpret, and she would enable me to illustrate many aspects of early settlement in our region.

MR. HUNTINGTON

Tax records, property maps, local histories (many were compiled in the centennial year 1876), birth/death records and immigration records are good places to start "digging" for people. Consider researching common landmark names and road names in your park. When we researched Huntington Reservation in the Cleveland Metroparks we discovered that Mr. Huntington was not exactly an "obscure" individual—in addition to establishing the Cleveland Museum of Art, he had run for mayor of Cleveland in the 1870's.

Be curious, persistent, and creative in digging up people! You never know what you will find...

CHOOSING A CHARACTER

In order to be believable, it is important that you choose an individual who is as similar to you in age, as possible. On stage, lighting and makeup can create an effective illusion of age or youth, but you will be standing just a few feet from your audience, so those tools are not available to you.

If you have a choice of characters, select the one which you feel most comfortable portraying—a laborer, schoolteacher and politician—all require different personalities, mannerisms and speech patterns. What suits you?

GETTING DRESSED

Dedicate as much time to developing your wearing apparel as you do to developing your character. Do not resort to stereotypical historical clothing (Pilgrim hats with buckles, are an obvious example). There is ample information on fabrics and clothing styles for most periods in American history. Numerous catalogues exist for purchasing historical clothing and patterns.

I also suggest asking historical museums who specialize in your time period for assistance in researching your clothing and developing a wardrobe.

Remember, something as simple as fastening your kerchief with a hawthorne can provide a source of interesting conversation and make a lasting impression on your audience.

WHAT WILL YOU SAY?

Accept the fact that you will never know everything about your historical person. In fact, you will probably have very limited information—just statistics, dates, property records—on which to build your conversations.

Research the time period, local and national news and historical literature to acquire a sense of the world in which your character lived. Diaries, local newspapers, magazines of the period, letters—are all excellent sources of day to day information. Pick several areas—politics, art, news—for your character to speak knowledgeably about.

Use stories and anecdotes to enliven your presentation. Mrs. Mark's stories about rattlesnakes and mudholes came from an actual settler's account of journeying to Michigan in the 1830's. *People in the past smiled and laughed and joked just as we do today.*

EVALUATION

All interpretation, even "conversational style" first-person interpretation should have a direction and a purpose. Is your audience learning basic facts about your site and your historic persona - as well as being entertained by your stories and anecdotes? Give evaluating "short quizzes" periodically to gauge your success at communicating information through first-person interpretation.

Interpretation is bridge-building, it is catalytic; it is eye-opening and mind expanding—Dennis O'Toole, Colonial Williamsburg Foundation.

Additional sources for clothing, stories and language will be provided at the session.

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AN HISTORICAL INTERPRETER IS NOT AN OLD NATURALIST

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ABSTRACT: An historical interpreter can be a valuable addition to a nature services staff by providing both diversity and depth in interpretive programs. Your park does not need to be site of a Revolutionary War battlefield or a famous historical home—*all* land has a history. All land has undergone change, and historical interpretation offered with naturalist-led interpretation provides the opportunity to show the land both as it is, and as it was.
KEYWORDS: historical interpretation

INTRODUCTION

*As an historical interpreter for a park system, I often find that, at first, visitors are unsure of what exactly an historical interpreter in a park does... I have surprised visitors who expected an "old naturalist" or a "person who translates history into different languages"... If visitors are not in a traditional museum environment, they are usually not expecting historical interpretation. It is the responsibility of the historical interpreter to show how the natural world and the historical world **are** interrelated, and to make that interrelationship meaningful and interesting...*

Wanted: Historical interpreter, skilled at researching history, asking questions, using historical imagination; presents entertaining and educational programs which highlight the unique history of the region and its people (excerpt from Kammen 1988).

What purpose does an historical interpreter serve in a park? All land has a history. A park does not need to be the site of an historically IMPORTANT event in order to implement an historical interpretation program. Regional history can be just as meaningful to visitors as "national" history. It also builds a sense of community and pride in a common heritage.

The chapter on "Open Spaces" in *Public Places: Exploring Their History* by Gerald A. Danzer makes the point that open spaces "parks" serve public functions: transportation, health maintenance, aesthetic, educational, barometer of the quality of like, and meeting place.

Any of these public functions could serve as the starting point for historical research and interpretation. How has the park been utilized as a meeting place during the past century, for example? What means have people used to travel to the park? Has the aesthetic aspect of park changed as society's tastes changed—from ornamental to natural, for instance?

LAND AND WILDLIFE

The transition in land and wildlife is also a valuable area for historical interpretation. While a naturalist interprets current flora and fauna, an historical interpreter can interpret past flora and fauna. I think that it is important to interpret how the land has changed in appearance—why, for example, a forest has trees which are only thirty to forty years old—because the area was farmland at one time. Visitors also seem to enjoy learning about the wildlife which once existed in an area—rattlesnakes, wolves, etc.

History is a continuum. The land is still changing. We are still changing the land. Historical interpretation can illustrate the continuum of human and natural evolution.

HISTORICAL INTERPRETATION

Historical interpretation should be creative. Children and adults should be engaged by history presented with skill and imagination.

Use a variety of media in your historical programs: music, slides, videos, hands-on experiences, games, and drama. Create a multi-sensory atmosphere. Let your audience see, hear, taste, smell, and touch history

The chief aim of interpretation is not instruction, but provocation.

—Freeman Tilden

SAMPLE HISTORICAL PROGRAMS

LIVING HISTORY

Use a character—either real or fictional—to interpret the land and animals of the past. I use an Ohio settler character to interpret early settlement history. She tells stories about local wildlife (many of which are now extirpated), engages the audience in "measuring a mudhole", and gives the audience a taste of sassafras tea.

Consider what kind of character be the most useful for interpreting you park history - - a 1930's naturalist, a voyageur, a family going west, an 1870's farmer, a one-room schoolhouse teacher...

Prepare a presentation using as many types of media and stimuli as possible—such as artifacts, slides, music, and tastes of the past.

GUIDED IMAGERY

If a building or historical site no longer exists, the scene can still be recreated using *guided imagery.* Ask your audience to imagine the transition of the land, and the history "below their feet".

An old schoolhouse once existed on the site of a Metroparks nature center. For an evening program, we used slides and descriptions to assist an audience in imagining the site. Following this, we re-created a few hours in the schoolhouse with reading lessons from McGuffey's Readers, penmanship practice, and butterchurning. The audience enjoyed being the historic structure or event to life.

Guided imagery can be useful for programs at prehistoric sites, sites which have not been restored, battlegrounds, and other places where creativity and imagination are needed to bring the historic structure or event to life.

HISTORICAL MYSTERIES

Let your visitors be historians. Provide them with reproductions of old maps, excerpts of oral history tapes, an old photograph or two, an unusual artifact —and send them on a historical investigation to answer a number of "puzzling" questions about the park.

Variations on this might include a search for a lost artifact (think Indiana Jones!) which requires participants to discover certain historical facts about the park in order to find an artifact.

HANDS-ON

For younger children who are just developing a sense of history, a hands-on program breaks down the barrier of a "museum" and gives them first-hand contact with the past.

Activities of the past—butterchurning, apple butter cooking, soap making, rugbeaters, apple peelers, ice tongs. How easy/difficult are they to use? Do they require electricity—if not, how did they work? What material are they made from—what are our tools made of today?

MULTI-SENSORY SLIDE SHOW

Slide shows do not have to be ordinary. Make your slide show a multi-sensory experience. Play music of the period. Create a small display of historical items. (Local history museums will often loan artifacts or clothing for a display). If possible, obtain copies of old newspaper headlines or stories from that time period. Dress in the clothing of the period.Create an **atmosphere,** with the slides as your "backdrop".

ODDS AND ENDS

Whenever possible, I recommend wearing historical clothing. It sets the time period, creates a mood, and visually prepares your audience College theaters and community theaters are usually willing to loan costumers, free of charge. Typically, they have a more extensive collection than a costume shop.

Gather a collection of reproduction artifacts to use for hands-on program and living history programs. My butterchurn, for example, has been indispensable for a variety of programs.

Cooperate with local historical societies and museums. Most parks do not have the resources to collect and store research materials and historical items, but museums are often willing to assist you in researching and preparing a program.;some will loan items.

To conclude the presentation, you will step into the shoes of the "old naturalist" and develop an interpretive program for a yet-to-be-named site...

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INTERPRETING RECENT HISTORY: DEVELOPING PROGRAMS WHICH INCLUDE ORIGINAL EVENT PARTICIPANTS

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ABSTRACT: An innovative technique for responsive interpretive programming at any facility whose historical context embraces time periods from which participants are still alive is presented as a model. The concept of the model focuses on the presentation of a theme specific, public symposium oriented special event. The symposium utilizes a technique of presenting and contrasting the academic views of original event participants. Important planning considerations are reviewed and discussed.
KEYWORDS: historic site/museum, recent history, responsive interpretation, special events

INTRODUCTION

This paper presents an innovative technique as a model for responsive interpretive programming at any facility whose historical context embraces time periods from which participants are still alive. The model is based on an interpretive programming technique developed and conducted at the Admiral Nimitz State Historical Park (Fredericksburg, Texas) which focuses on the presentation of a theme specific public symposium oriented special event. the crux of the symposium lies in the techniques of presenting the academic views of noted scholars on specific events and then contrasting those accounts with the experience related views of original event participants. this program has been used for the past three years and is found to be highly effective in the following areas:

- uniquely qualified interpreters present the subject matter in a manner which appears to heighten interest and retention;
- historical information is related as a real life experience via the presence of event participants;
- significant contributions are made to the historic record and the interpretive resources of the site via the revelation of previously undocumented or questioned facts;
- new audiences are reached and attendance increased;
- promotional efforts associated with the event and media coverage of the event yield great benefits in enhancing the public awareness of the site an its stature.

THE NIMITZ MUSEUM MODEL

Presenting a public symposium was a result of deliberate efforts by the managerial staff to assess and respond to new opportunities for historical interpretation. The approaching 50th anniversary of World War II, the heightened academic and public interest in that war due to the anniversary, and that many participants were still alive and eager to share their undocumented experiences offered unparalleled opportunities.

Making an assessment relative to a responsive topic may seem intimidating or overwhelming. a variety of questions and issues may emerge at once, and focusing on a single topic can be a difficult decision. A critical aspect of this assessment is the level of interest and involvement the staff maintains in theme related issues and "happenings" on both a regional and national level.

A high level of staff interest, enthusiasm, and involvement will yield a high degree of knowledge and creativity. Other points of reference that can aid in the identification of topics include the interests or experiences of visitors, current academic or popular research, and special interest groups and other local events.

TRANSLATING THE OPPORTUNITY

Once a topic opportunity has been targeted, the staff must identify the historically significant and marketable issues that will form the focus of the symposium. This is best conducted through a thorough study of published material and extensive interviews with original event participants. A key factor in the viability of the symposium (that is, the historic contribution and the public appeal is the identification of scholars and event participants able to make a unique and quality interpretation.

A second aspect of program viability i the identification of ancillary events designed to heighten public interest, attendance, and the overall impact of the symposium. Our experience has shown that the development of a related exhibit, a pre-symposium exhibit opening, a post-symposium banquet, and, in appropriate cases, a living history demonstration or air show has provided a winning mix of events that greatly enhances overall interpretive goal of the event.

PROFESSIONAL RESPONSIBILITY

It can be easy to get caught up in the glamour of the event and thereby sacrifice interpretive quality for glitz and marketability. We have found that, given the drama of our subject matter and enthusiasm of our audiences for drama, there is a real need to keep a handle on this aspect and not let the event become a carnival. Remember to remain true to professional standards, conduct, and the mission of the site. We have deliberately chosen to underplay dramatic historical events out of respect and consideration for the participants and professional ethics.

Event planners should adopt the guideline of "Why not the best" in regard to the selection of renown scholars and panelists. With a reasonable amount of research, a plethora of "showstopper" category scholars and event participants willing and able to serve as panelists can be located. The staff's level of professional commitment in ferreting our the "best" panelists is richly rewarded with a high quality program and the sincere appreciation of the panelists and audience for your diligent work in revealing new insights on a topic of interest to them.

PLANNING THE EVENT

The planning for any such event requires the implementation and execution of a basic, well organized event planning model. Our intent here is to relate a few lessons learned from our experiences. One must try to anticipate every aspect of the program, needs that will arise, and predict how things will go. We have found it crucial to start at least a year in advance. We have found the use of docents to be indispensable.

The planning aspect can also include attempts to establish and arrangement with you local cable television network to have "live" coverage of the event. We have been successful in this area by planning and promoting our events as a community education activities. This designation has aided in securing cable coverage, securing grants, and free use of the high school auditorium. It also encourages local audience participation without putting additional stress on seating capacitates and provides an excellent audio-video record of the event.

EXECUTION OF THE EVENT

The focus of the actual execution of the event will of necessity become a massive exercise in visitor services. The public response to a well planned and promoted event can be truly overwhelming. We have found the best way to prepare for this is to have pre-event meetings with the staff and docents to stress the importance of the event and the expectation of high quality service to all your "special quests".

It is useful to consider two categories of attendees and make arrangements and staff assignments accordingly. The first would include the symposium panelists and their respective entourages. The second category of attendees includes the public.

INTERPRETIVE FOLLOW-UP

A high quality event would be ill-served by neglecting an interpretive follow-up. After an assessment of the quality of the program and any new or unique knowledge revealed, opportunities for the development of far-reaching interpretive materials may be identified. The staff should have an audio or video tape made of the symposium. Opportunities for the publication of monographs, articles, and contributions to books may also arise.

The experiences of the Admiral Nimitz Museum have shown that events of this nature can be highly successful in providing a unique and responsive approach to the interpretation of recent history.

SPANISH COLONIAL CARTOGRAPHY OF NORTH AMERICA: A VALUABLE INTERPRETIVE SOURCE

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ABSTRACT: Spanish cartography of North America began with the earliest reconnaissance of the Atlantic coast from Labrador to the Strait of Magellan. Indeed, Juan de la Cosa's map of 1500 is the earliest known map dating from Columbus' second voyage, 1493-1496. the Collection of Maps, Plans and Sketches in the Spanish Colonial Research Center numbers approximately 4,000 items from the Spanish colonial archives in Spain and Mexico. The slide presentation will give a view of the National Park Service Spanish Colonial Heritage sites through Spanish Colonial eyes.

INTRODUCTION

Spanish colonial cartography of North America began with Christopher Columbus' First Voyage of Discovery in 1492. Although field sketches were make of the Caribbean at that time, it was not until Juan de la Cosa, under the command of the Admiral of the Ocean Sea, printed his map in 1500. The map featured Cuba, Puerto Rico, the Virgin Islands and other insular configurations as well as Europe, Africa, the Middle East as far as the Ganges River in India. The Juan de la Cosa map began a cartographical tradition for the tradition for the Western Hemisphere, which continues today.

The Spanish colonial cartography offers a window to the past through which the historical processes of discovery, exploration and settlement may be viewed. For example, in 1529,Enrique Rivero published his map showing the entire Atlantic coastline of North and South America with very much the same configuration known today. His map featured Spanish placenames for the east coast of present day United States. Florida appeared prominent on his map. The mapping of the Atlantic coast of Florida was eventually superceded by Spanish interest in the Gulf Coast running from the west side of the Florida peninsula to Texas.

At the end of the 1530s new interests about the interior of North America resulted from the explorations north from Mexico City. During the period 1539-1543, three major expeditions explored the great extent of North America from Florida to the California coast. Hernando de Soto (1539-1543), explored from Tampa Bay to Georgia to eastern Texas. Francisco Vazquez de Cornado traversed north form Sonora on the west Mexican coast to Arizona, New Mexico, Texas, Oklahoma and Kansas. And, Juan Rodriguez Cabrillo siled the California coast to possibly the Rogue River in Oregon.

EXPEDITIONS

The motives of the expeditions were, characteristically those of the Age of Discovery: the search for fabled cities of wealth like those found under the Incas and Aztecs, as well as the search for raw resources. Significantly, not quite fifty years had passed since Christopher Columbus had claimed the New World. Greek and Roman mythological figures, sea monsters, the four winds and ornate compass roses illuminated their maps and enhanced the mysterious figures, place-names of the real and imagined geography they recorded.

Ortelius was among the first to become interested in the geography of North America's interior. From interviews with explorers, and through study of their correspondence, diaries and field maps, the famed cartographer received vague and varied descriptions of the New World. In 1577, he published his atlas of the world which featured a map of the Americas. Ortelius was able to draft the Atlantic coastline of the New World and the Pacific coast of the southern South America with great accuracy. But the land north of Acapulco on the western

Mexican coast was little known. Ortelius, plagued with uncertainty, published his map pocked with distortions and imaginary placenames throughout the northwestern portion of North America.

NORTH AMERICA

The interior of North America challenged Spanish officials in terms of future planning. By summer of 1598 Juan de Oñate had led a wagon train of settlers to the confluence of the Río Grande in northern New Mexico. There, the established a base of operations from which to explore westward to the Colorado River in central Kansas. the Enrique Martinez Map of 1601 featured the *Camino Real de Tierra Adentro* that ran from Mexico City north of Guanajuato, Zacatecas, the ford at El Paso del Norte, and San Gabriel. The Martinez Map detailed the location of many Indian pueblos along the Rio Grande and Rio Pecos as well as the Rio Madalena (Red River of Texas) and the Arkansas River on the Great Plains.

New Mexican fascination with the Great Plains meant that Spanish settlements and Indian pueblos on the Rio Grande would develop trade relationships with Plains Indians. The resources of the Great Plains centered around the by-products of the buffalo. Early Spanish explorers facetiously called the buffalo vaca *monstruosa* or "monstrous cow" and wrote a variety of descriptions regarding its size, color, awkward gait and ferocious temperament when riled. The Great Plains trade continued throughout the Spanish Colonial Period, 1540-1821.

Between 1598-1680, New Mexico served as a buffer province against possible English and French encroachments, as a base for the exploration of Texas and the Great Plains to the east, present-day Colorado to the north and present-day Arizona to the west. by 1711, traders had moved northwestward to present-day Utah, and by 1720, Abiquiuon the Rio Chama had been established as the jumping off point for northern expansion. Earlier, in 1776, Miera accompanied Friar Silvestre Velez de Escalante and a small party from Santa Fe to Abiquiu where they followed Indian trails toward present-day Provo, Utah and Timpanogos Lake.

ESTABLISHMENT OF CALIFORNIA

The establishment of California resulted form the 1767 military build-up in sonora. In 1769 José de Galvez, *visitador general*, ordered Governor Gaspar de Portolá to take a detachment of soldiers and establish a base at San Diego. The expedition resulted in the mapping and exploration of the interior of California from vases at San Diego, Monterey and San Francsico.

California was mapped and explored many times during the period 1769 to 1821, but its military importance became evident after 1775 when English, Anglo-American and Russian encroachments threatened the Spanish claim to North America. by the 1780s, Spanish ships from California were seen as far north as Nootka Sound (Vancouver Island), Sitka, the Gulf of Alaska and around the Alaskan Peninsula.

Spain's vast northern frontier had no equal among other European claims to North America. The Spanish colonial settlements form California to Texas dotted Spanish maps with the familiar sounding names of San Francisco, Monterey, Santa Barbara, Los Angeles, San Diego, Tucson, Santa Fe, Albuquerque, El Paso, and San Antonio among others. to them were added, after 1760, San Luis (St.Louis, Missouri), Poste des Arkansas (Arkansas Post), Natchez, Nueva Orleans (New Orleans), Mablia (Mobile), Pansacola (Pensacola) and others.

The Spanish colonial cartography represents 329 years of colonial administration. The cultural and historical heritage continues by way of the genealogical legacy present across the continent between Florida and California. Demographically, what was Spanish-speaking today. Historical place-names of cities, rivers, and mountains,are reminders of our rich cartographical inheritance.

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"EVOLUTION AND SLAVERY: HOT TOPICS IN THE TINDER DRY SOUTH"

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"I am not condoning slavery...but it was overshadowed by the fact that a large number of slaves were freed from a life of savagery and heathen parents to a land of civilization and Christianity..."
United Daughters of the Confederacy
October 1989

"Creationists in the United States still affirm that the Earth is about six thousand years old, making current science wrong by a factor of almost a million."
Nigel Calder 1983

INTRODUCTION

Dealing with the topics of slavery and evolution can be very difficult. Yet no matter how difficult they may be, we believe that it is much worse to avoid the issues raised by those topics, rather than not dealing with them at all. To ignore unpopular or controversial topics that some people do not want to think about is only perpetuating our inability to understand where we have come from, where we are today, and where we are going.

The museum field has tried to avoid the issue of slavery until the last decade. Both blacks and whites have a difficult time looking at an exhibit that examines this blot on our "glorious past". A case in point is Colonial Williamsburg, which has always been a draw for numerous tourists. Yet until 1979 there was no attempt to deal with the issue of slavery even though, during its heyday as the colonial capital of Virginia, more than half of Williamsburg's residents were slaves. Yet when Rex Ellis started the first African-American interpretation there, he found many black members of the Williamsburg staff who did not want the subject of slavery brought up. It was embarrassing to them, and they feared that it might compromise them in some intangible way. With time he has changed this attitude and has put together one of the finest programs on this issue in the nation.

Other examples could be cited but we want to look briefly at the experience we have had at the South Carolina State Museum since it opened two years ago. To begin with, slavery and the African-American experience is an integral part of South Carolina that has only recently come to the fore. From the 1708 census until the 1930 census (except for a brief period during the late eighteenth and early nineteenth century), blacks were the dominant racial group in the state.

PLANNING

When planning for the present exhibit program began, it was determined that we had to deal with the issue of slavery. The big problem we saw was the lack of artifacts appropriate for the interpretation of the topic. Looking back, some six years later, this seems to have been made into a bigger problem that it really was. However, because of this we decided that we would not be able to look at the entire slave experience in our Phase I exhibit program. We would start by looking at the slave era during the nineteenth century, since we had several appropriate artifacts from that period. We decided to look at the origins and evolution of slavery, which began during the colonial period, in a later phase.

Once we had established this time frame, we then looked at how we wanted to approach the interpretation. As everyone here knows, an exhibit cannot hope to deal with all that its curator would like it to. Our responsibility was to say something that would bring home, to the visitor, what slavery was all about without overly sensationalizing its inhumanity.

SLAVERY

The legal basis of slavery, as practiced in the southern United States, was that a slave was nothing more than a piece of property. He or she could be bought and sold at the whim of the slaveholder. It did not matter how benevolent or cruel the slaveholder might be - the slaves did not have any legal rights of their own. A slaveholder might grant his slaves privileges, but he could take them away whenever he wanted. To set the atmosphere for the exhibit we chose to design a facade of a slave cabin and install mannequins, two adults just coming in from the fields, an old man greeting them in the yard, and a youth drawing water to wash after a hard day of work.

To go with this we devised interpretive labels that did not describe the scene but that explained the system of slavery that this scene represented. We chose a quote from the WPA ex-slave accounts to lead with, in which slavery was described as "...nothing but hard work and cruel treatment". Visitors, and a few docents, have taken umbrage with this, saying that it does not accurately describe the entire system. More than a few people have said that we should, at the very least, add another quote from a slave about how his master was good and treated him well. There certainly are accounts of this attitude from former slaves. However, this implies that some slaves liked slavery, that it was a benevolent system. As we have already stated, slavery was not created for benevolence, despite what some people might wish to believe. All we have to do is look at the huge exodus of former slaves who left their plantations after emancipation. There is little to suggest that victims of the system wanted chattel slavery to remain.

SLAVE RESISTANCE

Another difficult part of the exhibit is slave resistance. For many, both young and old, there is a myth that slaves received fair treatment. Some people today want to believe that the owners were benevolent. While a case can be made for this in a few places, the important reason for fair treatment was to protect the slave owner's investment, not for some altruistic reason. Slaves were too expensive to replace by the middle of the antebellum era. However, there were many instances of severe punishment for rebellious or insubordinate slaves, for which, in a few instances, slaves were killed for their disobedience.

One of these crimes took place in the 1850s and was recorded by a former slave, in his autobiography, a decade after emancipation. The story has it that a runaway slave was pursued and caught by a white bounty hunter. After the slave had killed several of the hunter's dogs, which had chased him, the bounty hunter killed the runaway in revenge, cut him up, and fed his remains to the surviving dogs.

To quote of this incident is included with the panel on slave resistance, and has led to several protests from visitors who have demanded that it be removed. Some claim that this autobiography is not a valid source because it comes from a former slave. And, of course, these disapproving visitors make note that such actions could not happen. Yet, as I stated earlier, there are more than a few instances during the slave era in which similar acts of murder were carried out. The fact that the quote is preceded by a rejoinder that such cruelty was not a common activity is ignored by the people who claimed to have read the quote.

The use of this information in the exhibition may seem contradictory to the earlier stated premise that we did not want to use sensational actions. However, the use of such a quote points out the ultimate cruelty of the system. It is a dramatic way of bringing home, to the visitor who knows little or nothing about slavery, how vulnerable slaves were to the actions of the slaveholders and their overseers.

THEORY OF EVOLUTION

Although the issue of slavery is a difficult concept to approach, the theory of evolution is just as hard to deal with, but for different reasons. For many people, the problem becomes entangled with religious beliefs when, in fact, the concepts come from two very different avenues of knowledge and beliefs.

In 1859, Charles Darwin published "The Origin of Species", a statement which set the contemporary scientific world on its ear and which has caused considerable consternation ever since. Darwin understood full well the importance and impact of his "theory", but, because of his religious beliefs (he once wrote to a friend that he would rather find himself "a country clergyman" that what he was) he did not publish them for 21 years after their discovery. Even then he published "...Origin..." only because he was about to be "scooped" by another biologist named Wallace, who had independently arrived at the same view.

Since 1859, evolution has been the bane and bug-a-boo of many Christian factions, groups who have a great deal of power over the thoughts and actions of their followers. For example, in Louisiana several years ago there was a replay of the "Scopes Monkey Trial", a fateful day in Tennessee history, in which a high school biology teacher, John Scopes, was "crucified" for teaching evolution.

The Louisiana decision on evolution, however, set the stage for the rest of the country when it was determined that evolution was science and creationalism was not.

How then, based on this background, can a natural history staff teach the legally accepted theory of life on Earth when so many fundamentalist-minded people will be the ones reading the label copy.

"The medicine goes down more easily with sugar..." is an old adage that has relevance here. At no place on the Natural History floor at the South Carolina State Museum is the word "evolution" used. Instead, we speak of "adaptation", or "...gave rise to..." and present it as a theory equal to evolution but one which obviously leaves the visitory less troubled.

We present exhibits that deal with evolutionary concepts, such as plate tectonics and life in the past, but in such a way that the viewer, if a non-believer in evolution, may substitute the word "adaptational" for the unwritten "evolutionary" and the meaning remains much the same, even though more narrow in scope. The student of evolution, or the more open-minded visitor can, however, readily see the implications of evolution for what they are.

Adaptation, in this light, is something of a cop-out. the ideas, facets and subtle nuances of evolution are much more complex than is a simple adaptation to a changing environment. However, the word "evolution" is as repugnant to some visitors as it was to Darwin, who used the word only once in his "...Origin...", and then only as the very last word in the entire work.

CONCLUSION

In conclusion we feel it encumbant upon our position to present socially disturbing topics regardless of public protests. It is the responsibility of the curatorial staff to determine subject material without being coerced by outside museum interest groups, although their input should be sought and considered. The responsibility is ours! In this way we can most ably affect changes in the attitude so eloquently expressed by E. O. Wilson, in his book *Sociobiology*, where he states, "Men would rather believe than know".

HISTORY: SOMETHING THAT HAPPENED TO ME

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ABSTRACT: A major challenge faced by history museums is: how do we connect people to their history? To do so, museums should present history as not something that happened somewhere else to somebody else but rather as something that has happened to each of us. In this presentation, five misconceptions that museums perpetuate will be discussed which foster and increase the distance between museum visitors and history. The conclusion will emphasize goals for preserving and presenting a people's history to help bridge the gaps.
KEYWORDS: History, museums, guided tours, re-interpretation.

HISTORY: SOMETHING THAT HAPPENED TO ME

The post-World War II era has borne witness to the bulldozing of historical neighborhoods and main streets, to the abandonment or suburbanization of rural lands, and to the flight from and urban renewal of inner cities. In recent years, study after study has clearly documented and disturbing ignorance among students of their history, while adults and senior citizens feel themselves removed from the traditional context of family and community. Increasingly, the public is turning to history museums as a touchstone, thereby presenting museums with a major challenge: how can museums connect people to their history?

MEET THE CHALLENGE

To meet this challenge, I would urge that museums strive to preserve and present a more democratic history. I suggest that history is not something that happened somewhere else to somebody else, but rather that history is something that has happened to each of us. I would urge that this message be conveyed more strongly in our historical museums.

I would like to discuss five misconceptions perpetuated by museum interpretations that lengthen the distance between museum visitor and his or her history. In the process, I hope to be something of a devil's advocate, but do not intend to denigrate museums. I recognize that all of us have mistakes and would like to do more thorough research and creative interpretation, if we had sufficient funds, personnel, and time.

THE FIRST MISCONCEPTION

The first misconception is that history belongs to the affluent only. When the historical museum and preservation movement began, it was usually the homes of renowned figures that were saved and exhibited, since these people represented symbols of our past that strengthened our national pride. While the preservation of these homes did serve the purpose of galvanizing concern for the past, we need to develop this concern further and interpret the community context in which these famous figures lived.

In the American south, most of the remaining historical homes on exhibit are the main houses of plantations and the homes of the merchant class, to the exclusion of the homes of agricultural workers, whether slave or free, black or white, even though their houses often constituted the majority of homes on the site and were integral to the world in which affluent whites lived.

For example, historian Peter Wood tells of visiting Thomas Jefferson's remarkable home Monticello, and overhearing a visitor say to her friend, "It's a beautiful place. Do you suppose he had any help?"

THE SECOND MISCONCEPTION

The second misconception is that history progressive. America is the story of the triumph of democracy. It is the story of successful upward mobility. Nowhere is this more strongly illustrated than in the story of Abraham Lincoln, who in the land of promise rose from a humble log cabin to the White House.

This saga of "rags to riches" permeates our historical museums. What we do not see is the story of failures, of farms lost due to crop failures or mortgage foreclosures, or of houses abandoned due to rural poverty and prejudice and the lure of better jobs and a new beginning in the city.

THE THIRD MISCONCEPTION

The third misconception is that history was designed by interior decorators. In so many historical homes, furnishings always appear to be just so, and I always get the feeling that if I sat down with my newspaper and cup of coffee, I would mess things up. I have noticed, for example, that dining room tables are almost invariably properly set, elegantly decorated, and are used exclusively for dining, and for tidy meals at that. Yet consider the multiple uses of dining tables today—for eating everyday meals, for doing homework, for wrapping packages, for putting the mail, and so forth. Our ancestors also needed flat table tops for a variety of purposes and probably adapted the use of their furnishings accordingly. I would therefore urge you to consider breaking the rules and exhibiting something contrary to its obvious function, and to thereby spark the curiosity of the museum visitor.

THE FOURTH MISCONCEPTION

The fourth misconception is that history can be interpreted through artifacts alone. Too often guided tours of historical museums or houses consist primarily of the identification of its furnishings and architectural details. How many times have you visited a museum and heard the guide say, as he or she toured the rooms, "This mahogany table is of the Sheraton period, made in Philadelphia in 1805. And this secretary" However, the major issues of American history contemporary to that period remain overlooked. For example, in antebellum Southern homes, I wonder what the effects were of the Civil War and emancipation? What were responses of the planter family and of the slaves to these great moments in American history?

THE FINAL MISCONCEPTION

The fifth and final misconception is that history is remote, something in textbooks or museums, something that has happened to other people. My clearest experience with this occurred while I was researching a farm tenant house on exhibit at the National Museum of American History at the Smithsonian Institution. During the course of my research, I located families who had actually lived in the house and invited them to the museum to share their recollections for the re-interpretation.

One of these was the Johnson family. Mrs. Johnson visited the house with her son George, who was actually born upstairs in that house in 1923. With them was George's son, Terrance, who had visited the Smithsonian earlier on a school field trip. He distinctly remembered visiting the house and was amazed to learn that it was the home of his grandmother and the birthplace of his father.

OUR MAJOR CHALLENGE

Our major challenge then is HOW DO WE CONNECT PEOPLE TO THEIR HISTORY? My belief is that we can do so by opening up our museums so that they are not for the affluent only, but for everyone; so that they do not just tell the story of success and progress, but of failures and struggles also, and do not just emphasize decorative arts, but the economic, social, and political issues of American history as well.

By being more forthright in our interpretations, we challenge visitors to think, to re-examine their easy, pat answers to the past. We develop their their curiosity, their ability to inquire.

For it is by questioning that we learn. In this way, visitors can come to understand that history is not something that happened somewhere else to somebody else, but something that has happened to each of us, that has happened to me.

INTERPRETATIVE PROGRAMS

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Interpretive programs are essential to our profession. They are the framework upon which we as interpreters create our artistry. They are also the tools which management must use to build a sometimes complex structure, one which will encompass the needs of both the agency and the visitor. Programming is often the very first exposure the public has to us and our intentions. If there is a simple guideline to creating a successful interpretive experience, most would agree that it is this: Hire creative people to do creative programs.

This section highlights those sessions dealing with the design and implementation of a wide range of interpretive programs. All are designed to capture the imagination of the audience. However, they are also reflective of the way our audience has grown and changed with time. Where once we could get by with programs about frogs, or flowers, or Indians, we must now be responsive to an audience who wants, indeed, who needs to understand such pressing issues as global warming, population pressures, and the impact of human cultures on the environment.

The themes included here are diverse. You will hear how zoos develop programs not about animals, but about the Anisazi. You will see a coalition of ten agencies combining forces to deliver historical interpretation to the children of Boston. Artists will become interpreters, and interpreters artists, right before your eyes. Woodchucks will talk to you, not about life in the forest, but about life along a busy highway.

Interpretive programs presented this year will show how a nature center uses a state-of-the-art greenhouse to grow environmental advocates. Another will demonstrate how public agencies and private corporations can work together to create an interpretive plan for one city's historic areas. A third will highlight the joint efforts of a county park system and a zoo to create a new approach to cooperative programs. There is even an interpretive program aimed at the creation of more interpreters!

In baseball, they say you're only as good as your last game. As interpreters, it may be that we are only as good as our last program. When the competition can fill over thirty channels on cable every evening, we have no recourse but to show that we have something better to offer. The interpreters who will present these papers to us bring their innovations and new approaches. Each of them has something you can use. If you're like me, I suspect that your biggest problem will be how to get all the ones we need to see.

HISTORY, RECREATION AND BUSINESS: UNLIKELY PARTNERS AT THE MINNEAPOLIS RIVERFRONT

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St. Anthony Falls Heritage Board
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ABSTRACT: The concentration of historic resources at St. Anthony Falls on the Mississippi River in Minneapolis presents a special opportunity for government, business and civic groups to preserve and interpret the city's history. This opportunity was recognized by State legislation creating the St. Anthony Falls Heritage Board in 1988. The Board, representing the State of Minnesota and City of Minneapolis agencies, was charged with developing a comprehensive interpretive plan for this National Register Historic District.
KEYWORDS: historic interpretation, interpretive plan, partnerships

THE ST. ANTHONY FALLS INTERPRETIVE PLAN

The St. Anthony Falls Interpretive Plan, completed in 1990, proposes an interpretive system that balances the interests of history, recreation and business at the central district. It provides the vision and framework to produce an integrated interpretive system that will capitalize on the rich complex of historic mills, dams, buildings, bridges and ruins still in place at the Falls. The Plan acknowledges the dynamic urban context of Minneapolis by offering many types of interpretive solutions to balance the conflicting expectations for historic preservation, recreational amenity and economic development at the riverfront.

At the heart of the proposed interpretive system is the St. Anthony Falls Heritage Trail. When completed, the Heritage Trail will direct visitors to the historic neighborhoods, industrial sites, archaeological remains and geological features line the Mississippi River. An orientation center, exhibits and a public history program will help visitors make sense of the historic resources that are part of the Heritage Trail. It will be built as a collaborative project by public and private partners, with the interdisciplinary efforts of preservationists, architects, artists and urban planners.

In 1990, a Legislative-appropriated grants-in-aid program is in place to encourage private investment in components of the Heritage Trail. Partnerships are currently being formed as the project emphasis shifts from planning to design and implementation.

ST. ANTHONY FALLS HERITAGE TRAIL

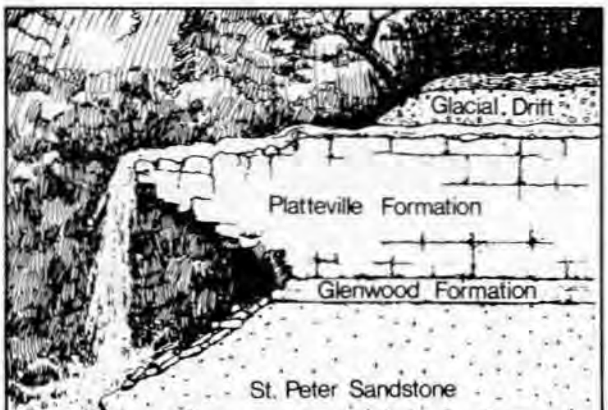
This innovative project in urban history interpretation illustrates the potential for collaborative interpretive planning and project management in a city's central core. Public agencies and private corporations may be unlikely partners in history interpretation, but in Minneapolis it is anticipated that support for the St. Anthony Falls Heritage Trail will derive from all levels of government, citizens' groups and the private corporations whose history is still visible along the banks of the Mississippi.

The outcome of this comprehensive undertaking is a nationally distinctive interpretive program which will stimulate continued revitalization at the Minneapolis riverfront.

THE ONLY CATARACT ON THE MISSISSIPPI RIVER

The Falls of St. Anthony, as they were more commonly called in the 19th century, form the only cataract along the entire length of the Mississippi. They are located approximately 10 miles above the confluence of the Minnesota and

St. Anthony Falls originated near Fort Snelling when River Warren undercut the Mississippi River at that point. Its gradual retreat left an impressive gorge (Ojakangas and Matsch 1982).



The sequence of rocks at St. Anthony Falls (after a drawing by Ann Cross in Hogberg, 1971).

Mississippi Rivers, in a region of deep St. Peter sandstone beds overlaid by a layer of compact Platteville limestone.

The formation of the Falls began at least 10,000 years ago, as Glacial River Warren flowed out of Glacial Lake Agassiz to the area of the present-day Twin Cities

The erosive force of its waters undercut the limestone ledge and wore away the softer sandstone, creating a falls that receded upriver at the rate of about 4 feet per year. The recession of the falls was still ongoing when the Franciscan priest Louis Hennepin recorded his observation of the Falls in 1680, naming them for the patron saint of exploration, St. Anthony of Padua.

At the point where Hennepin saw the Falls, they were near extinction, a fragile feature with a relatively thin limestone layer. The construction of dams and sawmills at the Falls that began in the 1820s served to accelerate the rate of recession as the impact of log drives over the Falls and new construction caused the limestone to joint severely and break off in blocks where it had thinned.

The Falls would have disappeared altogether into a series of rapids had they not been engineered with a series of protective aprons to stop further erosion. Archaeologist Scott Anfinson (1984) notes that

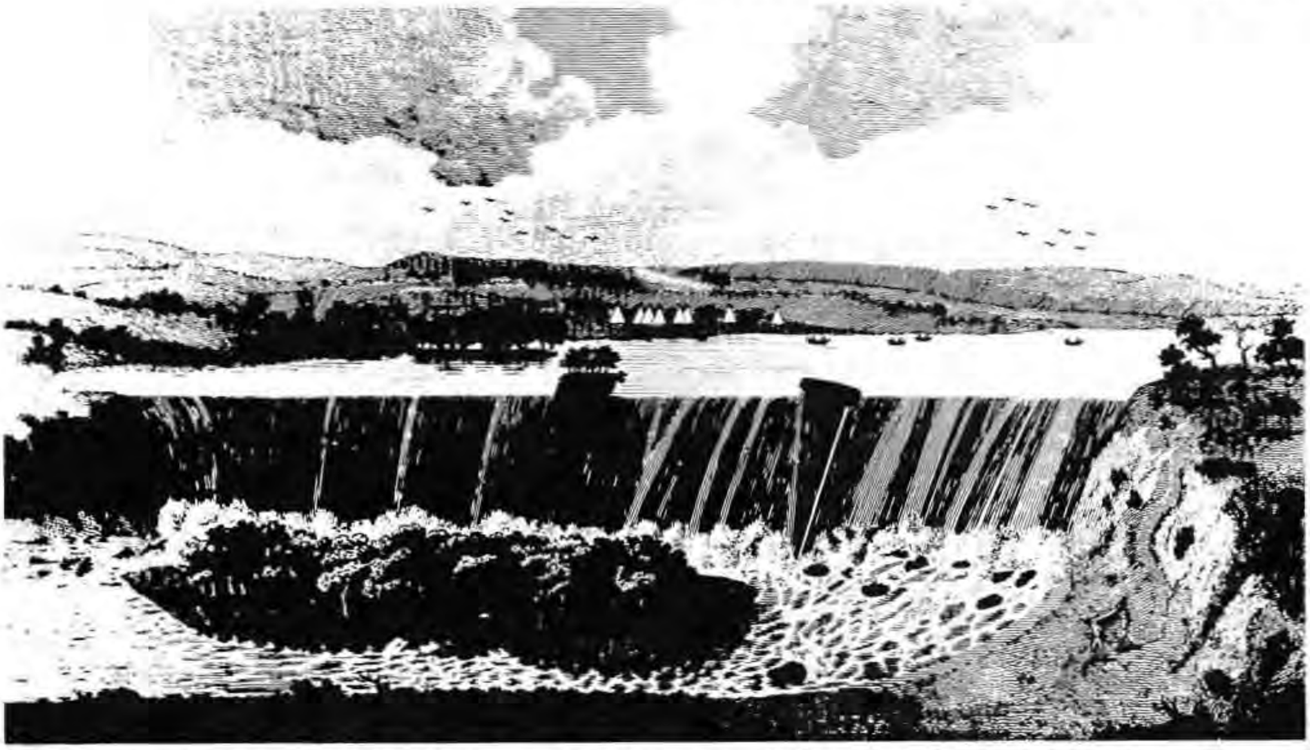
> it was fortunate for Minneapolis that Euro-american exploration and settlement of the North American interior was not delayed a few hundred years.

Since the 1860s, engineering has greatly altered the appearance of the cataract. In its most natural state before dam construction, the face of the Falls was about 16 feet high. Today, two U. S. Army Corps of Engineers dams provide a 75-foot drop over two miles below the Falls.

It is no accident that people have identified the Falls with what they held most important. Dakota Indians called them *"Minirara"*, meaning "curling waters" and the Ojibwa who passed through the area in later historic times called them *"kakabikah"*, meaning "the severed rock". Historian Lucille Kane remarks in her book *The Falls that Built a City* (1966) that the publication of Father Hennepin's observations made the "cataract a widely known landmark in the wilderness".

THE POWER OF THE FALLS

Landscape historian Carole Zellie (1989) reports that nearly all of the earliest accounts gave the impression of a fall of great height and power. The falls' potential as an economic resource, however, was not remarked on by many of the early 18th- or 19th-century surveyors, geologists or tourists.



An engraving of the falls made from a 1766 sketch by Jonathon Carver (Minnesota Historical Society).

The establishment of the military post, Fort Snelling, at the confluence of the Mississippi and Minnesota Rivers in 1819, and the demand for sawed lumber and milled flour, the falls were perceived more as an industrial site and increasingly valued as a source of waterpower for industry. Public commentary about the alterations to the cataract would persist for decades, but its economic usefulness held great value to the growing city of Minneapolis.

Early industrialists promoted the Falls as the Lowell of the West, referring to Massachusett's greatest textile city. In reality, the Mississippi held more power than in the Merrimack, and the hopes of milling entrepreneurs such as Pillsbury, Washburn and Crosby were surpassed in a very short time. Minneapolis's predominance in the flour milling industry was due partly to the availability of the waterpower in the action of the Falls, and partly to the ingenious application of technology drawing off water off the river and through a complex canal and tunnel system into turbines that powered the mills overhead.

At the same time, new milling technologies, which used steel rollers rather than grindstones, moved Minneapolis into the industrial age. The Pillsbury 'A' Mill and the Washburn 'A' Mill, which stand today as National Register historic landmarks, were considered the apex of milling technology in the 1880s. Along with many smaller mills, these huge multistory, masonry flour mills dominated the riverbanks of Minneapolis from the 1880s and into the 20th century. The industry employed hundreds of people and accounted for half the city's manufacturing output.

Industrial expansion was underway in the Mill District in the early 1880s, when 23 flour mills as well as the municipal waterworks, a lumber mill, woolen mill and paper mill were running off the waterpower canal, and a network of railroads was expanding along the riverbanks, some planners had a broader vision for the area.

In her study of the history of landscape change at the falls, Zellie (1989) observes that.landscape architect H.W.S. Cleveland in

1883 recommended in his "Suggestions for a System of Parks and Parkways for the City of Minneapolis" an extended system of boulevards including those along the river, rather than a system of detached parks.

Construction of the west-side canal, 1865 (Minnesota Historical Society).

A CENTRAL RIVERFRONT PARK

While the development of industry, rather than public recreation, presided over the central riverfront for the next 50 years (during which time Minneapolis became the nation's leading producer of flour) the public's attention was directed again to thoughts of nature along the river with the 1917 Plan of Minneapolis by architect Edwin H. Bennett. That plan called for a riverside park lining both sides of the river with a series of low-and high-level drives constructed and the islands below the falls opened for public and commercial uses.

After 1930, when the flour milling industry lead was taken by Buffalo, New York, many west-side mills were burned or razed, and the two decades encompassing the World War II saw developers' attention focussed on the hydroelectric potential of the falls and on harbor improvements. In 1937, Congress authorized a 4.6 mile extension of the Corps of Engineer's 9-foot channel project to ascend St. Anthony Falls into Minneapolis.

In the 1950s and 1960s, with the construction of the upper and lower lock and dam system, several islands were blasted and more mills as well as a number of railroad trestles and bridges were cleared from the district. The concept of a riverfront park surfaced again when planners in the 1940s considered an early proposal for the Great River Road that was to stretch the length of the Mississippi, some 2000 miles from its headwaters at Itasca to the Gulf of Mexico.

Not until the 1960s and 1970s, however, were the recreational and historic potential of the area were assessed in any detail. Numerous planning studies were conducted for the central riverfront during the 1970's, as riverfront property began to transfer from private to public ownership. The St. Anthony Falls Historic District was listed on the National Register in 1971. In 1978, the Minneapolis Park Board received funds to purchase lands for a proposed Central Riverfront Regional Park.

Over the last decade, the adaptive use of many historic commercial buildings within the mill district and the opening of new recreational space along the riverbanks and on Hennepin and Nicollet Islands has attracted new visitors, residents and workers to the area.

Intensive studies of the archaeological and architectural resources of the St. Anthony Falls Historic District identified a wide range of interpretive themes, focussing on the industrial history.

ST. ANTHONY FALLS INTERPRETIVE PLAN

The St. Anthony Falls Interpretive Plan produced this year is among those studies that have added to the the growing interest in the history, architecture and artifacts of the area.

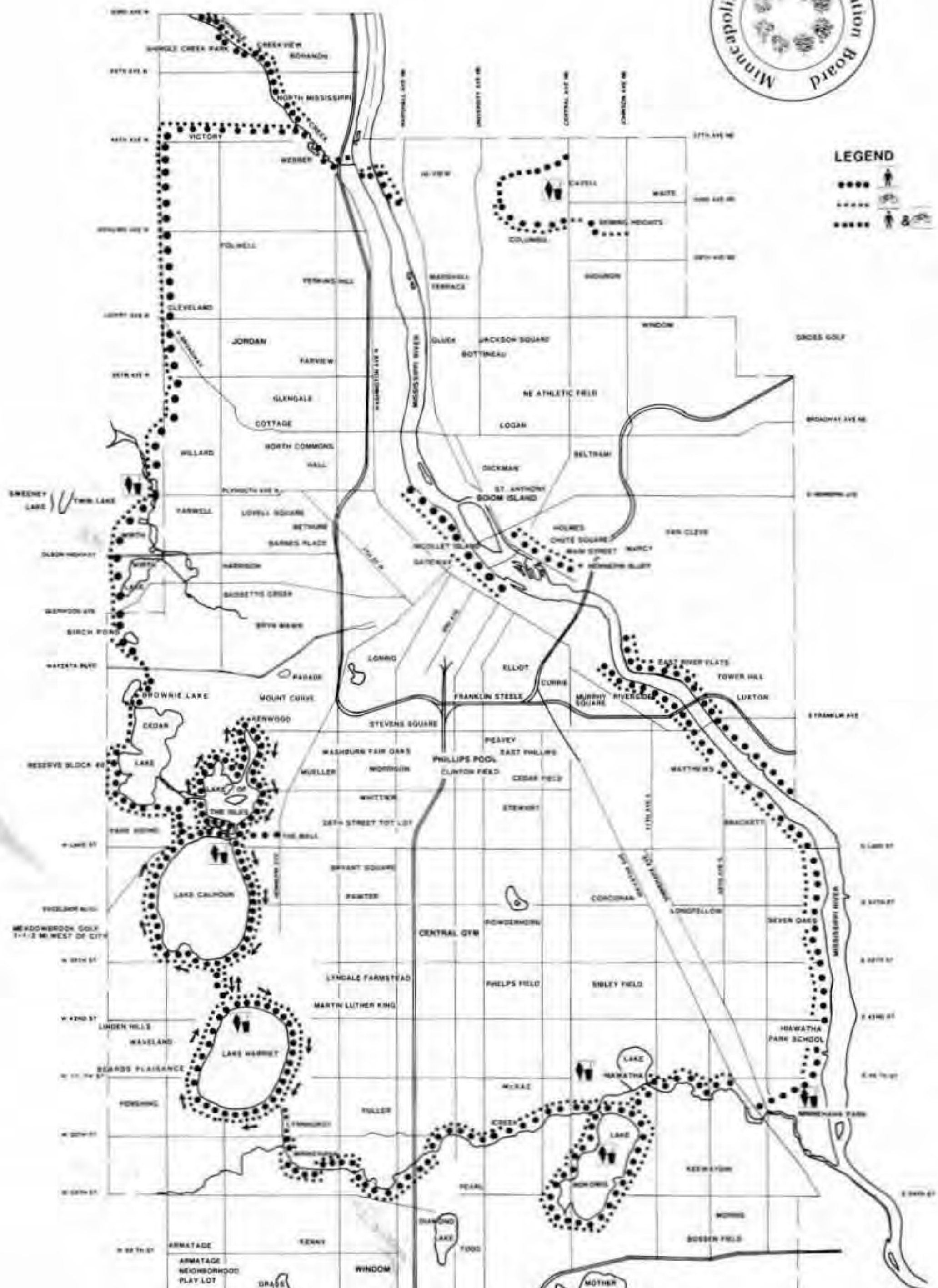
The interpretive system is actually a subset of other sets of plans for the riverfront which have been generated over the last 110 years, plans which have resulted in the transformation of the Falls area from a place of natural scenic beauty to an industrial precinct to recreational space and now a designated setting for historic preservation and interpretation.

The St. Anthony Falls Heritage Trail is at the heart of the interpretative system that will link the area's historic resources (St. Anthony Falls Heritage Board 1990)

For the City of Minneapolis, the St. Anthony Falls project represents an opportunity to capture major elements of what is arguably the most important historic district in the state. The City's expectation of an interpretive system is to *"integrate all the diversity inherent in an intensely urbanized setting"*, develop civic pride and regional identification plus accommodate and complement the recreation goals and economic development set for the historic area. It was further stated in a 1987 Report to the City by the Riverfront Recreation, Entertainment and Cultural Committee states that the interpretive system should become a major regional attraction.

Industry has remained a constant at the riverfront through all the changes in land use and perceptions of the area. Northern States Power Company still serves the downtown district with hydroelectricity generated from the Falls at its Hennepin Island power plant. The Pillsbury Company continues to mill flour at the last operating flour mill at the Falls. As they did a century ago, these industries maintain dependence on waterpower to drive production.

For these and other corporate citizens such as General Mills and the University of Minnesota whose history is tied to the riverfront, the project is an opportunity to participate in a distinctive civic interpretive program that will increase public awareness of their role in shaping the city's image.



Completion of the West River Parkway through the historic district will enhance the interpretive project, linking the Mississippi River with other regions as well as with the chain of lakes that make up the Grand Ronds parkway system in Minneapolis (Minneapolis Park and Recreation Board)

Additional public partners with vested interest in the river include Hennepin County, Minnesota Department of Natural Resources, the U.S. Post Office, U.S. Army Corps of Engineers and the National Park Service. Federal agency participation will be heightened by the 1988 designation of the Mississippi National River and Recreation Area, a 69-mile corridor that includes the metropolitan Twin Cities area.

THE RESOURCES STORIES

The Interpretive Plan states that, through the simple art of storytelling, history can be an essential ally to the success of a revitalized riverfront. In fact, the interpretive strategy is built on the belief that the resources can, in many instances, tell their own stories. Today you can experience the sight and sound of the Mississippi River as it cascades over the spillway at St. Anthony Falls.

You can visit the home of Ard Godfrey, the millwright from Maine who built some of the first sawmills in the area. You can view the Stone Arch Bridge that so swelled the pride of railroad tycoon James J. Hill when it first crossed the Mississippi in 1883.

You can see mills that, over a century ago, revolutionized America's flour industry by pioneering the methods of flour production that are still in use today. Looking up, you see signs that say ***"Pillsbury's Best Flour"*** and ***"Gold Medal Flour."*** With effort you can discover the remains of dams, spillways, log sluices and canals, and imagine the efforts of the engineers who developed and harnessed the waterpower of the Falls.

If you know where to look, you can find evidence of the canal and tunnel system that was built to provide waterpower to the early mills. Clues to the story of the past remain at the Falls, parts of an important story waiting to be told.

INTERPRETIVE OBJECTIVES

The objectives of the project are to:

- create and satisfy curiosity, with stories and access to the historic resources
- present history in place, preserving the structures and ruins, geographical features and views that define this historical landscape
- afford learning opportunities for the anticipated mix of visitors of different cultural backgrounds, ages, expectations and interests
- provide visitors the opportunity to assemble their own portfolio of interpretive activities
- preserve the element of discovery
- program, plan and design the interpretive system simultaneously, in the public eye

HERITAGE TRAIL SYSTEM

There are as many ways to tell a story as there are storytellers. The challenge to the St. Anthony Falls project is to design an interpretive system that organizes the story in ways that enable visitors to make connections between what they see today and what was here before.

Although the Heritage Trail will cover a two mile area along the Mississippi River, it will first direct the visitor's attention to the concentration of historic resources in the immediate vicinity of the Falls, an area that includes mill ruins; historic commercial and residential streets; hydroelectric plants; the Stone Arch Railroad Bridge, a national civil engineering landmark with a dramatic panoramic view of the Falls; and the Washburn 'A' and Pillsbury 'A' Mills, National Register historic sites that 'anchor' the historic setting.

Theme trails will offer an in-depth look at different parts of the story. Separate trails will branch off from the main circuit to follow particular themes: geology, milling, waterpower technology, civil engineering and urban change.One trail will guide people to and possibly through, the archaeological ruins of tunnels, bridges and dams. Another will arrive at the proposed Mill Ruins Park, to be developed from the flour-mill ruins that extend three city blocks along the west bank of the Mississippi below the Wahsburn Crosby mill complex.

Others will lead travelers to sites of early sawmills and rail yards and possibly through an operating flour mill and power plant. Still another will explore the natural landscape: the high bluffs, chunks of limestone remnants of the original cataract, riverbank evidence of a geological past. While the major impact of the trail system will come from the discovery of the historic resources themselves, interpretive signs and guidebooks, organized tours and events and the orientation center will complete the system.

A VISION FOR ST. ANTHONY FALLS

The size and complexity of the project calls for a phased implementation and co-operative funding. In the first phase, the Heritage Trail will be designed, marked and lighted for pedestrians, with a mix of private and public funds.

A temporary orientation center will be opened while a site selection study is conducted for a permanent center. Planning and design will continue for specific interpretive features, exhibits and tour programs. Components of the interpretive system will be developed as partnerships are formed and participants take advantage of the grants-in-aid through the St. Anthony Falls Heritage Board.

INTERPRETATION PARTNERSHIPS

The success of the St. Anthony Falls project will not come easily or quickly. The 1977 plan for the Central Riverfront by the architectural and planning firm of Sasaki Associates, with its emphasis on the establishment of a trail corridor and interpretive system, provided a vision of what might be without the detail of how that might be achieved.

Ten years later, the research and lobbying efforts of the City of Minneapolis and the Minnesota Historical Society helped convince the State Legislature to establish the St. Anthony Falls Heritage Board in 1988.

The ***St. Anthony Falls Interpretive Plan*** (1990), contains a broad physical plan, an implementation process and proposes a strategy for managing the interpretive system through a series of public/ private partnerships. Anticipating a capital expenditure of $37 million to develop the project, the associated agency planners and corporate partners are considering precedents set by other partnership parks across the country where public and private lands mix under a variety of management structures. The August 1990 issue of *Planning* points to several successful examples of cooperative management and interpretation:

- The Illinois & Michigan Canal, a 100-mile national heritage corridor (designated 1984) that once connected Chicago to the Mississippi River, and today takes in a heavily industrialized landscape;

- The Cape Cod National Seashore, a "greenline park" (designated 1961) that encompasses a linear patchwork of beaches, nature preserves and private property; and

- Lowell, Massachusetts, the historic textile mill town outside of Boston that shook itself out of economic depression by investing in historic preservation. State, local and federal investment in the urban heritage park (designated 1978) has resulted in a dramatic increase in the numbers of visitors (800,000 in 1988 from virtually none 10 years earlier). Karen Sweeney Justice writing for the The National Park Service (1990) credits the success of the Lowell project to the community leaders, who together with State and federal agencies, developed an urban heritage park as the anchor to transform the city's resources into an interpretive and educational opportunity.

Since 1975, the city has attracted almost $1 billion dollars in investment, of which $170 million has been in State and federal grants which have leveraged private investment in rehabilitation and new development (*Progressive Architecture*, June, 1990)

GOOD HISTORY, RECREATION AND BUSINESS

The same opportunity exists in Minneapolis, with the advantage of a prosperous economy, a rich concentration of historic resources and the expressed interest of government and private partners. The project currently operates with an annual planning budget of $100,000, renewable through joint funding agreements between the State and City of Minneapolis. Project planning and administration are funded through memoranda of agreement between the State of Minnesota, the City of Minneapolis and the Minneapolis Park Board.

What remains is attracting investment dollars, including state and federal grants and private investment in the interpretive system. This will be played out over several years, as the trail system is developed with corporate sponsorship and demonstration projects.

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"DOCTORING FAIRY TALES AND FABLES": EXTRACTING YOUR MESSAGE FROM THE CHARACTERS OF OLD

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KEYWORDS: Storytelling, Halloween Trail, Costumed, Characters, Script-writing

"VELCOME"

"Velcome, my young friends, it is good to see so many fresh scrubbed faces come to my October batting clinic. Did you remember to scrub behind your ears and wash the sveat from your necks? You know it is distasteful to have sveat on your necks? " The Count, in black cape with white shirt and ascot, sports a baseball cap with batting helmet and an assortment of baseball bats by his side. The lantern-lit scene at Durant Nature Park's Halloween Trail will slowly, inevitably, progress to a discussion on the virtues of bats, but this is how we have chosen to initially engage our audience.

The idea of using characters from fiction and lore to relate information is obviously not new, advertising agencies have used it for years, but its use in interpretation seems to be gaining ground. Our first experience with the potential for the concept arose during a mid-1980's AIN workshop in Seattle where Tim Merriman described his successes with Halloween and Easter Trail characters at the Nature Center of Pueblo. Since then we have learned that many other programs have experimented with the format, and we remain stirred and committed by the creative process engendered.

WHY DOES IT WORK?

There remains some resistance within the interpretive community in the use of entertainment to further educational goals. And rightfully so since the appeal of pure entertainment can quickly usurp the primary function of an interpretive center. Still, when used properly and blended with concrete educational goals, we believe using entertainment can enhance one's program and open up the educational process for many who might not otherwise be interested. We believe this is so for these reasons.

First, as its basis, we are using recognizable literary or dramatic figures to command an audience's attention. When people see Snow White or approach the Cowardly Lion they feel connected by their previous experience with them. We use that common background in our interpretive narrative but develop the script to make our own discernable point.

Second, much of what we do involves a degree of storytelling. Through the 1980's there was a genuine renaissance of storytelling in the U.S., generated in no small way by the success of Garrison Keilor's "A Prairie Home Companion." There was a blossoming of numerous storytelling festivals, such as that in Jonesborough, Tennessee, in our own community, Raleigh, North Carolina, and across the country.

Finally, we have an entire generation of young people who have grown up listening and learning from life-sized muppets on Sesame Street. At age seven my nephew best expressed this openness to life's possibilities when he queried, "Okay Mom, so there's plants, there's animals, there's people and there's muppets. Now, is there anything else?"

It's a generation interested in the information costumed characters can provide. And Jim Henson learned long ago that familiar, interesting characters help young people internalize the learning of concepts. It's a formula that works!

ADVANTAGES?

Let's explore some considerations you should make to determine if costumed characters from fiction and lore can work for you.

•Flexibility—There are an infinite number of options in developing storyline narratives for characters. Since we limit our narratives to under 5 minutes, we can re-work them quickly if we find we need to change a narrative to enhance audience response or to re-direct our message.

•Performers—All of our performers are volunteers; some work in community theatre or as teachers, some have little experience in front of an audience. Our original cast involved an interpretation class from NC State University. Since the scripts are short, they are easy for a novice to learn. We do provide some interpretive skill training and hold a rehearsal to insure quality performances. By using volunteers, we save money and choose to use our professional storytellers for larger audience events.

•Low Cost—Since the performers are volunteers we minimize program costs, except for performer training and developing narratives. The costumes and props are kept simple and generally involve a non-recurring expense. Scripts and characters are rotated through the years to keep the programs new and fresh, yet they remain part of our inventory and are always available for use.

•Your Message—Your staff has direct control over the content and quality of the information and program which is presented.You don't need experts handling questions or those with special knowledge or skills.

•When Appropriate—We've found costumed characters to be particularly useful in special event settings; both as "sites" along a character trail (e.g. Halloween Trail) or as "mobile" magnets or attention getters in large outdoor gatherings. We've also seen costumed characters perform effectively in impromptu settings along well trafficked walkways at zoos, and even in the Science Museum Gallery in St. Paul, Minnesota.

DRAWBACKS?

•Performance Quality—Since you are working with volunteers, you've got to screen them for reliability and performance ability. Can they speak with a Transylvanian accent? Will they show up for rehearsal and the event? How many performances can they endure? You must be willing to train them, build their confidence and congratulate them for a job well done.

•Costumes/Props—Professional storytellers provide costumes and props, volunteers generally do not! Still, you're in charge so you can accentuate or minimize your efforts in this direction. Choose carefully.

•Audience Size—Group audience size must be small, 15-30 is ideal. We never amplify the characters' voices, instead we have the character offer multiple performances (5-10) over a 2-hour time period.

•Scripts—Script writing can be fun, and it can be torture! Give yourself plenty of time. As with any writing, it's helpful to develop outlines and drafts, then set it aside for a time. Have assistants review. Be open for suggestions. Don't be afraid to be silly, contrived or outrageous. Enjoy your successes, be ready to re-work when necessary.

•Who Owns the Scripts?—A touchy subject for a serious artist. We've chosen to write our scripts at home on our own time, to protect the copyright. Our agency would not agree to share ownership. You decide.

DEVELOPING YOUR NARRATIVE

The Count replaces the Louisville Slugger with a model of a Big-eared bat.

"Consider how long these bats have been here. They have been flying for thousands of years. And so many kinds...like Big-eared bats and Leaf-nosed bats. So many kinds eating so many insects. In fact, I've heard that one bat can eat 1,000 blood-sucking mosquitos in one night! Imagine, 1,000 blood-sucking mosquitos? Who needs the competition?"

In drafting the script for the Count, we assumed his audience would be families with children 4-12 years of age visiting during an evening of Halloween week. With that information, many pieces of the narrative puzzle fall naturally together.

SELECTING YOUR MESSAGE

Once you have decided to use costumed characters you can begin the process of drafting your narrative. First you must determine whether certain characters need to be included...Dracula or Merlin seem naturals for a Halloween event...or are you completely open? Do you have constraints in terms of the information you need to present...is this a river or forest awareness-type of event where Tom Sawyer or Paul Bunyan would fit. It is best to select characters who naturally fit your program format; guests who may appear as a "surprise," but "not totally unexpected," at your event.

Next, you research the character's background...their story. We prefer *not* to retell their original, instead we extract our storyline from useable bits of the tale. This will help your audience recognize and relate to the character even as you lead them through a new story.

In our Dracula, the Count makes lip-smacking references to scrubbed necks and blood-sucking mosquitos because he and the audience remain interested in that component of his life, even as he has assumed a role as "bat conservationist." In our review of a script for Thumbelina we discovered we had an array of storyline options...she became involved with moles, toads, swallows, and flowers, among others. Eventually, after a thoroughly enjoyable brainstorming session, we elected to use her "Queen of the Flowers" motif, while developing her as a grand "Designer of Flowers" currently working on her "spring collection."

COSTUMES

Keep costumes simple yet recognizable. We've had success finding workable pieces at thrift shops and flea markets. For specific roles we have borrowed costumes from community theaters, or rented them. Offering night programs with subdued lighting makes it easier.

If props are important to the storyline, make sure they operate properly. Do not waste effort on details for costumes or props. Remember your message is your mission, and nothing will carry a poorly written or delivered script.

INTRODUCTION

Perhaps the most critical part of your narrative is when the audience first meets the character. Make sure your opening line engages that audience in some way...with some recognition of their arrival, or even that they've become part of the set.

At our Mad Tea Party, a script describing the delights of wild herbal teas, the Mad Hatter begins with a scolding of the March Hare: "I say, dear friend, are you the Mad One? There's no room! No room! My invitation made no mention of these guests." The Hare responds: "Actually, my dear mad boy, I haven't the London foggiest idea as to who these people are or from where they came."

Keep your narratives brief with a directional theme, one central focus or idea. Have a simple educational point with the rest being engaging entertainment.

USE HUMOR OR DRAMA

Generally you'll have mixed-age audiences and your scripts should have some appeal for all. Use humor liberally when appropriate, and dramatic gestures, motions and twists of fate where applicable. Adults particularly appreciate subtleties in humor that you interject.

Our script for "Blanche, the Black Widow Spider" describes her "wish list" of qualifications for a mate: "Commitment: none required. I don't want a husband who plans to hang around a long time."

And parents enjoy seeing their children worked into the narrative. In a Wizard of Oz script Dorothy tries to explain to the Cowardly Lion the concept of endangered species:

Dorothy: "Imagine a time when there wouldn't be, say, munchkins anymore. Like they all die and there aren't any left. Ever again."

Lion: "No munchkins. Egad, that would be sad."

Dorothy: "Right!"

Lion: "But there seem to be plenty of munchkins around now. Just look for yourself." (pointing at children in crowd)

For the youngest in your audience, the costumes and ambiance are often enough.

DISMISSING YOUR AUDIENCE

If the introduction is the most critical time for the audience, then the dismissal is the most critical task for the performer. Write your narrative with a clear "time to go" message for your visitors.

The Count concludes: "That's why I love mosquito-eating bats, and why I'm so glad you've come to my clinic. Now go and tell others. Saving bats can save blood. And the blood you save may be mine, or it may be meant to be mine. It could be yours (pointing to a member of the audience). Now better go before the sun rises. Good bye."

IN CONCLUSION

The beauty of developing narratives for costumed characters is in the creative process, start to finish, that you and your staff undertake to enhance your educational efforts. We use our approach both with characters from fiction and folklore and with more realistic renditions of insects, plants and animals.

We've received an enthusiastic response from our programs and from those not aware of our more traditional programs. We hope others might explore the potential of this interpretive tool. "Velcome, Velcome, Velcome......

GAIA CALLING: INTERPRETING CRITICAL RESOURCE ISSUES THROUGH THE ARTS

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Also: LINDA YEMOTO, Interpretive Specialist, East Bay Regional Parks
LINDA FISCHER, et al., VIVA EL PASO! dance troop
and others

ABSTRACT: Most resources managers operate in an intellectual setting, primarily using left-brain media. Yet many resources users and constitutes perceive a place or issue first and foremost in an emotional context. Managers must use both emotive and intellectual approaches to communicate vital resources issues. The performing and visual arts are an effective interpretive tool. this presentation is a potpourri of interpretive arts communicating issues such as loss of species diversity, fire management, wilderness values, and conservation history. Through legends, drama, dance, poetry, and music, the audience will experience first-hand the power of the arts. The second half of this program will be a panel discussion with all the artist involved, focusing on hows, whys, wheres, and whos of using the performing and visual arts.
KEYWORDS: science, interpretation, visual arts, communication

BACKGROUND

As resource managers, most of us have training in science-related fields. We operate in an intellectual setting and communicate the vital messages of our profession primarily through logic, using left-brain media (books, papers, public meetings). We are trained to develop, present, and justify our positions and management decisions in a logical, intellectual manner. This is appropriate.

Most of us are less comfortable with, and some downright suspicious of, "emotional approaches" toward communicating our resources management efforts. Critics of our management efforts or values may often be described as having "too emotional" a perspective or presentation, one "unsubstantiated by facts." Yet, it is a fact that humans first react emotionally, then apply reason to develop an intellectual framework and response to a belief, situation, of event. Users coming to an area and supporters (or critics) at home consider the area or issue in the context of emotions first, intellect second.

In most of the systems where we work as well as the society in which we live, the process of moving up the managerial ladder filters out free-associative thinking and rewards linear thinking, so necessary for good management. The largely based upon left-brain thinking. Logic and cause-and-effect actions soon become the only rationale for action.

An intuitive approach, less easy to direct, measure, or defend, is discouraged. Thus, it is often a mystery for managers to support interpreters or public information specialists who attempt to communicate resource values to the public in forms other than traditional intellectual ones. How does a manager take the risk of developing a balance of emotive and intellectual messages, and how does an interpretive manager find us, and reward those non-traditional, right-brain communicators?

JUSTIFYING RIGHT-BRAIN COMMUNICATION FORMS

We must systematically develop ways to communicate resource values and issues, not only by a left-brain approach, but also through a more "emotive" approach, appealing to the right-brain. One particularly effective way of doing this is through the arts. There is nothing new in this approach...some of the oldest forms of communication are storytelling, imagery, painting, drama, and music.

These tools were the foundation of civilization, and continue to be of utmost importance in native societies throughout the world. The use of artistic media is simply a rediscovery and practical application of basic communication skills of the past. The arts are a universal language, expressing both cultural and natural history. Legends and folk songs, for example, are primary historical documents...a direct interpretation of people as they saw themselves and their times.

Our present-day artistic expressions of current of past times, resources, and values is also a direct interpretation can be used to gain visitor participation, to promote creative self-expression, to build rapport. It can be used very effectively to change attitudes. the arts have a magnetic appeal, and their use to appeal to the emotions of viewers can pave the way for the intellectual message, encouraging a left-brain understanding and commitment to action on the part of the "audience."

PROGRAM DESCRIPTION

This program attempts to provide examples of the effectiveness of artistic approaches toward communicating values and issues. Through actual examples of performing arts it will demonstrate to managers and others the potential of using a left-brain approach to communication. Following that, the discussion will provide interested persons with the information, contacts, options and resources needed to develop a successful program or communication process.

Although managers may not versed in these communication approaches, they can develop liaisons with community resources and encourage their own staff to experiment in using these open-ended approaches. The arts can assist in communicating both interpretive messages and management actions. They can increase public awareness of and commitment to action about serous global and local resources issues.

APPLYING BIOLOGICAL PRINCIPLES TO COOPERATIVE EDUCATION PROGRAMS

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ABSTRACT: Survival in the natural world requires that organisms interact, adapt, and evolve to rapidly changing environments. Cooperative education programs that exhibit similar survival characteristics will not only survive, but prosper in the future. While cooperative education programs have come and gone with many interpretive agencies, cooperative education programs in the San Diego region of southern California have adapted and evolved to fill the needs of diverse agencies. Park agencies, universities, and cooperating associations have adapted to creatively meet the many challenges faced by interpretive professionals.
KEYWORDS: cooperative education programs, student interns, supervision and evaluation.

INTRODUCTION

Cooperative education programs have exhibited survival rates similar to endangered species. Some prosper, some hang around for a while, and the rest become extinct. The demise of many cooperative education programs is due to the failure of the agencies involved not to follow some of the biological principles that they are so good at interpreting. Cooperation, mutualism, interaction, adaptation and evolution (for you members of the faith) have contributed to survival of species. These same biological principles can also insure the survival of specific interpretive programs and contribute to the growth of the profession.

A basic component of a cooperative education program is to have bright, eager to please, willing-to-leap-tall-buildings-at-a-single-bound supply of students. Universities that offer degree programs in any discipline of the biological, physical or social sciences would be willing to participate in a cooperative education program.

Another basic component is to have an agency willing to commit to the arduous task of initiating, supervising, maintaining and evaluating participants in the cooperative education programs. Cooperative education programs or their hybridized name changes (internship programs, field work experiences, volunteer programs, etc.) mandate that all parties involved, communicate and interact with one another to meet common goals.

In cooperative education programs affiliated with San Diego State University, those that are successful have displayed biological principles of survival. All parties involved have surveyed respective needs, interacted with each other, cooperated with one another, mutually supported each other, adapted to financial and personnel developments, changed from informal to formal cooperative education programs over time, and finally, evolved administrative mechanisms to survive.

CABRILLO NATIONAL MONUMENT: NATIONAL PARK SERVICE

Cabrillo National Monument offers a cooperative education program to college students through the Volunteer in Parks (VIP) program. Other programs exist within the National Park Service, such as the Student Conservation Association which attempts to match students from areas all over the country with a park. Due to the high cost of living in San Diego and lack of housing for students, Cabrillo National Monument does not recruit from outside the San Diego area. Most students come from San Diego State University's Department of Recreation where field work and internship are required of every recreation major. Cabrillo National Monument is a small but diverse park interpreting seven different historical and natural themes. Because of this, flexibility exists in providing an interesting and challenging cooperative education program.

GOALS AND OBJECTIVES. The overall goal of the program at Cabrillo is to provide the student with a hands-on introduction to the daily operations of Cabrillo National Monument and the National Park Service, and teach the student new job skills. The student spends an appropriate amount of time working in each division of the park. An example of this might be that the student will "shadow" the fee collection supervisor for one shift, track a money transmittal and accounting procedures during another shift, and scan the NPS Guidelines for fee collections. Hopefully, the student will be a marketable candidate for a career in parks and recreation based partially from their experience at Cabrillo National Monument.

The specific objectives vary for each student depending on their previous experience, interests and what can be reasonably accomplished in the semester. For example, one student, given adequate training, will research, develop and present a 15 minute interpretive talk about the Old Point Loma Lighthouse several times by the end of the semester.

PLACEMENT. Based upon counseling sessions that identify career objectives, students from San Diego State University are encouraged to contact the volunteer coordinator at Cabrillo National Monument. The coordinator's role is to interview, place, train, supervise and evaluate the volunteer during their stay at the park. After the student has been interviewed and accepted as a volunteer, they are given an orientation to the park and to the National Park Service. Orientation usually lasts about 12—16 hours. During this time the coordinator will work with the student to arrange specific objectives to be accomplished during the semester.

WORK/ SCHEDULE COMPENSATION. Students in the field work program spend 10 hours per week in the park and are compensated for their mileage. Students in the internship program spend 20 hours per week and are given a stipend of $50 per week funded through a donations account. All students are provided with a volunteer uniform.

They are encouraged to volunteer beyond the semester time period to gain additional expertise and confidence. Most students have volunteered for one year or more and moved on to either a seasonal position within the park or are hired by other park agencies.

JUNIOR RANGER DAY CAMP: SAN DIEGO COUNTY PARKS AND RECREATION DEPARTMENT

The San Diego County Parks and Recreation Department has entered into a cooperative agreement with two other organizations (San Diego County Parks Society and San Diego State University) to provide a valuable educational experience for San Diego children. The county parks system is comprised of parkland of great diversity and an environmental education center for program planning and operation. Due to budgeting constraints, the parks department is unable to devote personnel to conduct intensive programming in environmental education.

To remedy this budget problem of having a facility, but not enough staff, the San Diego County Parks Society (non-profit cooperating association) has offered their financial assistance. The Parks Society provides the funding and administrative support to develop a Junior Ranger Day Camp staffed by student interns from San Diego State University. The ten week Junior Ranger Day Camp is offered at three sites throughout the most urbanized areas of the county and employs six student interns with the capacity to reach 60 students per week. The weeks are organized into themes and each week is a separate program.

GOALS AND OBJECTIVES. The goal of the Junior Ranger Program is to enhance the children's awareness, understanding and concern for the environment. In return the department garners support for its primary goal and first priority, the protection and preservation of its environmental assets for the appropriate use and enjoyment by the public. A goal of the Parks Society is to assist the Parks Department in promotional and educational programming and to further the goals of the department. The Park Society serves as a vehicle for the attainment of Parks Department goals.

PLACEMENT. Students are recruited at San Diego State University. A competitive application and interview process selects the most qualified student to meet interpretive and recreational skills needed by Junior Ranger Day Camp staff.

WORK SCHEDULE/ COMPENSATION. Two student interns are assigned to each park and are responsible for the day to day operation of the Junior Ranger Day Camp. Student interns are required to attend training meetings during the spring semester and are salaried to work a 10 week/8 hour day during the summer. The hourly wage is $7.89 per hour during the ten week summer Junior Ranger Day Camp. Students selected for this cooperative education agreement can earn six or twelve units of credit for graduation requirements.

COOPERATIVE EDUCATION

AGENCY BENEFITS (Getting More For Less). Common to many interpretive agencies is a lack of funds to hire adequate number of personnel to interpret resource themes. By participating in formal or informal cooperative education programs, agencies can access large pools of well qualified students who have career aspirations in interpretive services. Fair compensation is an individual agency determinant and is negotiable on a case by case basis. Scenic landscapes and wilderness hiking opportunities may make up for minimum salary compensation.

COOPERATING ASSOCIATION BENEFITS (Creative Administration). Cooperating associations, park societies, friends of the park groups, and other non-profit support organizations offer innovative, responsive ways to administer formal or informal cooperative education programs. Recruitment, personnel practices, wages, honorariums, stipends, uniforms, supplies, contingency funds, etc. can be administered by cooperating associations in a timely manner that supports interpretive goals and objectives. Financial support is often immediately available when it could not otherwise be authorized under governmental standard operating procedure.

UNIVERSITY BENEFITS (Applying Theoretical and Applied Skills). Annual accreditation of universities require not only the academic rigor of scholastic courses, but in applied disciplines, the incorporation of an internship or similar field experience as a requirement of graduation. Universities that offer degrees in park management,interpretation, and outdoor recreation are actively seeking internship opportunities made available by cooperative education programs.

PROFESSIONAL BENEFITS (Our Legacy—Our Future). While being considerate of sex, ethnicity, and physical ability, what is the interpretive profession doing to hire the best and the brightest folks who want to be interpreters? The interpretive profession is only as good as its members. While this may appear to be overstating the obvious, cooperative education programs offer the nearest thing to a money back guarantee on hiring the right person for an interpretive agency. Cooperative education programs carry no guarantee of full time employment. Yet, the interpretive agency can over the length of the student's tenure determine whether or not that individual is a prospective employee who deserves agency sponsorship. Cooperative education programs provide a legacy and a foundation for the future.

PARTNERSHIPS IN EDUCATION: COLLABORATION FOR EXCELLENCE

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"LOWELL IS UNIQUE". "LOWELL, COOPERATIVE PARK".

These are two statements I have heard since starting my tenure at Lowell National Historical Park in 1980. Looking at other National Park areas, however, I soon realized a couple of points. In fact, "all" Parks are unique in their own way and many of them are as "cooperative" as Lowell. But why the steady stream of national and international visitors to see this Park? Why the statements of awe and disbelief that a revitalization effort and celebration of history and culture could not work in their communities? The tremendous cooperative spirit in the community? The answer to both of these questions emanates from Lowell's resources and the tremendous cooperative spirit in the community. These factors came together to turn around an economically depressed city and celebrate its nationally significant heritage which contributed to the growth of America in the Industrial Age. The National Park works with many partners to tell this story.

Lowell is a city of fourteen square miles with approximately 100,000 citizens. It was created in the 1820's by a group of Boston investors who were looking to expand the successful factory system they had developed in Waltham, Massachusetts. Here on the Merrimack River they could derive ample waterpower from a 32-foot falls, while their technical expertise allowed the planning of a waterpower system. Along the river banks, plenty of available land could be developed into mills and worker housing, creating the most significant planned Industrial City in the United States. 5.6 miles of power canals brought the power of the river to 10 different cotton textile mills and a major machine shop. A Boardinghouse system was designed to house Lowell's original workers, those daughters of Yankee Farmers called "mill girls", later to be replaced by immigrants. Developments in waterpower technology and machine engineering placed the Lowell Factory System in the vanguard of industrial city development for the rest of the century.

THE GLORY DAYS OF LOWELL

The glory days of Lowell would end after the tuen of the century with the demise of the cotton textile industry in the North, caused largely by the flight of investment capital. Cities such as Lowell hit hard times with high unemployment and abandoned buildings, and left the community with a poor self-image.

This depressed condition would dramatically turn around through a grass roots effort. Local community leaders, disenchanted with the "urban renewal" or "urban destruction" approach, successfully spearheaded an effort to use the tremendous historical resource of Lowell's past, which was largely still in place, as an anchor for an economic and spiritual revitalization.

By 1975, Lowell Heritage State Park was established and by 1978 the Lowell Historic Preservation Commission and Lowell National Historical Park were in place.

The importance of partners in cooperative activities was emphasized from the beginning of the Park. The list of cooperating groups is long and, in some vases, overlapping. Volunteer community groups are key components. The Greater Lowell Regatta Festival Committee, for example, is made up of over four hundred volunteers who participate in both the management and operation of our many special events. The Regatta's management involvement includes contacts with community leaders, financial expertise, and coordination of over twenty-three ethnic festival groups. They also stepped in to provide a vital service to the Park when our contract canal boat operator shut down shortly before the beginning of the 1987 summer season. On very short notice, the Regatta assumed contractual responsibility for the canal boat operation. The personal and philosophical commitment from the individuals who make up the Regatta is inspirational.

THE LOWELL PLAN

The Lowell Plan and the Lowell Development and Finance Cooperation (LDFC) are a group of businessmen, bankers and community leaders who provided seed money for the planning of the Tsongas Industrial History Center, which will be discussed elsewhere in this article. The Lowell Plan's support of cultural programs has had a direct impact on quality of life issues which affect visitors in the form of public art and special events. This involvement has expanded into the newly formed Office of Cultural affairs.

Traditional organizations such as The Lowell Museum, the Lowell Historical Society and the University of Lowell's Special Collections Department have cooperated with invaluable assistance and materials for exhibit collections and displays. We are also formalizing Cooperative Agreements with the New England Quilt Museum, The Whistler House Museum of Art and The Brush Art Studio to form an educational collaborative for students. This educational effort will allow coordination of thematically related visits which will combine programs on art in the Industrial City, textile history, architecture, etc. with visits to park sites which focus upon Capital, Power, Industrial City, Machines and Labor—the Parks' interpretive themes.

Our most ambitious and far reaching partnership is with the Tsongas Industrial History Center. This Center is an outgrowth of our existing partnership with the University of Lowell. This exciting idea had exploded into a center which will become the educational arm of the National Park in Lowell and will be in a position to provide substantial assistance throughout the Region and beyond. The University is responsible for funding salary for the Director and staff while the National Park is providing the space.

We are then combining our resources to plan and develop curriculum based programs. The Center is a place where students and teachers can "do" history in new hands-on test their models with water, and compare their results with the existing system. They will be able to role-play real life scenarios which affect immigrant people, past and present, and then explore the immigrant neighborhoods and see the shops which were once Irish, then Greek, Portuguese and Spanish and are now Cambodian or Vietnamese.

THE TSONGAS CENTER

The Tsongas Center will also work with teacher opportunities for intellectual enrichment and have them participate in the production of curriculum materials, evaluation of the program, and operation of the Center.

We list forty-six organizations in our Statement for Interpretation and mention how each contributes to the overall success of the Park. These cooperators and partners range from the City of Lowell to the Chambers of Commerce, the Convention and Visitors Bureau, the School Department, the Rotary and Kiwanis Clubs, and the Merrimack Repertory Theatre. The community feeling of ownership of the Park has been immeasurable.

Park cooperators and Park neighbors, who live down the street or in the senior citizen apartments in the mill complex above the Visitor Center, feel no hesitation in seeding us out for positive or negative criticism. The "WE" referred to is the collective community, in which the State and National Parks are included.

Issues of control, finances, expectations quality and evaluation all have to be factored in the partnership. Yet, the greater common goal soon overshadows these concerns as successful results satisfy everyone and there is plenty of credit to spread around.

As we move toward the twenty-first century, the Park Service will either face new challenges or reface old ones. The expanded use of non-traditional partnerships in managing park resources and increasing the scope of interpretive programs makes good sense and results in stronger community ties, community support and enhanced visitor services. The more we can be identified as a "WE" instead of a "THEY", the more successful our organization will be achieving our cultural, environmental, resource management and recreational missions.

PARK RANGERS AND MUSEUM EDUCATORS IN COLLABORATION: "MANAGING TO MAKE IT WORK"

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ABSTRACT: The People and Places Program is a menu of educational experiences designed to introduce fourth grade students to the history of Boston. Students visit downtown historic sites where a variety of interpretive strategies are used. Site staff and students use combinations of role playing, debates, hands-on activities and walking tours to look at historical events and personal perspectives connected with the sites. What makes People and Places special is the depth and breadth of historical interpretation, and the fact that the program is a collaborative effort of:

The Museum of Afro-American History (African Meeting House)
Boston African American National Historic Site
The Boston Public Schools
Boston National Historical Park
The Bostonian Society (Old State House)
The Freedom Trail Foundation, Inc.
Old South Association in Boston (Old South Meeting House)
Paul Revere Memorial Association (Paul Revere House)
United State Navy (USS CONSTITUTION)
USS CONSTITUTION Museum Foundation

Sites work with another partner to develop a thematic presentation. Please see the attached brochure for a list and description of the topics. In our paper, we will explore what collaboration can offer to sites and how it can be used as an effective management strategy to reach a particular audience, the schools. We will use The People and Places Program as a case study to generalize the nature of collaboration, how such a program functions and the triumphs and challenges of such an operation. We will then demonstrate some of the program strategies with a walk through slide show of the program components.

KEYWORDS: Educational programs, collaboration, management

BOSTON NATIONAL HISTORICAL PARK

The creation of Boston National Historical Park in 1974 represented a new kind of park management. The park was made up of several non-profit and municipal sites which would continue to exist as independent entities, as well as federally owned properties. The plan was to combine the resources of federal, city and private organizations in a cooperative relationship in order to provide for the permanent funding and technical support necessary for restoration, maintenance, and conservation of buildings and collections. The creation of the park made possible a comprehensive program of visitor services and interpretation. This plan was developed and has been very successful.

THE FREEDOM TRAIL

Physically, most of the sites had been connected by the Freedom Trail in the 1950's. The trail is a walking route marked by a red line on the sidewalks of Boston. Symbolically, the connection between the sites was their association with important events of the Colonial, Revolutionary and early National periods in American history. The park's stated themes focused on Boston's role in the social and military events leading to the Revolutionary War and the growth and development of the new nation. These BNHP themes encompassed the stories of all the component sites—non-profit, municipal and Federal, and a goal of the park was to strengthen the connecting links.

In 1974, the non-profit sites each had professional staffs whose job it was to develop specific programs for their own sites. With the creation of Boston NHP came a staff of park rangers whose job it was to develop and implement a comprehensive program of interpretation and visitor services. Initially the park rangers presented programs for general audiences only at the sites where the National Park Service had direct responsibility for interpretation. Later, Boston NHP programs, like the walking tours of the Freedom Trail, grew to encompass more general park themes.

PEOPLE AND PLACES PROGRAM

The creation of the People and Places Program in 1981 was the result of the Boston NHP Advisory Committee's work with Boston schools to develop viable educational programs. The current menu of programs evolved from this initial effort, and provides an opportunity for park rangers and museum educators to produce and implement programs together.

Much of the cooperative agreements between the city, non-profits and National Park Service were defined in the park's planning stage, the People and Places program is an example of this management strategy in action. People and Places is a case study of an effort to consolidate strengths, minimize operational concerns and manage for optimal public impact.

From its inception, the People and Places program was designed as a collaborative effort. Involving 10 institutional players, Boston NHP and the Boston African American National Historic Site, the People and Places program was designed to provide educational experiences for fourth-grade students in the Boston Schools. This audience goal was a conscious choice for all partners. **First,** the direct services to schools was thought to be an effective way to meet local needs and share the wealth of historical resources with the city's population.

THEMES

Although themes of the collaborating parks and sites are national in scope, the buildings and historical personages also have local significance. The themes fit into the local history sequence of the fourth-grade curriculum objectives. **Second,** the Boston inner city and minority populations were under-represented in the visitation statistics at the collaborating institutions. This lack of resident visitation has been particularly noticeable in comparison to the annual visitation of national and international tourists. A project which would provide local services was desired by all participants.

The participating sites worked together in pairs, based on geography and thematic possibilities. In their individual partnerships and collectively, the staff developed a menu of on-site programs for the schools. This original menu included five different programs. Following a loosely outlined educational philosophy, all of the programs were designed to look at an historical point of view associated with the location of the program.

TURNING POINTS IN HISTORY

An effort was made to represent turning points in history and a representation of the drama and conflict of the time period from personal views. Because the target audience was the fourth grade, sites were encouraged to develop concrete experiences like role-playing and hands-on activities. Several of the programs used costumed interpretation. Pre-visit materials were produced for use in the schools. In the current year, the programs have been revised to include bilingual materials and an introduction to the site in the context of the community, both past and present.

People and Places was intended as both a menu of program offerings and an umbrella for administration; the success of the program comes from both. In our programs, the history we choose to interpret is not a story which is bound by one staff perspective. Conversation between partners encourages a dialogue about the motivating forces and divergent views of history. The curriculum which we are able to produce is more integrated, thematic views of history and historical events than each site could produce independently. Examples of the menu include:

Paul Revere: The Man Behind the Myth looks at what really happened on Paul Revere's midnight ride. Students separate the truth from the many myths surrounding the famous expedition. By watching a slide show, examining reproduction artifacts and exploring Paul Revere's House, students learn about Revere's family and his work as a silversmith and engraver in Boston's North End. During the second half of the program, students leave the museum grounds with a park ranger for an interactive walking tour of Revere's neighborhood ending at the Old North Church.

Resisting for Justice helps students experience how people in Boston have protested against laws which they felt were unfair. This program uses roleplaying to explore two different historical situations of peaceful protest. At the Old South Meeting House, students recreate the debate on the Tea Act of 1773 which led to the Boston Tea Party. Then, a park ranger leads an interpretive tour between the two Meeting Houses. At the African Meeting House, students learn about the Underground Railroad and how citizens reacted to the Fugitive Slave Law of 1850.

Merchants and Farmers in Battle presents a soldier's view of the Battle of Bunker Hill. Students can handle the clothing and gear from a soldier's pack and witness the firing of a musket. Park rangers illustrate how strategic the Hill was to the defence of Boston. Students have the opportunity to climb 294 steps to the top of Bunker Hill Monument.

The programmatic success of People and Places can be attributed to a collaborative approach combining the strengths and resources of all. The strengths of the private non-profit or museum sites include collections, a wealth of primary sources, and a specific content focus towards a museum mission. The museum education staffs at the cooperating sites have strong subject matter background and experience in working with the school audience; they provide general leadership in curriculum development.

The National Park Service strengths include an overall mission to preserve and protect cultural, natural and historical resources, and the nationwide network of technical support to carry out these functions. The park ranger staff is dedicated to this wider mission. The sites are helped by having park staff interpret the community contexts of their sites and the park is helped by having artifact rich resources to tell specific historical stories.

ADMINISTRATIVE UMBRELLA

The current administrative umbrella of People and Places looks at funding, transportation, reservations, production and distribution of materials, program consistency, evaluation and communication among participants. A component of the operational success comes from shared responsibilities for implementation. Schools are called on to make hard choices about allocating funds and allocating time spent out of the school setting.

This quality control shows in the positive response from schools; it also shows in the financial support from funders, such as the Freedom Trail Foundation, General Cinema Corporation and the Massachusetts Society of the Cincinnati. Attracting outside funding is enhanced by having sites working together.

From an internal view, the success of the People and Places Program can be attributed to the less tangible fact that everyone gets something for "themselves." Besides the primary objective of serving home-town, inner city and primarily minority students, the sites are able to earn program-related income through grant funding. The park is able to solidify an interpretive relationship with the cooperating sites, fulfilling the park's plan as well as providing an important service to the city.

GOOD COLLABORATION

The last and least tangible area of success which we would like to suggest today as an outcome of collaboration is a very real management concern. Evidence of good collaboration is social knowledge created among participants which goes beyond the content and details of the specific program.

Monthly meetings, shared decisions, and understanding different views promotes an awareness of peers and colleagues, the nature of the other sites and organizations and the parameters which define each other's working environments. Social knowledge is a working vocabulary and understanding hard to gain.

There is also personal development which comes from working in a group; more in the nature of personal education than staff training. The museum educators and park rangers have a ready forum to discuss and reflect on their practice. Shared social knowledge is particularly important at Boston NHP because the Park is by definition a mixture of cooperative agreements between differing institutions with different missions and staff representatives.

SUMMARY

We present a case study of program collaboration where working together makes the content of the public services stronger, the implementation easier, the funding possible and the administration of the program a learning experience.

NETWORKING: CONNECTIONS FOR THE 90'S

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ABSTRACT: A strategy to link the Nation's environmental education community has resulted in a National Network for Environmental Education (National Network). Supported by over 80 citizen, governmental, and corporate organizations through their affiliation with the Alliance for Environmental Education, the National Network has participating centers throughout the United Stated. Key functions of these centers are teacher training, program development, community outreach, and research. The National Network is linked nationally and internationally through Econet, and extensive telecommunication systems.
KEYWORDS: environmental education, networking, telecommunications, national network, centers

INTRODUCTION

The Alliance for Environmental Education (Alliance) is the nation's largest environmental education confederation, with more than 80 member organizations, including environmental education, business, labor, health, civic, professional, and public interest groups. Collectively, they represent over 20 million people.

As a result of recommendations from national and international meetings, as well as the growing public enthusiasm and expectations, the Alliance has chosen to lead in the development of a ***National Network for Environmental Education***.

The Alliance is establishing a network of interactive environmental education centers based at colleges, universities, and other institutions such as interpretive and nature centers. Modeled after similar centers developed by the Tennessee Valley Authority in seven southeastern states, the centers serve designated geographic areas with programs and services that include teacher training and professional development, community outreach, program adaptation and development, and environmental education research. By the end of 1990, 100 centers will be operating throughout the United States.

The centers are linked through conferences, seminars, periodic meetings on the regional and national level, and through an expansive telecommunication system, Econet. ***Econet*** is a computer based information system accessible by personal computers. The system hosts the equivalent of over 130 electronic newsletters, each dealing with a specific environmental issue or concern.

ECONET

The participatory nature of Econet encourages users to respond to articles and to use the electronic mail feature to communicate with individuals in the United States and 60 foreign countries. The electronic mail permits the various Alliance organizations to exchange information and maintain information flow among their boards and membership.

The Alliance is soliciting partnerships and is encouraging the development of new centers. Benefits include access to Econet, bimonthly newsletters, and bimonthly ***"saddlebag"*** mailings from other Alliance members. The positive response and growth of the National Network had stimulated considerable international interest, and much of the Alliance's work is being viewed as an international prototype.

Inquiries about the Alliance for Environmental Education, opportunities for affiliation, center criteria, Econet or publications should be directed to:

The Alliance for Environmental Education
10751 Ambassador Drive, Suite 201
Manassas, VA 22110 (703) 335-1025

CONSTRUCTING A RESEARCH: EDUCATION CONNECTION

Jane Allen Farmer

ABSTRACT: The ultimate purpose of research is education. However, in large organizations, divisional specialization tends to foster lack of communication. In the National Park Service, the Interpretive department is often a victim of this lack of communication. Organizations must be structured to allow for the flow of information. There are two ways that the flow can be ensured, one is assigning a special person to the task of information dissemination and the other is to channel information by a structured but less formal note sharing format.
KEYWORDS: Interpretation, interdepartmental communication, interpretive liaison.

INTRODUCTION

Henry Ford opened a can of worms when he popularized the assembly line. Assigning individuals specific jobs can be very efficient yet specialization tends to foster a lack of communication between those specialized parts. In a busy work atmosphere, where individuals specialize, people tend to forget that they are part of a whole, and they become enmeshed in the processes of accomplishing their own specific goals. Being instinctively verbal animals, people often take communication for granted.

They neglect to address the significance of the extremely structured nature of communication. In a organizational atmosphere, communication between departments can become a true effort. Many service organizations are so involved with providing service, that they do not establish an effective communication structure that will unite all parts. Give one worker a beam, another a window, another a shingle and so forth, and they may never build a house. But with the proper format to guide them, these workers can be united for efficient production. Construction works because of a structured blueprint.

In a service organization where informing the public is one of the primarily goals, it is critical to build a foundation for effective communication. One critical link in developing a functional structure is between those who are researching questions and those who are sharing answers with the public. Frank Lloyd Wright was a master of designing functioning structures that fit specific situations.

While the outward appearance of the structure was extremely important to Wright, he understood the critical importance of having a distinctly functional inner structure that supports that outward appearance. Sound functional communication channels must be structured. Without a framework upon which to base communications, important information may not be transmitted to those who are responsible for interpreting information to the public.

STRUCTURING A FRAMEWORK

The framework must stimulate the perpetual free flow of information. In a national park, there are basically two structures that can allow for information flow. An ideal structure involves an intermediary person who is specifically responsible for ensuring that flow of information, a situation that would be most appropriate to a larger organization. Smaller parks or similar organizations would not require a designated person but would require formalizing channels of communication.

Larger organizations dictate more dynamic solutions. Canter et al (1988)reported success with an interpretive project that utilized an Interpretive Liaison. Great Smoky Mountains National Park has established this special position with the purpose being:

- To educate park visitors about resource management and science programs and to develop public appreciation of such programs.
- To convince park neighbors through community outreach and involvement that there is logic and reason behind Park Service resource management policies by increasing awareness of

the problems, issues, and action being taken and thereby building support for current and future resource management actions and scientific research.

• To reveal to Park neighbors how the park and the community interface on resource management and science issues.

• To create awareness among NPS employees of resource management programs and scientific research so that they can more appropriately convey these efforts to visitors and their community contacts (Ballentine n.d.).

In Great Smoky Mountains National Park the liaison is responsible for making sure that relevant information is available to appropriate people.

INTERPRETIVE RANGERS

Informing interpretive rangers takes place at seasonal training sessions. The liaison is responsible for informing the rangers about specific issues and resources available. She is also responsible for organizing certain resources such as developing a research portfolio.

This portfolio contains information about current projects and a copy is available in all district interpretive offices. Interpretive rangers are of course responsible for their own research, but the liaison is available to direct an investigating interpreter to the proper person, department or resource..Informing interpretive rangers is a straight forward procedure. Informing the liaison is a bit more complicated and the transfer of information can easily be thwarted.

By default, the liaison is responsible for being informed about every resource issue in the park. However, the liaison is kept very busy meeting daily objectives, and is often assigned to additional details that occupy much of her time. Because of her awareness of issues, her expertise is often in demand. She has little research time.

Having the liaison seek out information is not the most efficient structure. If a new situation develops the liaison would not necessarily be aware of the issue. A more efficient structure would be for each division to be responsible for the standard of communication to the liaison.

One might argue that the head of a division already has enough to do but this requirement actually does not require any of the division head's time unless he is specifically responsible for a research project. The Resources Management and Science Division at GRSM has an efficient method for constantly informally updating research reports. Every Friday morning, each squad leader is responsible for a short (one sentence minimum!) write up of the past week's work. These write ups can be copied and sent directly to the liaison. Ten minutes worth of reading can make her aware of any important changes in the research agenda. Important notes can be attached to the research portfolio and forwarded to appropriate interpretive units.

MONTHLY STAFF MEETINGS

There are several other ways that the liaison can be regularly informed of park issues. Attendance at monthly staff meetings should be mandatory. Other departments should be seriously concern about informing the liaison. The liaison should be made aware of all interim and final reports. It is not necessary that the liaison read or even receive a copy of every report, but it would be appropriate that a copy of any and all report abstracts be sent to the liaison.

These could efficiently be used to update the Research Portfolio. Once the liaison has the information she needs, informing park employees is a fairly simple matter, but it is not only the interpretive staff that needs to be informed. All employees have a stake in the organization. Probably the simplest way to make current non sensitive information available to all employees is via the staff meeting notes. The liaison should be responsible for ensuring that every employee has easy access to the notes. This may simply mean that each employee is made aware of the posting of notes in an area convenient to the employee, such as in a break room or near employee mail boxes.

SPECIAL ISSUES

Since people tend to forget about resources regularly available to them, a reminder about the availability should be issued periodically. Special issues should be dealt with in special ways. Specially called meetings may be required to inform employees of resources changes within an organization. This not only informs the employee but develops an atmosphere of trust and confidence in the management (Gibson et al. 1979).

The liaison should also be responsible for sharing information with the public. Great Smoky Mountains National Park (GSMNP) has developed a rapport with the community through the public school system (Peine et al 1988). Using materials developed by the Man And Biosphere program, the Park has developed a information network between the Park and the Community. This program has been beneficial when the park has approached the community with potentially sensitive issues. The current proposed reintroduction of the Red Wolf is a good example. Years ago, a proposed introduction in another part of Tennessee had to be scrapped because of poor public reception. In the case of the reintroduction in GSMNP the pre-established interactions between the park and the community helped make the community open for the new idea.

Choosing which issues are appropriate with which to approach with the population outside the Park is a joint managerial issue. Peine (1988) suggests using issues with strong community orientation with positive implications. After issues are identified, they must be prioritized. This is a joint management decision. The liaison would identify issue objectives and target specific audiences. The approach is an issue oriented approach but occasionally the audience must be the target and the issues is selected to fit the objective of the audience such as with a teaching workshop. Teaching a method may be prioritized above the subject of the issue.

THE MESSAGE OBJECTIVE

But both the message objective and the audience must be addressed. After the message is identified, program options must be determined. Suggestions such as what medium to use and the extent of the project must be determined. Specific audiences, either inside or outside of the organization must be targeted. Programs that are appropriate to the issue objective and the audience must be selected, implemented and then evaluated.

Although a Interpretive Liaison is ideal, realistically, many organizations are either too small or budgets are too inadequate to support such a position. These organizations must establish a permanent structure that channels new information continuously. Again, a weekly note system may be an easy answer. If the notes are channeled through each appropriate department, then the information is available for those who wish to be informed.A problem develops in deciding which departments should receive this information.

Routing weekly notes not only will disseminate information but will develop a team approach to the functioning of the organization. Simply stating that notes should be routed will not get those notes to where they should be. A direct system of routing must be established and individuals must be assigned to the routing task. Each department should gather weekly squad notes and send them to a departmental gatherer. These gatherers will route the notes to a compiler.

The compiler would then compile and duplicate notes, sending a complete set of organizational notes back to the gatherers who would then route the notes back to the squads. It is essential that one person be responsible for compiling and redistributing the notes. This is not an extensive task and can simply consist of gathering, photocopying and redistributing the notes, and this responsibility should be listed in the performance standards for that person.

CONCLUSION

Because departments in an organization do not routinely communicate their day to day activities to one another, they often are unaware of what others do. This results in a failure to implement new learnings, in the duplication of research efforts, and a failure to disseminate the latest information to the public. The lack of communication between departments hampers trust, cooperation and an effective, efficient use of the organizations resources. The communication failure with the public cause organization officials to appear unprofessional, uninformed and even divided. All of these perceptions damage the trust and confidence the public has for the organization. The mechanisms proposed, though simple, can do much to alleviate these ongoing problems.

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COOPERATIVE EDUCATION PROGRAMS: INTERPRETATION'S FOUNDATION FOR THE FUTURE

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ABSTRACT: Interpreters talk about being members of a "profession," but are we? What has interpretation done to recruit, encourage, sustain, and promote students into its professional ranks? Is interpretation actively developing opportunities so that the best and most creative students can become interpreters? Do supervisors of interpretive programs subscribe to the notion that they have a professional obligation to mentor young, future interpreters? Do managers of interpretive programs hire seasonal or entry level interpreters based upon quota or qualification? This session will focus on cooperative education programs that link the university and the agency in the professional development of future interpreters. The praises and pitfalls of cooperative education programs involving governmental and private sector interpretive agencies will be cited.
KEYWORDS: Cooperative education programs, professionalism.

INTRODUCTION

Obviously, interpreters can "talk-the-talk" required of a good interpreter, but do interpreters "walk-the-talk" of professionalism? To paraphrase the vernacular, interpreters who practice Tilden's six principles of interpretation, interject a dash of experiential learning, develop programs based upon thematic modeling, and recite Chief Seattle's "web of life" passage in their programs should be very effective interpreters. However, do these same interpreters belong to an identifiable profession?

ATTRIBUTES OF A PROFESSION

Ernest Greenwood(Greenwood 1957) lists five elements as constituting the distinguishing attributes of a profession.

•1.Systematic Body of Theory

The skills that characterize a profession from are supported by a body of knowledge that has been organized into an internally consistent system called a body of theory. Freeman Tilden's Interpreting Our Heritage is considered a fundamental text of interpreters because it provides a theoretical starting point for interpretation.

A. Application of the scientific method to service related problems of the profession
B. Professional members convene regularly in their associations to learn and to evaluate innovations in theory
C. Emergence of the researcher-theoretician

•2. Professional Authority

Extensive education in the systematic theory of his discipline imparts to the professional a type of knowledge that provides the basis for a monopoly of judgement.

A. Visitor-Interpreter/Expert relationship
B. Ethics of professional authority in accepting sponsorship, advertising, etc.

•3. Sanction of Community

Every professional strives to persuade the community to sanction its authority within certain spheres by conferring upon the profession a series of powers and privileges, both formal and informal.

A. Control over its educational centers through accreditation

B. Control over admission into the profession

•4. Regulative Code of Ethics

Through its ethical code, the profession's commitment to the social welfare becomes a matter of public record, thereby insuring for itself the continued confidence of the public.

A. Cannot with hold services or not speak the "truth"

B. Motivated less by self interest

C. Visitor relationship

D. Colleague relationships

E. Enforcement

•5. Professional Culture

Every profession operates through a network of formal and informal groups. The interactions of social roles required by these formal and informal groups generate a professional culture consisting of its values and norms. The social values of a professional group are its basic and fundamental beliefs, the unquestioned polices upon which its very existence is based.

The norms of a professional group are the guides to behavior in social situations: admittance into the profession, gaining entry into its formal and informal groups, and for progressing within the occupation's hierarchy.

A. Career concept

He states that with respect to each of these attributes, the true difference between a professional and non-professional occupation is not a qualitative one , but a quantitative one with non-professional occupations possessing each element to a lesser degree.

As evidenced by the depth and breath of the sessions at interpretive workshops, there is a systematic body of interpretive theory that is current and constantly being enlarged. However, with the exception of meeting the first standard for a profession, the other standards cannot be met in an identifiable, quantitative manner.

Interpretation does not pass the test of being a profession when considering professional authority, sanction of community, regulative code of ethics, and professional culture. Therefore, based upon Greenwood's standards, interpretation is a non-professional occupation.

COOPERATIVE EDUCATION

If the non-professional status of interpretation is a concern, consider cooperative education as a way to initiate change toward a more favorable professional outcome. Cooperative education is a planned and progressive educational program that combines academic studies with on the job field experiences. Schedules may alternate full time work experiences with full semesters or quarters of study in universities. Or there may be part time positions with parallel periods of study. Interpretive agencies, universities, and students design programs that work best for each individual student on a case by case basis.

Cooperative education programs necessitate linkages with universities and colleges. Inherent in this relationship is an adoption of educational standards such as accountability and accreditation. Professions must work with educational institutions to develop mutually beneficial controls over admission into professional ranks.

Educational requirements, registration, certification, and licensing are vehicles that can be implemented to control admission into the profession. Interpretive agencies need to reconsider minimum qualifications for entry level position. High school graduation or two years of college is not acceptable as the minimum educational requirement to be an interpreter.

The code of ethics associated with a profession requires speaking the truth even when that may be contrary to popular opinion. Is interpretation being best served when the best and brightest students majoring in disciplines needed by interpretive agencies cannot be hired? Cooperative education programs offer a way to integrate multiple agenda hiring needs of agencies that do not discriminate against any one individual. Universities can hand tailor cooperative education programs to fit very specific agency needs.

To be a profession, interpretation must develop a mentor program that links up students with field interpreters. To many of us, Lon Garrison, Josh Barkin, and other inspirational interpreters have served as mentors. These special interpreters who have touched our souls with the desire to be just like them provides an invaluable recruitment tool into the professional ranks. Cooperative education programs provide the vehicle to match compatible individuals. Agency supervisors must be not only be willing to work closely with cooperative education students. They must also be willing to serve as a professional mentor.

To be a profession, interpretation must pay seasonal and full time entry level personnel what they are worth. While it is still being encouraged and practiced, volunteer student positions in parks and recreation are gradually fading away. To pay a four time returning summer seasonal who is a college graduate at the GS-4 level is perhaps cost efficient, but damaging to the recruitment and credibility of interpretation. In the southern California region, summer seasonals working for park and recreation agencies with two years of college credits are being recruited at hourly wages between $8--$9 per hour.

Students are shopping around looking for summer jobs that will pay them the most money. Interpretive agencies need to be competitive in salary to attract qualified applicants. Cooperative education programs offer the exchange of units as compensation for salaries that are not competitive with comparable agencies.

In addition, cooperating associations are often willing to participate in joint funding ventures with interpretive agencies when linked with cooperative education programs. All sorts of creative cooperative education programs can be created to fit specific agency needs.

OUR LEGACY—OUR FUTURE

Our legacy is one of an emerging profession. Our future remains uncertain. If we choose to forge ahead and work toward becoming a respected profession, we must initiate discussion on the following topics:

- •1. Minimum qualifications for interpreters;
- •2. Registration, certification, or licensing of interpreters;
- •3. Control admittance into the interpretive field;
- •4. Initiate accreditation of approved university curriculum in interpretation;
- •5. Establish a fair and equitable compensation schedule for seasonal and entry level interpreters;
- •6. Adopt cooperative education programs;
- •7. Establish interpretive mentor program;
- •8. Maintain fair and equitable hiring practices; and
- •9. Be willing to work very hard at implementing these items.

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WILDLIFE TREKS: A ZOO AND A PARK SYSTEM WORKING TOGETHER

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ABSTRACT: The Wildlife Treks program, a collaborative effort between the Zoological Society of San Diego and the San Diego County Parks and Recreation Department, takes participants into their local environment and relates their experiences to global environments and issues. The goal of the program is to make the individual a better environmental advocate. This paper describes Wildlife Treks and explains the reasons why this program fits the needs of three different groups.
KEYWORDS: Wildlife Treks, collaborative, local, global, impacts, environmental advocate, needs

INTRODUCTION

A contemporary motto of environmentalists asks the individual to "think globally, act locally." This motto, although noble, is somewhat difficult for the average person to put into effect. Most people know very little about their local environment and often less about the global environment. Interpretation and the proper cooperation among natural resource organizations can, however, introduce individuals to the information they need to relate their actions to the overall health of the world. The Wildlife Trek program as sponsored by the Zoological Society of San Diego and the San Diego County Parks and Recreation Department is such a cooperative effort.

THE ZOOLOGICAL SOCIETY I

The focus and expertise of the Zoological Society is our global wildlife resources, and the primary concern and specialty of the Parks and Recreation Department is the natural resources of San Diego County. These two organizations are now working together, using their combined knowledge, taking participants into local environments, and relating these habitat experiences to similar environments worldwide (Myers 1989).

GLOBAL ENVIRONMENTAL ISSUES

By relating individuals to global environmental issues through the use of their own backyards, Wildlife Treks avoid the possibility of being "sterile" as outlined in Freeman Tilden's first principal of interpretation: "Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile" (Tilden 1978).

The idea of two organizations working together in offering interpretive services, rather than duplicating each other's efforts—or worse yet, competing with one another—is an excellent example of a recent concept of a coordinated, regional approach to interpretive program planning (Capelle, Ververka, Moore 1988).

Finally, the Wildlife Trek program is one demonstration of "finding the fit" in a "Strategic Planning" approach (Barry, 1986) to "Change Management for Interpretation" as taught by the Interpretive Management Institute (Christensen and Barry 1989).

WILDLIFE TREKS: PROGRAM OVERVIEW

The goal of the Wildlife Trek program is to help the individual become more aware of the problems facing wildlife and the environment, and to help the individual develop a conservation ethic. The program enables the participant to become a better-informed consumer, an effective advocate for wildlife and wildlife habitat, and a rational environmental decision maker. Treks also create a more positive attitude toward and support of zoological institutions and park systems.

Several objectives are used in striving toward this goal. Each trek takes the attenders away from the comfort and familiarity of the mundane, developed, and synthetic world into a new and different natural setting where the unique features of that habitat are introduced and discussed.

The geologic history and geographic setting of each site are linked to the climatic patterns, availability of water, and type of water at that location. These abiotic features are then related to the wildlife that lives in and uses that habitat. The unique features of that ecosystem are then explored using active, hands-on techniques.

HABITAT DISCOVERY

As the group discovers its habitat, the Trek leaders connect what the group is experiencing to similar habitats around the world and the importance of that type of ecosystem to the global environment. Through direct observation the group is able to witness how their habitat is being impacted by human use and abuse.

These local impacts are then compared and contrasted to regional and global issues concerning this ecosystem type. The effects of these impacts are then discussed, and the individuals are given information that will enable them to become actively involved in efforts to manage or prevent these problems.

Not only does the Trek program introduce the participant to a specific type of habitat, it's also designed to give the individual an appreciation for the existence and importance of habitat diversity. San Diego County is ideally suited for the study of environmental diversity in that 12 different habitats can be found within a one-hour drive. Four major habitat types are studied during the Trek program: tidal wetland, chaparral, mountain, and desert. Three trips are scheduled to each habitat type, not to the same site but to the same kind of habitat.

As an example, the schedule might call for three successive visits to tidal wetlands, each visit to a different coastal lagoon. By participating in all three trips, individuals have the chance to reinforce what they have learned about that particular habitat. They also have the possibility of seeing something they might have missed during a previous trip.

It's not uncommon for participants to identify common plants, animals, and habitat impacts during their second or third visit before the Trek leader has the time to point them out. In fact, these return visitors are often used as mentor teachers and are asked to help new participants during the hand-on activities. Participants are encourage but not required to attend all three visits to each habitat type.

THE TREK CALENDAR

The Trek calendar is arranged to take advantage of the best seasonal conditions and wildlife observation opportunities for each habitat type. Tidal wetland trips are scheduled during the late fall and early winter, a time when many migratory shorebirds are leaving the area and waterfowl are beginning to arrive. The result is some of the best possible birdwatching of the year.

Desert Treks take place in the late winter and early spring, before the onset of the summer heat and in the midst of the wildflower bloom. At the height of spring the program moves to the chaparral, and in the early summer to the mountains. At present, two three-trip visits to each of the four habitat types are offered during the year, giving a total of 24 Treks.

By the end of the Trek year, the program participant is well acquainted with four major habitats found in San Diego, can relate these sites to similar habitats and habitat issues around the world, has a knowledge and respect for habitat diversity, and can recite several ways to become more involved in environmental protection.

PROGRAM DETAIL

Publicity, registration, fee collection, and support services are provided by the Zoological

Society of San Diego. Three publications—*ZOONOOZ*, *Zoo Log*, and *Ark*—each notify 175,000 households about the Trek program. *ZOONOOZ* is published monthly, *Zoo Log* and *Ark* are published quarterly. All program questions and registrations are received and processed by a full-time reservationist at the San Diego Zoo.

The cost for Zoological Society members for each habitat type is $12 per trip or $30 for the three-trip series; nonmembers pay $15 per trip or $40 for the series. Anyone over the age of 9 is allowed to sign up for the program. Registration is confirmed by letter, and the participant is welcomed to the program, given directions to the site, told what type of hike to expect, and asked to bring recommended gear (day pack, binoculars, bird book, lunch, hiking boots, etc).

Program presentation is the responsibility of the Parks and Recreation Department. Its park rangers develop the lesson plans for each trip under the direction and guidance of both Parks Department and Zoological Society management.

TEAM APPROACH

To minimize the impact of the program on park operations, a team approach of two rangers per habitat is used. A total of eight rangers is involved with the program. As much as possible, these rangers are on-site staff, and program participants come to them as directed through publicity and registration instruction.

This team approach also facilitates program logistics and scheduling. When appropriate, the Trek group can be broken into smaller groups for special study. Furthermore, employee vacation scheduling does not overly affect program scheduling, nor do unexpected sicknesses result in canceled programs. Staff release time for program preparation and presentation is provided through seasonal staffing. Preparation time is calculated at four hours of preparation time for every hour of presentation time.

"TREK PACKET"

Each Trek requires approximately four hours, 8:00 a.m. to noon, and covers three to four miles. The morning starts with an introduction and orientation to the habitat and the day's activities. A "Trek Packet" is then given to each individual, couple, or small group. The number of packets given out is kept at a minimum to save paper. As assembled by the program staff and reproduced by the Zoological Society, the packets generally include ten to twelve references specific to the site: historical articles; geologic and geographic information; checklists; identification keys; newspaper articles; journal articles; and scientific reports.

The contents of the packet are reviewed, and the group is asked to take along one or two selected items for use during the hike. What is not carried is used as future reading and reinforces what is seen while exploring the site.

Bird field guides and binoculars are a staple for the program, and are always provided for those folks who don't have their own. Once the group is set and ready to go, an icebreaker comes next. The purpose of the icebreaker is to get the members of the hike acquainted with one another and working together, and to establish a sense of fun and camaraderie for the hike.

DISCOVERY OF THE HABITAT

As the trip unfolds, the participants are guided through the discovery of the habitat as a whole and the study of its individual parts. The rangers use identification keys to show the group how one species can be differentiated from another. Then the group is broken into smaller teams and asked to key-out a variety of trees, shrubs, and wildflowers.

These selected plants are discussed in relation to their microhabitats, each other, the local animals, and the ecosystem in general. Stops for the most part are unplanned, and questions are numerous. The unexpected call of a bird or sighting of a lizard, track, or scat is a hoped-for surprise that adds an air of suspense and spontaneity to the hike. These diversions in the planned program are greeted with enthusiasm by the staff.

To keep the group on its toes, a prize such as a Zoological Society T-shirt is awarded to the first person to identify or find a particular feature mentioned at the start of the visit.

AREAS OF HUMAN IMPACT

The tour is intentionally taken into areas of human impact. Topics relevant to that site, such as habitat loss; urban development; deforestation; air pollution; and the effects of river dams, offroad vehicles, and uncontrolled pets, are observed and discussed as related to that site and its global counterparts.

On their return to the trailhead the group reviews what they have seen, and they are given suggestions on how to become advocates for the environment. These suggestions aim at making individuals better informed, more active in positive and constructive change, and more aware of their own habits and how they might or might not effect the environment.

A COLLABORATIVE EFFORT

Several factors explain why Wildlife Treks work as well as they do. As luck would have it, the goal of the Trek program is an objective of the mission statement of both organizations.

The education mission of the Zoological Society is to increase knowledge and appreciation of animals and plants, in people of all ages, through a wide variety of educational programs and services, utilizing the resources of the San Diego Zoo and Wild Animal Park.

As part of its mission, the Parks and Recreation Department will, on an ongoing basis, educate children and adults about their natural and cultural assets, and endow the citizens with the scientific information and the attitude of care and respect needed to guarantee that our natural and cultural resources are protected and enhanced as responsibility for these resources passes from generation to generation (Copper 1990).

But the commonality of these goals did not ensure that the program would work. The Wildlife Treks program works because it meets the needs of three different groups.

The Zoological Society experienced budget and staffing cuts and could not continue this two-year-old program without the staffing made available through this collaborative effort.

SAN DIEGO COUNTY PARKS AND RECREATION DEPARTMENT

The San Diego County Parks and Recreation Department was able to reach as many as 175,000 new households with an introduction to its park system. A given number of these people—the participants in the program—were introduced through first-hand experience to at least six County parks (at a minimum, half of the 12 Trek sites are County parks).

Parks and Recreation was able to introduce its staff and the general public to fee schedules for special interpretive services (Massey 1988), a concept not previously used by the Department. Finally, County staff, through their exposure to the well established Education Department of the Zoological Society, experienced a rare opportunity for professional growth.

Most importantly, the need for the program participant to be able to "think globally, act locally" was met through this joint effort between a global wildlife institution and a local natural resource agency.

CONCLUSION

As a program, Wildlife Treks run smoothly and efficiently because they meet the needs of their membership groups. The Zoological Society of San Diego, the San Diego County Parks and Recreation Department, and the program participants are each members in Wildlife Treks, and their needs can be thought of as three intersecting circles.

The overlap of these three circles, the point at which the program meets the needs of all three groups, is the "fit" that makes the program work. Without this fit, collaborative programs will not work.

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CULTURAL PROGRAMS AS AN INTEGRAL PART OF ZOO INTERPRETATION

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ABSTRACT: Interpretation in zoological parks has traditionally been limited to animals only. Most recently, biological approaches have become common, both in passive efforts, such as exhibits, and active ones like programs. One important possibility that is largely overlooked is cultural interpretation. It can take many forms and be done at several levels. Current conservation issues may forms and be done at several levels. Current conservation issues may have cultural roots that can be interpreted effectively within the zoo confines; but other important aspects, interpreting past cultures for example, may be done on site and well beyond the perimeter fences. Issues that we face today and tomorrow depend upon our understanding that people see their world differently, and that it is not just a curiosity.
KEYWORDS: Cultural interpretation, different levels, both in and out of zoo, world view, issues

THE TULSA ZOO

The Tulsa Zoo and North American Living Museum began cultural interpretation nearly 12 years ago. We have several cultural exhibits here, with more planned in the future. These are an integral part of our passive interpretation. Active interpretation, for the most part is done by our Education Department, with the guidance of the Education curator, Carol Eames. Many are done jointly with the Museum Curator.

Some of the things that we do are quite sophisticated, such as adult classes in archaeology, including field classes; but others can be done in a classroom or in front of an exhibit. The lessons are the same, cultural perceptions differ. The world of the Maasai or the Jivaro is actually and perceptually different than ours. Also, the changes or failures of past civilizations can be models for modern ones, including pushing environmental limits and resource failure.

As part of our conservation message, we emphasize the cultural basis for many pressing issues, whether it be the killing of black bears for their gall bladders or digging ginseng.

THE PROGRAM

Many things that we do are done elsewhere -—at nature centers, historical parks and other places. Zoological parks usually overlook the program potential coupled with cultural interpretation. It can be in several guises, such as the obvious in a simulated archaeological excavation; or, more subtly as the interpretation of domestication, both animals and plants, and the impact of all of us.

Space prevents a discussion of all the possibilities, but selected examples can serve as illustrations for the rational behind the programs. The next few paragraphs will hopefully do just that.

ARCHAEOLOGY CLASSES

We offer archaeology classes for adults at the zoo. Topically they range from paleo anthropology to southwest and meso-American archaeology. We have taught field classes in southwest archaeology for the past 10 years and have taken groups to Belize, Guatemala, and Peru. The site interpretation that we do has several aspects, one of which has to do with pushing environmental limits.

We have conducted simulated archaeological digs for 11-13 year olds on the Zoo grounds and found it to be quite rewarding. From the material that is salted in each square, the group is asked to reconstruct, as best they can, a past civilization. This includes observations on technology, politics, religion, relationships with neighbors, and the like.

We often ask the question, "What is it?", as we stand by an enclosure. The answer might be, wolf. With a little prodding, the realization comes that "wolf" is just a name, and has nothing to do with what the animal is. To know that, a great deal of natural history information has to pass back and forth.

One important aspect, often overlooked, is that a wolf is also what it is perceived to be. We can stand before that exhibit with a northwest coast wolf mask and interpret perceptually. We might also use a photograph of Lon Chaney, Jr. Folk tales grow from giving human characteristics to animals. Hard reality also surfaces in the form of stockmen lobbies.

BEARS, LIONS, TIGERS.....

Many of our sport teams have names such as the bears, lions, tigers, eagles, and falcons. The team exudes those admirable qualities that we perceive those animals to have. The old saying, "If you eat the heart of the lion, then you become the lion," has basis only in myth. But so does taking tiger bone pills, powdered rhino horn, bear gall bladders, and others. A zoo is an excellent place to interpret this dilemma, to understand unshakable beliefs that only will change when there are no more rhinos, and profit motivations.

MEDICINALS

We also have wild flower plots with sufficient variety to have some edibles, but more importantly, medicinals. Several programs at the Zoo revolve around the destruction of tropical rain forests. As a part of those programs, people of the forest are considered as part of the resource. We use the general lack of knowledge of our native plants by the average person as a comparison with those people.

Medicinals are selected deliberately because of the frantic cataloging now being done by ethnobotanists. That knowledge may pass with the next generation, as will many of the plants. One irony is that our interests seem to be selfish, in that we are seeking cures for our diseases.

SUMMARY

The types of programs are limitless and the few illustrations we have do not even approach the broadness of the programs. The thing to remember is that zoological parks can provide excellent opportunities for cultural interpretation.

We are in the process of planning a 1890's homestead for the Zoo that will allow us to do several things, including interpreting domestication and changes in lifestyles and technology. It all has relevance.

LUNCH WITH A LION AND SLEEP WITH A SLOTH: INTERPRETATION AT THE ZOO

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ABSTRACT: Interpretation of programs at a zoo and involvement of programs for children are presented. Come with us as we tour the zoo with the lions and the sloths. Come see "Lunchtime at the Zoo" and "Nighty night at the Zoo." Zoo tours and docent training will also be discussed.The success of the program will be discussed.
KEYWORDS: zoo education, interpretation, children, docents, hands-on

INTRODUCTION

The Ellen Trout Zoo in Lufkin Texas offers a variety of on-site educational and interpretive programs to elementary school children in their surrounding community. Children learn, enjoy, and are stimulated by the programs, returning again and again, year after year, to participate. Lufkin and the surrounding communities are small, and the Zoo is one of the few curricular activities available. Students may visit several times during their elementary school career.

This gives us the unique ability to allow the students to form lasting relationships with certain animals and to build upon previous programs. The reason for the success of the programs is simple. The programs appeal to their audience of teachers and students. Teachers are pleased by programs that fit easily into school curriculum and students enjoy programs that are fun, as well as educational.

The programs capitalize on the excitement of the zoo environment, and animals are a central component. I would like to present information on three of the zoo's more popular programs: "Lunchtime at the Zoo", "Nighty Night at the Zoo", and the "Zoo Tours". Each program appeals specifically to its audience and each offers a new and different look at the Zoo.

"LUNCHTIME AT THE ZOO"

The Zoo's "Lunchtime at the Zoo" program offers second grade students a rare hands-on opportunity to interact with zoo animals at feeding time while learning about the nutritional needs and special adaptations of animals such as teeth, beaks and claws. The first half hour of the program is spent in the classroom. Kids are introduced to the concept of carnivore, herbivore, and omnivore. They are shown skulls, teeth and some of the peculiar foods that zoo animals eat.

The second part of the program is spent in the Zoo where the children get to feed three different animals: an herbivore (usually the hippo), an omnivore (monkeys), and carnivores (usually the alligators and crocodiles). This program is reaching a record number of eager second grade students by targeting area teachers with letters and hand delivered brochures that outline the program. Over the years the Zoo has built a strong relationship with area school teachers.

THE ZOO STAFF WORKS CLOSELY WITH TEACHERS

The Zoo staff works closely with teachers and encourages feedback from teachers and students. Teachers appreciate the cocurricular status of the programs. In other words the program satisfies the legal requirements, in Texas, to qualify as an extension of classroom activities. Materials covered by the programs can be expanded in the classroom. Since, the information covered is closely correlated with the science textbook currently used by area school districts. The Lunchtime at the Zoo program also keeps their primary audience, the children, foremost in mind.

SECOND GRADE AGE LEVEL

At the second grade age level most kids are just catching on to the concepts of classifying, ordering and inductive thinking. These concepts are used in presenting material in the classroom section of Lunchtime at the Zoo. Children are introduced to the concept of carnivore, herbivore and omnivore and practice classifying animals into these groups according to what they eat. The children are excited by "hands-on" activities in the classroom as they touch teeth and. in the zoo as they participate in actually feeding the animals. Observing animals in the zoo is fun but feeding time is especially exciting as animals react in an immediate and positive way to the children.

At the second grade age level children enjoy relating to animals on a personal level and many of the Zoo animals have been named (Hippy the hippo, Claws and Jaws, the lions, and Scruffy the Lemur). The students really seem to enjoy referring to the animals by name. Many of these students will visit the Zoo again and again throughout their school years. They ask for animals by name, remember animals that die, and inquire about sick or injured animals by name. Knowing an animals name seems to make learning more relevant as a bond is established between the child and the animal.

"NIGHTY NIGHT AT THE ZOO"

Another exciting program offered by the Zoo is called "Nighty Night at the Zoo". This program is offered to high achievement level sixth grade students. It offers them an opportunity to see the Zoo after dark and to enjoy an overnight "camp out" experience at the Zoo. Again, this program keeps in mind the needs of its audience of both teachers and students.

Teachers enjoy the program because it is multidisciplinary. Activities include: animal behavior games, films, arts and crafts, poetry writing and story telling. The students are thrilled with the opportunity to "camp out" at the Zoo. But, they are just as enthusiastic about learning.

Although most students will have been to the Zoo on many previous occasions they have not had an opportunity to watch the night time behavior of animals. Nighty Night at the Zoo lets students look at the Zoo in a totally new way. As sixth graders most students are familiar with the zoo. They have attended many zoo programs and even know the zoo animals by name. Since Zoo staff are aware of their audience, and their level of familiarity with the Zoo, they are able to offer programs that continue to stimulate learning.

ZOO TOURS

A third program offered by the Zoo is a one hour guided tour for Kindergarten, first, and second grades. The objective of the "Zoo Tours" is broad: to show the entire Zoo to an audience of 20-30 exuberant children in the space of just one hour. The program has been enthusiastically received. In fact, schools often send an extra bus, or two, at the last minute.

Some problems I encountered with the tours include: physically moving groups of 20-30 children from exhibit to exhibit through the Zoo without losing anyone, speaking loudly enough, to a dispersed group, so that all could hear, and holding the attention of 20-30 children for an entire hour while covering the length and breadth of the Zoo.

To improve the Zoo Tours, we have suggested keeping the Tours to a maximum of three to four main areas of the Zoo, depending on the age of the students involved. Three major exhibits might include the large cats, alligators and crocodiles, and the wolf exhibit. Also, varying the interpretive theme, such as "Carnivores", or "Animals of Africa", would bring a central theme to the "Zoo Tour".

Limiting the number of exhibits would help focus the attention of the students on certain main concepts, limit the amount of facts with which they would be bombarded, limit the area covered by foot and reduce problems associated with keeping the group together.

It would also allow time to supplement the observation of animals with "hands on" or close up viewing of objects such as teeth, eggs, nests, skins. Observing animals is a great way to learn but some ideas are best conveyed by touch or close up viewing. Also the "hands on" time would allow a chance for students to sit, think, and question. However, the "Whole Zoo Tour" is very stimulating and encourages future visits to study one area in more detail.

DOCENT TRAINING

The "Lunchtime at the Zoo", "Nighty Night at the Zoo" and the "Zoo Tours" are programs conducted by volunteers trained as Zoo Docents. The Zoo's pool of volunteers consists, almost exclusively, of a local community service group. In the past, Zoo volunteers have been largely comprised of homemakers. The current trend toward mothers working outside the home has severely cut the Zoo's pool of volunteers. Since this trend is likely to continue the Ellen Trout Zoo is trying to broaden its base of volunteers.

Groups that may be targeted include: students from local universities, retired persons or senior citizen groups in the community. If weekend programs were offered, working adults might be able to serve as volunteers. The Zoo's current group of volunteers are highly motivated to perform community service.

In order to attract a broader base of volunteers it may be necessary to provide incentives such as course credit to students, community recognition, or even social activities for the volunteers. It is just as important to keep in mind the needs of volunteers as it is to keep in mind the needs of the audiences because they are the "personality" of the programs. Many visitors will judge the quality of their zoo experience by the friendliness and competence of the staff.

SUCCESS OF THESE ZOO PROGRAMS

The success of these Zoo programs are simple. The programs appeal to their audiences of teacher as well as students. They fit easily into the school schedule and complement material that is being covered in the classroom. The students enjoy the programs because they are fun and exciting, but they are also educational and stimulate the students to learn. The programs capitalize on the advantages of the Zoo environment.

It is an exciting and colorful place to be and the animals are a principle component of that environment. Each program is different, so students are satisfied repeatedly, thus for students who visit the zoo on many occasions throughout their school years, each experience is new and different. And last of all, the close relationship that the Zoo staff has with area schools allows the Zoo to be a long time component of a child's education.

A PERSONAL LEVEL

Kids know animals by their names and they participate in naming the offspring of animals. The Zoo's approach to interpretation acknowledges that people have an interest in knowing personal histories, incidents, accidents that happen to all of us, and uses this fact to help kids to relate to the animals on a personal level and to enhance learning.

This is not anthropomorphism. It is simply an acknowledgement of the way humans think, learn, and relate to information. Nameless facts and figures about an animal is "scientific jargon" the average visitor needs a reason to be interested in an animal—a reason to care.

The interpretive programs at the Ellen Trout Zoo follow Freeman Tilden's first principle of interpretation: Information must be within the realm of a persons experience or it will be meaningless.

INTERPRETATION AND THE ZOO RENAISSANCE

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ABSTRACT: Enormous changes in zoo exhibit design have presented interpreters with unique challenges and opportunities. An understanding of the historic influence of various design eras is particularly useful to planners who face incremental and phased redevelopment of their sites. The coevolution of interpretive media and exhibit design is addressed in the context of interpretive planning. An interpretive development model is presented as an integral component of a zoo's long range plan.

KEYWORDS: zoo interpretation, interpretive planning, zoo design, cultural resonance.

INTRODUCTION

During the past two decades, zoos have changed dramatically through advances in exhibit design, applications of new technology and substantial redevelopment. While the current wave of redevelopment is still gathering force, improvements have already been so significant that this period can truly be called an era of renaissance for North American zoos.

This renaissance has not confined itself to physical improvements alone. Simultaneously, zoos have demonstrated an active commitment to conservation education, scientific research, and the breeding of endangered species. Today the vast majority of exhibit specimens, including endangered species, have been born in captivity; modern zoos have become producers rather than consumers of wildlife. In some instances, zoos have become helped to re-populate protected habitats with the progeny of endangered species bred in captivity.

While many zoos have developed humane and educational exhibits, most of us still have lingering memories concrete and steel cages where animals paced through prison-like enclosures. In fact, some of these derelict cages can still be found today, even in many of our most progressive zoos. The correction of past sins is often complex, slow and expensive.

Because improvements are typically incremental, most zoo interpreters have inherited fragmented landscapes in which new exhibits stand next to the old. Our interpretive environment is one that some planning theorists would describe as a product of disjointed incrementalism (Lindblom 1959). An irregular pulse of funding leaves its mark on the landscape: exhibits that represent design eras separated by long gaps in time. Consequently, zoos in transition contain an uneven, disjointed set of exhibits. Older exhibits and facilities stand as conspicuous artifacts while newer, more naturalistic exhibits begin to surround them. It's not surprising that redeveloping zoos are often full of architectural and thematic collisions, as well as transitional path systems and detours around exhibit construction projects.

Perceptual disparities among exhibits and construction projects create an interesting challenge for interpreters. It is as though the exhibits themselves are on exhibit. Ultimately, we are challenged to interpret the zoo landscapes as a dynamic whole without neglecting the visitor's primary interest in the animals themselves. At the same time, we must look for every opportunity to promote conservation, global stewardship and local action as we tell the story of endangered species and endangered habitats.

In this presentation I will discuss some of the facets of interpretive planning implied in this "era of zoo renaissance." I will develop a chronological perspective of the coevolution of exhibit design and interpretation and finally describe a model for interpretive planning at Woodland Park Zoo in Seattle, Washington.

ZOO EXHIBIT DESIGN AND INTERPRETATION

To understand the relationship between zoo exhibits and interpretation, it is important to trace the historic progression of their design. In a single zoo, the "archaeologist of zoo design" is likely to discover the influence of royal manageries, of Linnaean taxonomy, of Hagenbeck panoramas, of Modernism and Abstraction, of Realism and Landscape Immersion, and of high technology. Each era exhibit design has been accompanied by certain interpretive media and many of these artifacts are also available for study.

THE INFLUENCE OF ROYAL MENAGERIES: Some of the earliest zoos began as royal menageries where animal cages were framed with Baroque symmetry and formal architecture as a fitting expression of royal wealth, power and indulgence. Exhibit design was expressed in the form of suriosity cabinets in which wild animals were caged and displayed. Some of these manageries were eventually opened to the public and continued to influence zoo design centuries later. For example, zoo buildings built as recently as the 1930s still incorporate formal elements of basilicas, domed cathedrals, and the royal hunting lodges of European aristocracy (Coe 1985). Interpretation was generally limited to a label briefly identifying the caged animal and its country of origin.

LINNAEUS AND TAXONOMIC INTERPRETATION: After about 1735, Linnaean classification had a profound effect on the organization and interpretation of zoo collections. The rush was on to see who could identify and name to most specimens or collect the oddest, rarest or most dramatic animals. The taxonomic approach is still evident in most zoos seen today as visitors encounter groups of animals in buildings with titles such as "Carnivore House," "Reptile House," "Aviary." "Primate Houst," or "Feline Houst." Taxonomic exhibit organization can facilitate the interpretation of comparative anatomy, physiology and, in some cases, evolutionary relationships. However, it often does little to promote an understanding of ecological relationships and the importance of habitat.

HAGENBECK APPROACH: The first exhibits in zoos were preceded by dioramas in museums which included taxidermy, artificial plants and painted backgrounds as early as 1784 in Philadelphia and 1809 in London (Wonders 1984). But the idea of habitat exhibits with live animals was not realized until almost a century later in the late 1800s when Carl Hagenbeck created some magnificent outdoor panoramas of towering landscapes--often with waterfowl exhibits in the foreground, hoofstock in the middle distance, and large carnivores or alpine goat species on jagged pinnacles in the background (Coe 1985). He designed moats to serve as animal barriers and showed that it was possible to contain many animal species without the use of steel bars.

His panoramas were a sensation and repeated at many zoos. However, his overlapping, panoramic landscapes tended to be more romantic than realistic because there was little emphasis on simulating the appearance of the animals' natural habitat. The appeal was basically visual and subjective. Not surprisingly, his work was copied by zoos all over the world. In fact, "... copies of copies were copied until unfortunately many of the substantive improvements that he made became trivialized. Zoos throughout the world adopted the concept of moated exhibits, but the complex overlapping sightlines gave way to pie-wedged rows of exhibits where one was the same as the next." (Coe 1986).

MODERNISM AND ABSTRACTION: Following the Hagenbeck period is a design era that has been called Modernism and Abstraction. Zoo exhibits of this era are characterized by glass-fronted,laboratory-like enclosures lined with tiles and equipped with stainless steel furnishings. The emphasis was on hygiene and controlled environments. As expressed in architecture, Mosernism and Abstraction accentuated technical advances and assumed that all that was needed to keep zoo animals healthy was the application of greater and greater doses of science, sanitation and technology. Design expressions were simple and hard with architecture continuing to set the context within which animals were seen (Coe 1986). Outdoor exhibits of this era were still influenced by the Hagenbeck approach, but the rock work had changed to plain walls of concrete or masonry as abstract expressions of natural forms.

Interpretive messages of this era tended to be expanded labels with information presented in list or outline form, corresponding to categories such as range and diet. With an emphasis on durability, plastics and metal replaced wood as the most popular sign substrates. Interpretive signs were often placed outside the visitor touch zone, and often within the exhibits themselves.

POST-MODERN: In many contemporary zoos and aquariums, a Post-Modern style is replacing the Modernist movement as increasingly sophisticated technologies are incorporated in museum-like exhibits with live animals. While these exhibits are often decorated with plants and natural forms, the human dominance over nature is reinforced through a strong architectural ambience. "High-tech" style is a logical out growth of the Post Modern movement and offers a contemporary venue for the celebration of technology. High tech design is commonly associated with world fairs, science museums, theme parks, new park visitor centers and now finds very convenient and compatible use at places such as EPCOT.

In many zoo and aquarium facilities large graphic images, neon lights and interactive gadgets share a contextual realm with animal exhibits. Not only do these become attractions in their own right, but they contribute to an overall high-tech ambience, almost like a video and computers. However, an incompatible juxtaposition may be created where this high-tech ambience is located immediately next to or within what otherwise appears as a natural landscape supporting live animals. Interpretive media include audio-visual presentation, mechanical and electronic interactive devices and special effects intended to encourage visitor participation. In some cases, these participatory media can compete with perceptions of the primary interpretive attractions—he animals themselves.

REALISM AND LANDSCAPE IMMERSION

(Jones, Coe, Paulson 1976): The mid-1970s witnessed a counter movement away from the homocentric styles previously mentioned. This movement has been called Realism and Landscape Immersion. It is an approach that emphasizes naturalistic landscapes in which animals occupy simulations of natural habitats. Landscape immersion attempts to immerse visitors in the habit of the animal—as though they are trespassing through the animals' wilderness home. Every effort is made to remove or obscure contradictory elements such as buildings, service vehicles, cross views to other visitors, people and animal barriers, or anything that would detract from the image of actually being in a wild habitat. Some of the first experiments with landscape immersion were outlined in the 1976 Long Range Plan for Woodland Park Zoo and successful applications include the African Savanna, the Lowland Gorilla exhibit, the Marsh and Swamp exhibits, and the new Elephant Forest exhibit in Seattle, Washington.

Interpreters working with the landscape immersion model are challenged to develop unobtrusive media that avoid compromising the illusion of being in a natural environment. Self-guiding booklets, audio cassette guides and docent-conducted tours are examples of interpretive solutions that are inherently non-architectural and therefore unobtrusive. While these have been tried at many zoos, they have not fully replaced sign-in-place interpretation which continues to be the bread and butter of interpretive media in the zoo world today.

A corollary of landscape immersion is the idea of cultural resonance--the creation of an appropriate cultural context through the use of vernacular architecture and cultural artifacts (Janes 1988). In the Elephant Forest exhibit at Woodland Park Zoo, for example, Thai architecture is used in selective settings to evoke the semi-domestication of elephants in Southeast Asia and their sacred role in Thai culture. In other parts of the exhibit, visitors see elephants against a backdrop of natural vegetation intended to simulate their tropical forest habitat. The selective use of cultural resonance adds depth and variety to the story line and evokes the human presence in what little is left of the Asian elephant's natural habitat. It helps interpreters emphasize the fact that the problems of endangered species are not the exclusive domain of biologists. Cultural and socioeconomic factors also play a key role in working to protect the habitat of endangered species.

HYBRID DESIGNS

Every zoo more than a generation old is probably a hybrid of several design approaches and it's safe to say that not all of its exhibits will be redeveloped simultaneously. But the success of its redevelopment program will be enhanced by an updated Long Range Plan--ideally, one that includes an Interpretive Master Plan as an integral component.

In the real world of zoo planning, however, master plans often treat interpretation only in flowery prose describing broad concepts and themes. Interpreters must take the initiative to develop subsequent stages of the plan that fill in the essential details. Ultimately, the interpretive plan must provide a way to unify the seemingly unrelated elements of a zoo during redevelopment. To develop such a plan at Woodland Park Zoo, we envisioned three major categories of planning subsets: an Interpretive *Guidance Plan, and Thematic Program Plan,* and a Design *Standards Manual fo-*

Communication Media. All of these activities are related, ongoing, and perceived as integral subsets of the zoo's comprehensive long range plan.

The Interpretive Guidance Plan proposes major themes and concepts for exhibit zones. It addresses the principles of the zoo's long range plan using the concept of bioclimatic zones to organize exhibits on the site. It also presents general location and circulation criteria for dispersed interpretive centers and offers philosophical guidelines for the development and location of the interpretive media within them. The Thematic Program Plan represents a more detailed treatment of each exhibit zone, isolating and prioritizing concepts. It also addresses the relationships between exhibit zones and guides the development of storylines and visitor circulation routes. Our Design Standards Manual for interpretation includes guidelines for interpretive media design as well as shop drawings, specifications and standards. The relationship between this manual and the Thematic Program Plan is essentially the relationship between form and function, medium and message.

Exhibit story lines must be refined as the planning focus for each exhibit zone becomes more highly resolved. Similarly, the final selection and design of media must occur in concert with other design decisions related to architecture and landscape. But media decisions occur within a framework of control statements and criteria contained in the Interpretive Guidance Plan, the Thematic Program Plan and the Design Standards for Communication Media

There is no single planning model that fits all interpretive environments or even all zoos. However, interpreters are likely to be more effective if they understand the forces that have created the interpretive settings in which they work. In the case of zoos undergoing substantial redevelopment, these forces include overlapping eras of exhibit design each with its own conventions of interpretive media. But are these conventions really appropriate? To what degree do we unwittingly project inappropriate conventions into the future? As exhibit design evolves, shouldn't interpretive design evolve as well? In this coevolution of interpretive and zoo exhibit design, perhaps we catch a glimpse of the future: a thoughtful balance of high-touch and high-tech media in an appropriate context-a context in which live animals and their reliance on natural habitat becomes increasingly self-evident. There are important questions to be asked during this era of zoo renaissance--an era that offers greater challenges and greater opportunities for zoo interpreters than any time preceding it. For zoo interpreters, the future has arrived.

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INTERPRETATION OF AN ENDANGERED SPECIES: THE RED-COCKADED WOODPECKER STORY

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ABSTRACT: The endangered red-cockaded woodpecker (RCW) has a unique life history and ecology that lends itself to interpretive techniques. This paper explores and explains: 1) the reasons why the RCW has interpreive value, 2) "tools" for successful RCW interpretation and 3) various RCW interpretive success stories. The ideas in this paper will be used on-the-ground during our field trip to the Francis Marion National Forest, where Hurricane Hugo destroyed most of the RCW cavity trees.
KEYWORDS: endangered species, interpretation, wildlife, red-cockaded woodpecker

LIFE HISTORY AND ECOLOGY

The red-cockaded woodpecker, *Picoides borealis*, has a unique biology that lends to its interpretive appeal. The RCW was once a common bird in the mature pine forests of the southeastern United States. Due primarily to habitat loss, the species is now on the federal endangered species list.

The RCW is slightly larger than a bluebird. The back and top of the head are black. Numerous, small white spots, arranged in horizontal rows on the back, give a ladder-back appearance. The cheek is white. Males and females are similar in appearance, except males have a small group of red feathers (cockade) above their cheek. The red cockade is rarely seen and then only with good sunlight and binoculars. Juvenile males have a red patch on the very top of the head until the fall of their hatching year.

Among woodpeckers, the RCW has an advanced social system. The birds live in a group called a clan. The clan may have 1 to 9 birds, but never more than one breeding pair. Young birds remain with their parents through the summer and into the fall at which time the females disperse or are driven from the clan. The male juveniles may stay on as helpers for several years. They assist the breeding pair with all aspects of clan activity, including raising of future generations, construction of new cavities, and territory defense.

A clan nests and roosts in a group of cavity trees called a colony. The colony may contain one to more than 20 trees. A good colony site is a mature, park-like stand (generally longleaf pine) with few or no hardwood trees. Cavities are excavated in live, mature pine trees. Studies throughout the southern United States found the average cavity tree age ranged from 62 to more than 176 years old.

Typically, within any colony, some cavities are finished and in use, others are under construction and some have been abandoned. Cavity construction can be completed in 4 to 5 months, but typically takes a year or more. Only the RCW constructs cavities in live pines, however, 11 other birds, 5 mammals, 4 reptiles and bees are known to use the cavities. Some of the major competitors are the red-bellied woodpecker, pileated woodpecker, red-headed woodpecker, great crested flycatcher and flying squirrel.

Scattered about the trunk near the cavity entrance are numerous small holes called resin wells, chipped through the bark. Resin flow from these wells eventually coats the trunk. The birds regularly peck at resin wells to stimulate resin flow, and the resin-coated trunk acts as a predator deterrent, particularly for tree climbing snakes like red and black rat snakes.

The RCW nests between late April and July. The female lays 2 to 4 eggs in her mate's roost cavity. Clan members take turns incubating the eggs during the day, but the breeding male stays with the eggs at night. The eggs hatch in 10 to 12 days and nestlings are fed by the parents and the helpers. Young birds leave the nest (fledge) in about 26 days.

The clan spends much of its time foraging for food as is travels about its territory. Most of the searching is concentrated on the trunks and limbs of live pine trees. There, the birds scale the bark and dig into dead limbs for spiders, ants, cockroaches, centipedes and the eggs and larvae of various insects.

Adequate foraging habitat is vital to the RCW. Good foraging habitat consists of pine stands with trees 10 inches and larger in diameter. The acreage of foraging habitat needed by a clan varies with the quality of their habitat. One hundred twenty-five acres of pine is sufficient for some clans. In some areas, habitat conditions are not ideal or competition from other clans is low. In these situations, clans commonly forage over several hundred acres.

RCW'S INTERPRETIVE VALUE

The RCW is not only unique in its life history and ecology, but perhaps in its "availability" and potential for endangered species interpretation. Unlike many other endangered species the RCW has several characteristics that lend to its interpretive appeal. These include:

1) a wide (Texas to North Carolina) distribution,

2) populations or individual colonies close to urban centers,

3) ease of observation, and

4) 100 percent probability of "hands on" (observation or trapping) experience for all participants, with a minimum of preparation by interpreters or group leaders. Logistically then, the RCW is undoubtably one of the "easiest" endangered species to interpret.

For several other reasons, the RCW is invaluable as an interpretive species. Because the RCW is a "keystone" species and hence an ecosystem ("old growth" southern pine) representative, its status and plight can be used to discuss the southern pine ecosystem; its history, the remaining resource, its current management and its future.

The RCW story can be broadened to:

1) tell a regional ecosystem story,

2) develop parallels with other ecosystems, i.e. spotted owls, Northwest "old growth", and

3) illustrate the complexities (economic, biopolitical, social) of endangered species conservation.

At a smaller scale, a "day-in-the-life of a RCW colony" can provide many simple lessons in the complexities of community ecology. Life in an active RCW colony is very dynamic and educators and participants may witness or discuss:

1) inter and intraspecific competition for cavities and foraging substrates,

2) RCW predators such as rat snakes, raptors and flying squirrels,

3) nesting and foraging habitat use and value, and

4) relationships between ecosystem components such as longleaf pine-fire, tree age-RCW nesting or foraging use, RCW cavity trees-soil type, and RCW avian community diversity. The ability to illustrate these ecological principles and concepts in an understandable fashion and in a "field" setting close to communities is a definite bonus for interested educators and conservationists.

Another reason for the RCW's excellent interpretive appeal is that even locally (nearest National Forest, State Park or Forest), there are RCW conservation and management efforts being implemented and practiced. These activities provide opportunities for first-hand experience into one or more phases of an endangered species "recovery" program. Interpreters, educators and participants have opportunities to learn about, or participate in, various projects involving RCW recovery.

Coordination of these efforts with federal agencies, including the USDA Forest Service, and the USDI National Park Service and Fish and Wildlife Service, along with state and private agencies and universities, can lead to increased volunteer participation. Projects may include

1) identification and protection of habitat,

2) inventorying suitable habitat for cavity trees,

3) monitoring colonies for clan structure and composition, breeding success, and identification of foraging habitat,

4) assisting with trapping, banding and other research related activities, and

5) hands-on habitat management work. Concurrent with these activities are award programs that dovetail with conservation efforts. We as professional interpreters can increase the visibility of your efforts by coordinating programs and publicizing volunteer activities.

We believe the value of the RCW and its associated habitat, as an environmental education "tool" cannot be overstated. Interpreting the RCW to illustrate:

1) endangered species conservation principles,

2) community and landscape ecology concepts,

3) natural resource management alternatives and objectives, and

4) recovery program processes, is neither difficult or expensive, yet challenging, satisfying and successful.

The RCW story is successful because it is:

1) generally, logistically easy and efficient, available to all age groups, and to persons with disabilities;

2) always successful in the field (with a minimum of preparation), guaranteeing opportunities for close observation and/or actual bird handling, when working with qualified and "permitted" personnel;

3) easy to understand, yet illustrates and opens doors to many ecologically complex relationships; and

4) available for hands-on habitat and study projects, enabling interested volunteers to become and remain interested in the species.

TOOLS FOR THE INTERPRETER

Now that we have discussed why the RCW is excellent for endangered species interpretation we will highlight the tools, programs and methods that have worked successfully for us.

Basic to RCW interpretation are slide shows. Whether illustrating life history and ecology, southern pine beetle-RCW relationships, effects of wildfires or hurricanes (Hugo) on RCW's, or habitat management programs, slide shows get the message across to relatively large audiences in an indoor or outdoor setting. A logical follow-up to a slide show is a field trip or "discovery walk" to a RCW colony.

Early mornings and evenings are the best times to view RCW activity. The RCW often forages and constructs cavities in open forest stands. Ease of access and visible evidence of the cavity trees lend themselves to interpretive success. Coordinating tours with local wildlife specialists, including federal and state wildlife biologists and resident ornithologists, will increase the success of the experience. Such excursions may or may not include banding birds. Field trips can also be designed around weekend projects to improve or maintain habitat. Care must be taken during the breeding season to minimize disturbance. Check local regulations on vehicle access and any other restrictions.

The above activities are especially profitable to youth groups, including Girl Scouts and Boy Scouts, Cub Scouts and Brownies, Webelos, Camp Fire Girls, 4H and other youth organizations. Outdoor education and landscape ecology courses can also be conducted in this environment. Field use of a slide projector with a built in screen coupled to a portable generator may enhance the field experience by reinforcing the biology and ecology of the RCW and its forest ecosystem. However, this technique must be weighed against the "teachability" of the moment and may best be left to a more formal lecture session. The ease of access and high visibility in many RCW colonies lend themselves to unique interpretive experiences. Elderhostels, youth groups, or wildlife ecology classes can easily traverse colonies.

Development of informational pamphlets, including self-guided auto tours through RCW habitat and adjacent RCW colonies, are simple, yet effective ways to get the word out. Similarly, using the RCW as the symbol or logo of a program or project is beneficial. Hats, T-shirts and buttons with RCW logos are effective and inexpensive advertisements.

Adopt-a-Clan programs have been very successful on several National Forests. Individuals or small groups (Scout Troop) choose a clan to adopt. On the initial visit all RCW's are trapped and banded by the volunteers and (permitted) wildlife biologist. The clan is subsequently monitored (weekly, monthly, or whenever possible) by the volunteers. Data may be gathered to:

1) identify habitat used for foraging,

2) record breeding and nesting activity and

3) investigate clan dynamics. These programs have commonly fostered long-term volunteer commitments. The data collected can contribute significantly to the management program for a local population.

Using the media to help interpret the RCW and its habitat can be very effective. Although the biopolitics and economic concerns of RCW conservation may be of interest to the media, RCW recovery projects especially when involving cooperative efforts with volunteers, are very newsworthy and, generally sought after by the media. The key to media involvement is the ability to trap and band birds. *"A picture is worth a thousand words"* is certainly true in this case. Local, state and nationally distributed newspapers, and local television news programs are always seeking *"wildlife"* stories.

The thrill of any early morning bird trapping episode in the *"woods"* is hard to pass up for the city-bound newscaster. Guaranteed opportunities to photograph an endangered species will rarely be missed by media personnel. Of course, once the story is on the airwaves, evening news and front page, the phone calls start. Schools, scouts, service organizations, conservation groups, and others will be requesting slide shows, field trips and projects. For this reason, media coverage is an excellent way to begin an RCW interpretive program in an area, city or town, where none now exists. And, by inviting public participation via the media the program will soon be *"off-the-ground"* and flying!

RCW INTERPRETIVE SUCCESS STORIES

Our involvement with RCW interpretation has spanned 5 years and 3 states. We have worked with, taught and cooperated with many diverse and interested parties in our efforts to tell the RCW story. This paper is another effort to reach additional individuals who can help spread the endangered species story. We have shared our experiences with professional societies, universities, scouts, schools (K-12), conservation organizations, senior citizen groups, Congressmen and Senators, social, civic, and service groups, media, including television, radio and newspaper, and state and federal cooperators.

Although program success can be measured in several ways, awards presented to individuals or groups and sponsored by federal agencies responsible for species recovery, including the U.S. Forest Service, National Park Service and U.S. Fish and Wildlife Service, are commonly used as measures of successful projects. The **Take Pride in America** initiative is one such award program.

This program is intended to enhance the volunteer efforts of conservation groups and other individuals that work to improve the environment. One example of this includes a Boy Scout troop in Nacogdoches, Texas, that cleared brush, small trees and other potential fuel from around the base of RCW cavity trees on the Angelina National Forest. This was done in preparation for a controlled burn conducted by the Forest Service. This project reduced fuel loading, complemented the District Ranger's work, and resulted in the award of a **Take Pride in America** plaque to both the individual Boy Scout who led the activity and to the troop.

In conjunction with habitat improvement was the interpretive value garnered during the project. This included, RCW observation, increased awareness and appreciation of the ecosystem's complexities, discussions about the variety of forest management options, and the comradery developed during the activity.

In addition to awards, program success can be measured by other standards. The seemingly, geometrically-increasing requests for RCW "shows" and field trips on National Forests confirms our beliefs that the public is not only starved for environmental education and interested in the RCW where they still survive, but also thankful for opportunities to participate in quality interpretive programs.

While stationed on the Kisatchie National Forest in Louisiana (1985-1988) Costa presented 28 RCW interpretive programs. These included, professional papers and poster displays, university seminars, school (K-12) talks and field trips, presentations at monthly meetings of conservation organizations, newspaper articles and a 10-minute television special.

Since transferring to the Apalachicola National Forest in Florida in June 1988, Costa has presented over 40 RCW programs. In addition to all the previously mentioned organizations, several other audiences, including girl and boy scout troops, senior citizens homes, public radio and 4 television stations have been added to the interest groups. The Apalachicola

National Forest has also focused attention on the RCW by:

1) publishing a free pamphlet on RCW life history and ecology, with a self guided auto tour,

2) featured the RCW on the logo for the Forest's first Natural Resources Career Camp and

3) initiating public awareness efforts via television specials and popular magazines.

Perhaps the best measure of successful endangered species interpretation is species recovery. Endangered species recovery is ultimately dependent upon "overlapping" as much of the species' biological habitat with society's "political habitat" as possible. We will only preserve ecosystems and recover species as long as society allows the economic and social compromises necessary to do so, to continue.

Gaining the public's consent and helping them make informed decisions concerning endangered species conservation requires increasing their ecological knowledge. This is the role of the professional interpreter (educator, biologist, naturalist). We challenge those of you interested in and concerned about endangered species and their associated ecosystems to share your talents and participate in endangered species interpretation.

SUMMARY

The unique biology of the red-cockaded woodpecker lends itself to an interactive interpretive story that will attract the attention of people of all ages. In Charleston at the National Association for Interpretation National Interpreters Workshop, this presentation will be coupled with a field expedition to the Francis Marion National Forest in search of the red-cockaded woodpecker and a discussion of the effects of Hugo on this endangered species. During the presentation, come see the red-cockaded woodpecker forest; interpret a red-cockaded woodpecker colony; discover resin wells; unravel for yourself the unique ecology of this endangered species.

CHUCKY'S RANGERS: COMBINING STORYTELLING,PUPPET MAKING AND MUSIC IN A CHILDREN'S NATURE PROGRAM

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ABSTRACT: In a search for new program ideas, "Chucky" was developed for a summer day camp for children 7-11. The objective was to have a program that related to wildlife that was common to the George Washington Memorial Parkway. With the woodchuck as our subject, we used the following as a guide for developing the program: it had to be simple and fun; it had to hold the attention of children 7-11 for 90 minutes; and provide something concrete to reinforce the experience. The use of storytelling, puppet making and music was successful.
KEYWORDS: Story, personalize, grabbers, story phase, puppet, sing-along, portable, expandable, adaptable

"TEDDY'S KIDS CAMP"

Five years ago, in response to increasing requests for children's programs, the staff of the George Washington Memorial Parkway developed a one day a week environmental education day camp for children 7 to 11 years of age. Designed to be held on Theodore Roosevelt Island, the camp was named "Teddy's Kids Camp".

The Program design included three 90 minute activity periods with no more than ten children per ranger. In addition to a 30 minute opening exercise, there were two, one hour special programs for the whole group (which varies from 30 to 80 depending on staff availability).

"CHUCKY'S RANGERS"

While there are activities that have remained essentially the same since the first year, we have tried to develop at least two new programs each year. "Chucky's Rangers" was one of the new programs developed for the 1989 season. In developing new programs we did not always use the same goal or the same criteria.

For this particular program we wanted to address a specific situation or problem on the Parkway. We also wanted to select a part of nature that was abundant and visible. The large number of road kills that we have on the parkway defined a situation and the frequency of woodchucks grazing beside the roadway gave us a natural subject for our program.

WHAT DO WE DO?

We sit the kids down and present our three grabbers: we're going to tell them a story, make something to take home, and - "for all the budding rock stars"—learn a new song. That way, even the kids who feel they're too old for stories can look forward to making something to take home, or learning a song. Then we launch into our story.

Our first problem is to bring our story to life. So we tell them a *story*. No lights, no slides, no smoke and mirrors - just imagination. We try to capture even the cynics with interesting facts about the natural history of woodchucks, and we *personalize* the natural history by letting Chucky tell his own story.

CHUCKY'S STORY

Chucky is born and matures in the story, describing his home, his family, the way he learns to eat and drink, and all the other experiences a young woodchuck needs to grow up—which, we point out, are very similar to ones our audience has had. After a very close brush with a car on the parkway, Chucky is approached by a ranger.

The ranger discusses problems that the parkway traffic poses for the animals that live near it, and concludes that people need to be reminded to slow down and be more careful on the road. And the *story phase* ends with the ranger suggesting the audience get involved by becoming "Chucky's Rangers".

The *puppet phase* of the program takes up where the story leaves off, with each child making a simple, inexpensive puppet out of a tube sock, a rubber band, and a set of eyes. The puppets are a take-home reminder of "Chucky's Rangers", and because even a small child can make one (with some help with the eyes), and because the story has given the puppet a *personality*, they've been very successful. When the puppets are finished, each child gets a ranger hat for their puppet—and they're all made "Chucky's Rangers".

To pull our group back together, and to reinforce our message, we end our program with a *sing-along* about sharing the parkway space with Chucky and his friends. The audience joins in the chorus, and we distribute the words to the song to take home.

CHUCKY IS PORTABLE, EXPANDABLE AND ADAPTABLE

•***He's portable***. We like "Chucky" because he can go anywhere. He can go to schools, he can go out in the resource (just tell his story during a hike to see woodchuck holes), or he can be a camp or visitor center activity.

•***He's expandable.*** Chucky is an ideal format for a parent/child team. Much younger children can participate because they have a parent's one-on-one help with the puppet, and they can continue to talk about Chucky at home.

•***He's adaptable.*** He can be a tree, a wildflower, a stream—any cultural or natural resource that has a story that can been personalized through the use of imagination and a hands-on project.

BUG DAY! BUILDING A SPECIAL EVENT AROUND A CENTRAL THEME

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ABSTRACT: Bug Day is a one day family event centered around insects, spiders and other invertebrates. The goal of the program is to attract families that do not ordinarily attend park programs by offering a large-scale fun and educational event with many ongoing activities. In coordinating these events the author has come up with a format that allows a park district to offer a high quality program beyond its own resources.
KEYWORDS: insects, spiders, family, activities, invertebrates.

BUG DAY!

The idea for Bug Day was born out of promotional materials produced by Workman Publishing. The materials were designed to promote The Bug Book and The Bug Bottle by Dr. Hugh Danks.

Bugs provide an excellent topic to draw families in. Children love bugs and even adults that dislike bugs will show a strong interest in them. The program is designed to: show the differences between insects and spiders, discuss insect life cycles, demonstrate insect locomotion and illustrate the variety of insects, spiders and other invertebrates.

BUG BINGO AND BUG SLIDE SHOW

Two activities, Bug Bingo and Bug Slide Show were provided by Workman Publishing. The publisher provided slides for both activities, a script for the slide show and bingo sheets and prizes for the Bug Bingo game. Six other activities were added to the menu, they include: Microscopic Bugs, Bug Suckers, Bug Stories, Bug Hunt, Mealworm Races, and Six-legged Relay Races.

These activities include quiet presentations, active games, visitor participation and a craft. In future Bug Day events we hope to include Aquatic Bugs, Honey Harvest and a Tarantula spider presentation. The schedule for the day was carefully planned to include ongoing activities as well as scheduled presentations. Families could choose the event they wished to attend if they missed an event, others were available. The schedule was advertised to the public on a large menu sign.

VISITOR PARTICIPATION

In order to encourage visitor participation each child also received a menu card listing each activity, time and location. Adjacent to each activity on the card was a graphic of a lady bug. After participating in an event the lady bug corresponding to that event was removed with a hole punch. Each child that participated in four events received a **Master of Bugology Degree** and sticker. This small incentive worked extremely well. Children were very anxious to receive their degree and sticker.

BUG DAY 1989

An event this size would not have been possible without help from our friends. Thirty-one adult and junior volunteers (age 10-14 yrs.) helped with Bug Day 1989. More specialized assistance came from members of the Young Entomologists Society who set up a display table of live and mounted invertebrates.

Members of the Ohio Lepidopterists Society also provided displays and conducted the Bug Hunt. Members from both of these groups provided expertise beyond that of park staff and were extremely helpful in field identification. Local litter mascots, the **Clean Bee** and the **Litter Bug** provided entertainment for preschool children. Refreshments were sold by local scout troops.

CONCLUSION

Many factors contribute to the success of this program. Below are some important points to remember.

1. Design a program that appeals to the whole family. Many families are looking for things to do together.

2. Have a large variety of events continuing throughout the day to prevent overcrowding and to appeal to varied age groups.

3. Provide an incentive to encourage active visitor participation.

4. Solicit help from volunteers, organizations related to your topic, and businesses as possible sponsors.

5. Choose a theme with broad appeal. Recently Earth Day was set up in this format with success. Other themes might include: reptiles, dinosaurs, rocks, wildlife, rivers, etc.

6. Have fun!

LITERATURE CITED

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Young Entomologist's Society, International Headquarters, Gary Dunn, 1915 Peggy Place, Lansing, MI. 48910. Entomology resource information, 4-H entomology activity books, etc.

PROJECT LEAF: RETROFITTING A GREENHOUSE FOR EDUCATION AND THE FUTURE

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ABSTRACT: The New Canaan Nature Center is faced with how best to use a large state-of-the-art solar greenhouse and how to reach and affect populations that normally do not attend Nature Center programs. The solution these programs is a coordinated set of physical renovations and program innovations known as Project LEAF—Learning and Environmental Action for the Future.
KEYWORDS: education programs, gardening, greenhouse, horticulture, program development.

INTRODUCTION: TWO PROBLEMS

The New Canaan Nature Center physically consists of 40 acres of land in a wealthy Connecticut "bedroom community", with eight buildings on site. One of these is a large solar greenhouse built with state-of-the-art technology in the late 70's. Although impressive in size and complexity, the building is not used to its potential for drawing and providing learning experiences. The staff of the Center is aware of the underutilization of the greenhouse.

The staff is acutely aware of another problem faced by many environmental education facilities. In the model of education based on three A's (awareness, appreciation and action), New Canaan has had great success with the first two but has found it difficult to provide the learning experiences that will spur people to take action in their personal lives.

HOME HORTICULTURE

In researching possible directions for the greenhouse facility we found that horticulture is by far the most popular hobby in this country. In the suburban setting of New Canaan this is perhaps more true than most areas. Care of gardens, lawns, woodlots, ponds and indoor plantings occupies many residents' time and often is the vehicle by which they have direct contact with local wildlife.

"SUBURBAN ECOLOGY"

With this in mind it was decided that the two problems described above would be approached by developing a center for "suburban ecology", the underlying mission being to provide local residents with the information and skills they need to care for their immediate environment "lawns, gardens, woodlots, etc.) in a ecologically sound manner.

The solar greenhouse provides the physical center for the project:

- Creation of a demonstration "naturalist's Backyard Garden"
- Living exhibits to teach the function and ecology of plants
- A children's area in the greenhouse to introduce plant basics
- A demonstration intensive-bed vegetation garden
- Growing space for thematic plant sales and growing programs
- Programmatic developments under way include:
- Simulation games for school classes and scout groups
- Workshops for local Conservation Commissions
- Workshops for real estate and development firms
- Programs for local community and gardening groups

We plan to develop programs for local corporations and to tie in the Center's gift shop with the goals of the project. The workshop will include the strategy being pursued at New Canaan for **Project LEAF** and group brainstorming of strategies to implement similar programs.

INTERPRETATION FOR YOUNG CHILDREN

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ABSTRACT: Through the use of songs, stories, riddles, and hands-on fun, participants will learn techniques for interpretation with young children, with and without parents' involvement.

KEYWORDS: guiding principles, sensory awareness, four season brainstorm.

INTRODUCTION

> If children are to keep alive their inborn sense of wonder, they need the companionship of at least one adult who can share it, rediscovering with them the joy, excitement, and mystery of the world we live in.
>
> I sincerely believe that for the child, and for the adult seeking to guide the child, it is not half so important to know as to feel. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seed must grow.

The Sense of Wonder, Rachel Carson, Harper and Row, NY..

HOW DO WE BEGIN?

1. Start where the learner is, not where you are! Experience with the children...they are teachers too!
2. Be what you want the children to be!...participate, role model.
3. Try not to inflict your fears onto the children! Respect their fears, don't give them yours.
4. When in doubt, be positive...when you know for sure, be positive!
5. Respect children's differences, and their uniqueness...respect animals' uniqueness too!
6. Be honest and don't be afraid to say "I don't know, let's find out."
7. Children learn what they live.
8. You are a child of the universe; no less than the trees and the stars, you have a right to be here.
9. It doesn't really matter whether you think you can or you can't...you are right!
10. Go everywhere, do everything, go go go!

SENSORY AWARENESS

A) SIGHT:

1. Reading pictures...pictures tell a story.
2. Kim's game...remember what's under the blanket.

B) HEARING:

1. Secret box, shake it.
2. Taped sounds, recording from nature and built environment.

C) TOUCH:

1. Touch socks.
2. Prickly/tickly, on your cheek or forehead.

D) SMELL:

1. Jars with extract, smell jars.
2. Grass, soil, leaves, anything you find.

E) TASTE:

1. Fruit/vegetables...buds, broccoli, leaves, lettuce.
2. Wild foods, pros and cons.

SCIENCE:OBSERVING COLLECTING ORDERING

I hear...I forget...
I see...I remember..
do...I understand

FOCUS ON ANIMALS

A) Puppets and stuffed toys:

Country Critters, 217 Neosho, Burlington, KS 66839, (316) 364-8623, puppets

Folkmannis, 1219 Park Avenue, Emeryville, CA 94608, (415) 658-7677, puppets

Firerobin, Box 247, Richmond, VT 05477, (802) 434-2511, finger puppets

B) Animal tracks, rubber feet for stamping purposes:

NASCO, 901 Janesville Ave., Fort Atkinson, WI 53538, (800) 558-9595, (414) 563-2446, flexible animal tracks

C) Live animals.

D) Camouflage...hide and seek, role-play mice and hawks...use pieces of fur and toilet paper tubes.

E) Coloring pictures after seeing the animal.

F) **Puzzles...**large pictures cut up.

G) **Role-playing,** i.e., robin hunt, turtle shells with boxes.

H) **Pets/domestic** animals with straws and puffed wheat.

FOCUS ON PLANTS

A) **Grow seeds,** sprouts, lima beans in plastic cups with toweling.

B) Leaf rubbings/bark rubbings with skinned crayons or ink pads.

C) **Nuts and fruit...**it takes a flower to make a fruit.

D) **Seed dispersal search,** hitchhikers and parachutes and helicopters.

E) **Natural colors,** painting on white paper.

1. Dandelions...yellow.
2. Grass...green.
3. Soil...brown/black, etc.

A FOUR SEASON BRAINSTORM

A) FALL

1. Natural happenings...Bird migration, seed dispersal (it takes a flower to make a fruit; a fruit is the covering for a seed), preparing for winter, etc.

2. Program ideas

a) Study birds and their adaptations, how are they different from other animals. Collect human tools that represent bird adaptation, i.e., a strainer for a duck's bill, a hammer for a woodpecker's bill, etc.

b) Collect seeds, like nuts that people eat and find natural seeds outside like acorns, walnuts, sunflower seeds, and burdock. Then go for a walk in a tall grass field with fuzzy knee socks on, or long pants that are fuzzy (corduroy is good). The socks will "collect" seeds too. In Hug a Tree on page 60 "Grow a Sock" is a great activity. Use Audubon aid on common seed travelers, available at Schlitz Audubon Center.

c) Red *Frederick,* Leo Lionni, as preparation for winter. Read *Mousekin's woodland Sleepers,* Edna Miller, and *Mousekin's Golden House,* Edna Miller.

d) Fly kites and make bat kites, see stencil and study clouds and air in motion. Do a color search puzzle.

B) WINTER

1. Natural happenings...animal tracks can tell who is living around you and where. Cold weather and low sun shadows, snowflakes and frozen water.

2. Program ideas

a) Make footprints in the snow and try to compare your footprints to those made by other animals like cats, dogs, squirrels, birds by a feeder.

b) Feed the birds and try different types of feeders and feed. See handouts. Imitate birds and make up stories about them. Try a human birdfeeder.

c) Read *the Snowy Day,* Ezra J. Keats, *Peterkin Meets a Star,* Emilie Boon, *Mousekin;s Woodland Sleepers,* by Edna Miller, *Two Coyotes,* Carol Carrick. Get animal pictures to enhance the stories or puppets/stuffed toys. Try actual animal parts and furs from loan museums or nature centers, or hunter friends.

C) SPRING

1. Natural happenings...babies are born and sounds are real easy to hear. Buds are popping and young leaves are sprouting. Rains come.

2. Program ideas

a) Do the Rain Cheer, and tape record it. Try to think of the positive side of rain. Do raindrop painting. Catch rain on wax paper and make rivers.

b) Plant seeds, soak lima beans and plant them in a see-through plastic cup. Watch as they grow.

c) Clip twigs (about one foot) from trees and place them in a vase of water and they will produce leaves weeks earlier if put in a sunny, warm window.

d) Read *Chickens Aren't the Only Ones*, by Ruth Heller, *Mousekin's Birth or Family,* by Edna Miller, and *Kartusch,* Stephen Cosgrove.

e) Make sunprint or leaf rubbings/ink prints.

D) SUMMER

1.Natural happenings...flowers bloom, shade is at its best, butterflies are out and insects are busy pollinating flowers. Large animal activity is seen most at night or at dusk and dawn. Animals and plants are growing.

2. Program ideas

a) Color search is easy and a puzzle can be made. Camouflage games can be played.

b) Honeybees are doing their thing; visit an observation hive at a nature center or Honey Acres. Eat honey, fly like bees, do a bee dance and sing a bee song.

c) Read *Honeybee and the Robber*, by Eric Carle, *I Am a Mouse*, Ole Rison, *Mousekin's Close Call*, Edna Miller, *The Very Hungry Caterpillar*, *All Around Us, The Very Busy Spider,* and *The Grouchy Ladybug*, Eric Carle. Use puppets/stuffed toys to enhance the stories and live animals that can bring the story to life.

d) Role play animals, fly like butterflies, birds, bats, walk like pond insects, etc.

PRESERVING AND INTERPRETING OUR LITERARY HERITAGE

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Robert Derry, Site Supervisor, The Wayside, Minute Man National Historical Park, Concord, Massachusetts

Brian Doherty, Site Supervisor, Longfellow National Historic Site, Cambridge, Massachusetts

ABSTRACT: The interpretation of literary figures and/or literary sites presents many challenges and opportunities for even the most seasoned interpreter. Full understanding and appreciation comes from the ability to build relationship and connections between the "creative process," a literary figure and his/her works, and the physical resources through which we know them. The latter may include an historic house, a collection of historic furnishings and other possessions and artifacts, or an archival collection of papers and manuscripts. We must understand any literary figure in the context of his/her own time and the various influences which helped shape their thought and work. And just as important is the interpreter's task of making a writer and his/her works relevant for today's visitors - that is the enduring and universal nature of great literature.
KEYWORDS: literary history, interpretive techniques, children's interpretation

LITERARY FIGURES

Materials presented in this Poster Session will illustrate examples of successful interpretive programs at two well-known literary sites administered by the National Park Service in the North Atlantic Region. Longfellow National Historic Site, the home of Henry Wadsworth Longfellow, in Cambridge, Massachusetts, hosts a popular Children's Poetry Program and an ongoing poetry reading program featuring works by contemporary poets.

The Wayside in Concord, Massachusetts, now a unit of minute Man National Historical Park, was home to three famous literary families —at various times—whose most celebrated members included Louisa May Alcott, Nathaniel Hawthorne, and Margaret Sidney. In addition to the regular interpretive tours of the houses and exhibits, a successful community relationship has been built up with other "Literary Concord" sites which recall Ralph Waldo Emerson, Henry David Thoreau, and others.

DON'T AVOID ISSUE INTERPRETATION

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ABSTRACT: As 1990 began, a renewed interest in the status of our environment was noted. The public asked questions of officials what they had accomplished in the last twenty years. Many agencies were caught flat-footed; others noted that the answers were available, but the public was not informed. Agencies who had for years told their staff "don't deal with the controversial topics", were realizing their mistake. Our public wanted more information on environmental concerns. While there was information available, public access was rather guarded. From this desire for details on environmental problems, "Conservation Issues Forums" was born.
KEYWORDS: Conservation, environmental issues, Earth Day

DETERMINING THE NEED

As part of the Waterman Conservation Education Center's celebration of the 20th anniversary of Earth Day, we distributed pledges to our members and visitors. These pledges asked each person to list the three most important environmental issues facing the earth. This list of issues was compiled and the results were ranked. While many of the issues were global, there were a few of local concern.

In talking with our visitors we discovered that they felt it was difficult for them to make responsible decision about these issues. Most of them were aware that with the problems being faced by our environment today, more technical information will be required to make the "correct" decision. Our visitors were frustrated since they realized the need for further information, but were unable to find a source .

ORGANIZATION OF THE FORUMS

We would began our forums by looking at local issues, and then expanded into regional and global ones. We examined our list of concerns and divided them into local, regional and global issues.We searched for speakers who could discuss the various topics. We devised a specific format allowing for a great deal of information sharing between the speaker and the participants. Each speaker was given an outline and asked to provide discussion handouts.

FORUM

Each Forum is broken up into three main parts. **First**, the speaker introduces the issue. The speaker is asked to present information only, not to take stands. The **second** group examines individual parts of the overall issue.

Finally, the small discussion groups are brought together and report on their findings. The speaker then wraps up the forum with a discussion participant involvement in this issue. We do not attempt to mold the participants to our point of view, although we recognize that by determining the topic and speaker we do impact their decision. Our point in offering the forums is to offer information so responsible decision can be made.

FORUM FEEDBACK

Our forums began last spring. Each month we scheduled a different topic and speaker. Although we have not experienced an onslaught of participants, the series is valuable. Other agencies in our area are copying our format. The forums have attracted a new audience and new members credit their membership to the forums. We have attracted the interest of politicians (State Senators, mayors, etc.) who are kept informed of each forum. A local municipality agreed to fund this series.

With the increase in membership, the new audience, and more information on important issues, we feel this program is extremely important. The future is on its way and what it will look like is up to them. If we are asking the public to support environmentally safe products and procedures, we need to provide information. Tree-hugging and oooh aaah programs are important, but it is time to offer more. The future of our planet is in their hands.

ENVIRONMENTAL INTERPRETATION

DR. MIKE LEGG

The twentieth anniversary of **EARTHDAY** has come and gone. It brought with it a great deal of talk about saving the environment. Perhaps the opportunity to save it has passed and the more appropriate word is restore, but whether save or restore now is certainly the time for action, not just rhetoric. Central to most environmental issues is the limited awareness of me public concerning the limited nature of our planet Earth. As interpreters we have the obligation of carrying our audiences beyond the level of simple awareness to one of respect and understanding. Simply being aware of society's transgressions does not do much toward solving the problems. We must somehow communicate the message that this earthly environment nourishes the very bodies we live in and sustains our spirits. It is literally our home! Not just a house or an apartment from which we can move with impunity; it is the place that our parents and their parents before them lived, loved and died. It is the place in which we also shall live,love and die forever.

The Earth has been compared to a small ship sailing on a dark sea far from the reach of any land. Far years it sailed in relative harmony with the sea, but recent generations of passengers have not lived in harmony with either the sea or the ship. We have opened the hatches and robbed the lower decks of the treasures stored up for generations. We have fouled the decks with our own wastes, and the ocean is stained behind us by a floating scum of oil and trash. We have become so many and crowded that some starve so that others can grow fat. We have even set hot glowing coals on the deck to keep up warm and pray that they don't ignite the entire ship. We seemingly drift blindly toward our fate, and the spectre of our fate is not a pretty one. We will be saved from annihilation only by the care, work and love that we give our fragile craft.

The papers in this section range from the practical to the philosophical, but they all carry the same general message, interpreters must play an increasingly important role in preservation and restoration of a habitable environment. Several papers make practical suggestions of programs that can make a difference is your on neighborhood. The growing interest and necessity of recycling and conservation certainly offer excellent opportunities for interpretive programs that get to the problem of environmental respect. The extent of the impact of our own civilization is documented by Richard Cunningham and his paper should stir concern and hopefully action from us all. Dr. Paul Risk urges us to be facilitators of reasonable discussion and stand in the gap between our agencies and radicals on either extreme. Finally Robyn Myers points out that environmental education is a lifelong practice.

The issues are numerous, but the role of the interpreter is well documented. We certainly do have an obligation to promote not only environmental awareness, but environmental respect and action.

ENVIRONMENTAL ISSUES RESOLUTION IN INTERPRETATION: THE ROLE OF COMMUNICATION

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ABSTRACT: The general public is rapidly becoming more environmentally aware. However, distorted views promulgated by extremist groups and enhanced by limited environmental education background pose a challenge to interpreters. Effective communication skills particularly those of negotiation and mediation are urgently needed to balance the widely diverse messages and emotionally tinged encounters which are developing. Interpreters will play an increasingly vital role as environmental spokes-people not only for traditional park and environmental center audiences but to people in general. Their effect can be a critical source of stability and calm enlightenment.
KEYWORDS: conflict resolution, controversy, interpersonal communication

THE BIRTH OF THE ENVIRONMENTAL MOVEMENT

In the spring of 1970, in response to a suddenly growing public awareness of environmental problems, Earth Day burst upon the scene. To a large extent concerns about the environment reached a crescendo not so much because of scholarly research and publication but due to the efforts of writers who were able to touch emotional chords in the hearts of non-professional public readers. Examples of this type of writing are Rachel Carson's *Silent Spring* and other similar publications. Carson presented, in powerful language, a spell binding scenario of a spring devoid of bird song caused by DDT's insidious thinning of egg shells making them too fragile for incubation.

Exactly 20 years later to the day an effort to resurrect that fervor took place during Earth Day 1990. Major differences in the new approach were a massive media blitz and an apparently successful program to enlist the aid of corporate America- the old nemesis of the 70's. And, this is an encouraging accomplishment since many of today's business leaders seem to realize that responsible environmental practices are not only good public relations but necessary for public safety.

However, just as in the 70's we are seeing a move by some toward militant, antisocial methods in promoting environmental concerns. Cult-like (in the worse sense of the word) groups now exist whose members display a type of single minded, tunnel visioned rage. They are too frequently avowed enemies of any and all who would differ in any way with their view of right action.

THE CULT OF ENVIRONMENTALISM

A cult, according to most dictionaries is a system of religious worship. But other explanations center around a faddish devotion to a system of beliefs or a religious zeal attached to a non-religious object or group. Unfortunately, causes of all types tend to attract zealots ranging from moderate to flaming radicals and environmental cults certainly have their share of these extremists who do us a great disservice by alienating large masses of the non-professional public whose support is critical to success in the environmental movement.

Particularly, some groups have attained broad public notoriety from their use of civil disobedience, raucous, crude, offensive and even criminal methods of forcing their beliefs on everyone.

EMOTIONALITY AND OVERSIMPLIFICATION

These groups often use oversimplification, popular mythology (the Bambi, Beauty and Bounteous Love Syndrome), partial truths which rely on public ignorance of basic ecology and biology and appeals to the values of motherhood (Bambi again), apple pie and patriotism. Who can doubt the validity of preserving a tree whose "...mouth is pressed against the earth's sweet flowing breast" (Joyce Kilmer, "Trees")? When whale and dolphin communication can be made audible to humans and the assumption made that they learn and love just like people (remember Monstro and Flipper?) a strong emotional bond is developed toward them. Who can fail to love a little, harmless, wise (Disney said so), friendly owl whose domain is threatened by crass, cussing, tobacco spitting loggers whose lives revolve around chain saw massacres of forests and all the inhabitants thereof?

CONSERVATION VERSUS PRESERVATION

Conservation practices assume wise, balanced *use* and an interactive stewardship involving a keen awareness of the "web of life" of which we are all inextricably a part. Preservation often is an elitist practice locking up species in an unrealistic way sometimes for a group's special interests.

For example, National Forests have for years been operated under enabling legislation based on "multiple use" policies. Harvesting timber has been an integral part of this plan. But there are those who would prohibit all logging in National Forests as though they were special wilderness preserves or National Parks. Advertising in opposition to timber harvesting has recently appeared asking, "Did you know they are *still* cutting trees in your National Forests?" as though the practice was something new and a conspiracy to rape and pillage a forest type.

THE ENVIRONMENTAL MOVEMENT IS GOOD—BUT

I am *not* condemning the environmental movement. Without the beneficial enlightenment which has occurred over the last 20 years the earth would be in far more trouble than is currently the case. I *am* saying that rather than cooperation through communication, battle lines have been drawn separating environmentalists from the general populace. This has happened because well meaning people have been too heavy-handed in their approach to problem solving. A feeling of "them" versus "us" has emerged in a growing adversarial climate which is not conducive to progress. Civil disobedience and criminal acts did not work in the 70's and they will not work now. Calm, well thought out dialogue *will*.

WHY DO WE NEED TO COMMUNICATE?

There is a real danger in education. t lies in the assumption made by each new student that "everybody" knows as much as they do about a given subject. It is a danger in families, corporations and civilization. When each of us possesses a particular kind of information we may pass it on to the first children, employees, etc. But with time we forget the need for constant renewal. For each succeeding generation it is vital that interpreters and other educators teach basic principles.

It has been said that those who remain ignorant of history are doomed to repeat its mistakes. Educators have told us recently that there are many high school students who do not know who Winston Churchill was, what the Magna Charta was, who we fought in the Second World War or what Viet Nam was about. Should we expect that from a largely urban and thus environmentally isolated populace would understand multiple use, fire ecology, predation, reforestation, even-age cutting, biological magnification or Leopold's Land Ethic?

Initial education and periodic renewal of the process lies at the heart of an informed public and of responsible environmental action.

CHANGING AUDIENCES

In today's technologically oriented world satellite transmission of information has shrunk our globe.

Virtually at the same moment it takes place we see a massacre in China, troops in Saudi Arabia participating in Operation Desert Shield and Spotted Owl protesters chained to trees in the Pacific Northwest. The coverage of news in our world is big business and an ever growing audience is becoming environmentally aware. As interpreters we must respond to this growth. It is no longer satisfactory only to preach to the converted in the pristine confines of sheltered forest glades. Rather we must also view the global population as our audience as increasing publicity expands the numbers of those with superficial and often grossly biased information. We need to communicate more with the general public at all levels of age and experience.

OPEN DIALOGUE WITH SPECIAL INTEREST GROUPS IS CRITICAL

In spite of my earlier comments, we must open and maintain a cooperative dialogue with groups who seem radical in their manner. Only in this way can we begin to dilute the thick juice of contention. Some of the best ways to inject sanity and calm into what otherwise may be entirely confrontational is to learn and practice techniques of diplomacy, tact, mediation, negotiation and compromise. Participation in activist groups is another worthy technique. It is usually impossible to initiate change from outside an organization. Too often people respond to frustration by withdrawing themselves from active participation. There is great truth to the idea that if you don't play the game you can never win. Compromise and negotiation are critical elements in environmental controversy.

Tact and diplomacy are twin guarantors of success. We cannot browbeat people into the environmental posture we want. Neither can we frighten them into conformity. Hard sell and doomsday approaches were tried, largely unsuccessfully in the 1970's. Rather, we must use the utmost care coupled with expert interpersonal skills if we are to *reason* with our audiences and convince them of anything.

ANGER AND FRUSTRATION

Many arguments escalate simply because emotion gets in the way of reason. As interpreters we must remain calm. Always remember that nobody can make you angry without your permission. Remain open minded, viewing the controversy in an emotionally distant fashion. Present views and observations which avoid the too frequent use of the pronoun "I". Learn to listen at least as much as you plan to talk and cultivate the ability to be a *good* listener. Listening is a learned thing dependent upon focused attention and realization that the other person has some valid points to make too.

AVOID ABRASIVENESS, OFFICIOUSNESS AND PERSONAL MISSIONS

Remember the words of a sign I saw on the wall of a small store in Texas: "90% of the Friction in Life is Caused by Someone Using the Wrong Tone of Voice". In other words, it's often not *what* someone says, it's *how* they say it that creates the problems. And sometimes it's just the way we *look* at someone. There is definitely something to the concept of silent contempt and we all know what it means when somebody "looks at us hard". An abrasive, officious demeanor will not accomplish our goals. Neither will personal missions. To make environmental concerns a *personal* battle assures that it will be very difficult to maintain objectivity and reduces our chances of success.

TO WHOM AND FOR WHOM?

Perhaps it is appropriate to consider that interpreters ought to have two major roles.

The first is traditional and involves visitors who actively use parks and environmental centers. However, it has been suggested that less than 50% of those who enter U. S. National Parks take part in any form of interpretive services. There is little information on what effect our messages have on that half of the park visiting public but we ought to be especially worried about the slightly more than half who have no contact with interpreters. Whatever the case, the interpretive contacts we do make ought to be of the highest quality.

The second role revolves around the need to reach a far wider audience than has been the case traditionally.

With the dramatic expansion of environmentally aware people especially in the United States, interpreters must take upon themselves the responsibility of becoming balanced spokes-people for the environment, disseminating accurate information and serving, in some cases as negotiators and moderators in environmental matters.

Communication has always been the name of the game. But, every passing year demonstrates with far more emphasis the critical need in this area and should prompt all thinking interpreters to fine-hone their interpersonal communication skills. Communication tools are being used with great expertise by those with lopsided environmental views. Should we do any less?

THE BIOLOGICAL IMPACTS OF 1492

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ABSTRACT: In 1992 the Western Hemisphere will celebrate the Columbus Quincentennial. There will be many planned events focusing on the historical and cultural significance of the Columbus event. Certainly of equal importance are the historic biological ramifications. This presentation provides an overview of the biological and ecological impact of 1492. The West Indies and Florida are examined from the perspective of five centuries of environmental and cultural change. Human, animal and plant extinctions, the impacts of introduced alien species, deforestation, changing land uses, and the status of selected threatened and endangered species will be covered. The current status of national parks and equivalent reserves and the role of ecotourism are discussed. When the Old World met the New, both worlds changed. The ecological impacts of 1492 are still continuing. They provide an important interpretive and educational story that needs to be communicated to the American public.
KEYWORDS: Environmental change, extinction, alien species, interpretation/education.

OCTOBER 7, 1492

On October 7, 1492, Christopher Columbus, observing southbound migratory birds changed his course to the west-southwest. Five days later he made landfall in the Bahamas. Thus the biology of the New World affected the Old World's course of history, before the Old World forever affected the biology of the New World.

The log of Columbus' first voyage is replete with superlative descriptions of the beauty and natural history of what was seen. Huge trees (canoes) capable of holding about 150 men, flocks of parrots and other birds so dense as to blot out the sun, fragrant and beautiful flowers were commonly described. The people encountered were gentle, peaceful, and friendly (Fuson 1987).

There is still much beauty to be seen in the West Indies. Tourism is a prime economy of many of the islands. But 500 years of environmental change have had disastrous biological impacts on the Caribbean. Within two decades of their initial contact with the Spanish, the Taino Indians, the first people Columbus encountered, had disappeared from the Bahamas. They were probably the first new World vertebrate extinction caused by contact with the Old World (Watts 1987).

Though the combined land mass of all the West Indian islands is about equivalent to the size of Oregon, they contain almost as many terrestrial animal species found in the United States and Canada together. Beginning with Spanish colonization of Hispaniola in 1493 the extinction process that still continues today began. Of the 39 species of Western Hemisphere mammals that have become extinct since 1600, 34 species were native to the West Indies.

By 1550, 57 years after the founding of the first permanent New World colony, the first mammal became extinct. During the period 1600 to 1973, six birds, 34 mammals and ten reptiles have gone extinct in the West Indies: a total of 50 species. During this same period North America lost only eight species of vertebrate animals (Day 1989; Nilsson 1983; Woods 1989).

NATIVE WEST INDIAN MAMMAL FAUNA

The loss of the Native West Indian mammal fauna provides one of the best examples of human impacts, both pre and post Colombian. Pre-human contact extinctions of West Indian land mammals has been attributed to late Pleistocene climatic change and post-glacial sea level rise. Man arrived in the West Indies about

4,500 years ago and spread throughout the islands. The remains of several extinct mammal species have been found in many Amerindian archaeological sites. Apparently several mammal species were important food items (Watts 1989; Gill 1978; Sauer 1969).

Human caused extinctions have been due to direct exploitation for food and by habitat destruction. A third major cause of West Indian mammal extinctions is due to competition and/or predation by certain Old World mammals. This is especially true of rodents of the genus *Rattus*, mongooses, dogs and cats, which were all accidental or intentional post-Columbian introductions.

Of the 76 recognized species of West Indian terrestrial mammals, 67 species (about 90 percent) have become extinct in the last 20,000 years. This is an extinction rate of one species every 299 years. At least 37 of the 67 species have gone extinct in the last 4,500 years, since humans first inhabited the islands. This represents an extinction rate of one species every 122 years. In addition to the terrestrial mammals, at least 59 bat species are known from the West Indies, eight (14 percent) species of which are extinct.

Thus bats have suffered the fewest extinctions of any West Indian mammal group. Puerto Rico and all of the Lesser Antilles have no surviving native non-flying mammal species. Hispaniola contains one species each of the insectivore *Solenodon* and a capromyid rodent. Cuba has the greatest surviving diversity of native mammals of any West Indian island. From four to nine species of capromyid rodents and a single species of *Solenodon* (which is near extinction) still survive on this largest island of the Caribbean (Morgan and Woods 1986).

DOGS

A "weapon" the Spanish used as part of their conquest of the New World was large dogs especially bred and trained for human combat. In 1493, on Columbus' second voyage (which included 17 ships and about 1,500 men), attack dogs were introduced into Hispaniola to intimidate the Indians. The voyage included twenty purebred mastiffs and greyhounds. They proved to be a major military factor in the conquest and eventual extermination of the native peoples of the Caribbean. Within a short time, the dogs began to roam freely over the islands and their population increased. Since there were no other large native mammalian predators on the West Indian islands, the dogs became a significant ecological factor. They apparently had devastating impacts on the native fauna, especially the smaller endemic mammals (Varner and Varner 1983).

COLUMBUS' VOYAGES

Columbus' voyages began the process of "Europeanizing" the New World. The Europeans immediately began to change as much of the New World into as much of the Old World as quickly as they could. For example, the Spanish had an initial resistance to the foods the Indians ate, so they brought their diet with them.

Columbus' second voyage contained seeds and cuttings of wheat, melons, onions, chickpeas, radishes, grapevines, sugarcane, and fruit stones for fruit trees. They also introduced oranges, citrons, lemons, pomegranates, figs and bananas. The sugarcane brought to Hispaniola in 1493 was the precursor of the crop that was to change the environmental face of the West Indies. By the 1530'S there were 34 sugar mills on Hispaniola. As the native Indian populations were decimated, they were replaced by black African slaves.

The movement of food plants was not solely a one-way process of Old World to New. Though the immediate treasures were of gold and silver, eventually the greatest riches the New World gave to the Old were not mineral but vegetable (in other words, biological). Five New World crops alone have become some of the most important foods of mankind the world over: maize (corn), potatoes, sweet potatoes, beans, and manioc. Add to this other important New World crops: tomatoes, green peppers, chile peppers, pineapple, papaya, avocado, squashes, pumpkin, peanuts, cocoa, and guava. Tobacco was also a New World crop (Crosby 1972, Watts 1987).

DOMESTICATED ANIMALS

The other early environmental impact by the Spanish was the introduction of domesticated animals. Columbus' second voyage transported horses, cattle, pigs, sheep, goats, dogs, and chickens. Cattle and pigs had immediate ecological impacts. Pigs adapted extremely well and soon thousands were roaming wild in Hispaniola, Puerto Rico, Cuba, and eventually, Jamaica.

By the 1520'S there were hundreds of cattle roaming on Hispaniola. By 1500 all of the most important of the Old World domesticated animals had reached the New World. The least welcome of these immigrants were black rats. The rats spread throughout the Indies, feeding on native plants and preying on native wildlife. They also fed on domesticated crops leading to the eventual introduction of the mongoose. Rats spread disease that affected the native Indian population, the European settlers, and the African slaves.

BIOHISTORY OF HAITI

A brief biohistory of Haiti is given as an example of 500 years of environmental change. The island of Hispaniola was discovered by Columbus on December 6, 1492. In 1493 Columbus returned to found the first New World colony, named Isabella. It was the eastern two-thirds of the island that was initially developed as that was where the gold was found. The New World's first city was founded at Santo Domingo in 1496 (in today's Dominican Republic). The Spanish deserted the western portion of Hispaniola in the early 1600'S, and English, French, and Dutch pirates moved in.

The western portion became a French possession in 1697. France brought in African slaves which reached a population of almost 500,000 by 1788. A slave revolt in 1791 eventually led to complete independence in 1804. The country adopted its aboriginal name of Haiti and became the second oldest free, independent nation in the Western Hemisphere.

About the size of Maryland, Haiti contains 10,714 square miles; two-thirds of the country is mountainous and the rest is semi arid. Haiti's population is about 6,300,000 (about one million more than that of Maryland). There are about 588 people per square mile and the annual growth rate is 2.3 percent. About one-third of the land is used for agriculture, with coffee, sugarcane, corn, rice, and sorghum the principal crops.

Haiti is the poorest nation in the Western Hemisphere. In 1983 the per capita income was $333.00. In 1987 the unemployment rate was about fifty percent and almost forty percent of the people suffer from malnutrition. Haiti is one of the most environmentally degraded countries in the world and faces serious economic and social problems. It provides one of the best examples of what happens when people abuse the environmental heritage of their country. Today only two percent of its land remains forested. With the lowland forests long gone, poverty is now forcing people up the steep mountain slopes to plant crops and cut wood for fuel. Wood cutting for charcoal production has become a major contributor to deforestation. About one-third of the land is now seriously eroded due to forest clearing. Since 1981 U.S.A.I.D. began a tree planting project to help stabilize the soil. However, the seven to nine million trees planted annually come no where near the estimated 45 to 60 million trees cut each year (Kurlansky 1988, Paryski et al. 1989).

BIOLOGICALLY DIVERSITY OF HAITI

Haiti was once one of the most biologically diverse countries in the West Indies. The island of Hispaniola contains many endemic plants and animals, some of which occur only in Haiti. About 36 percent of Haiti's plants are endemic, and the flora has about 5,000 species of known plants, including 300 species of orchids. Of the 28 species of terrestrial mammals that once lived in Haiti only two still survive, and both are threatened. Thus, 92 percent of Haiti's non-flying mammals have become extinct since the Pleistocene. Twenty species of birds are endemic to Hispaniola, and the Gray-crowned Palm Tanager occurs only in Haiti.

There are also many species of endemic reptiles, amphibians, fishes, and invertebrates. There is some hope for environmental protection. Two national parks have been established. Their public support depends upon providing badly needed tourist dollars and in protecting watershed. There is growing environmental awareness among the people and the government of Haiti to protect their natural resources.

Resource conservation must be linked to issues of sustainable development. If environmental conservation can take place on Columbus' island, the poorest of the New World countries, it can serve as a model for other developing island nations. Most of the countries of the Caribbean face the same environmental problems as are found on the nearby continental land masses.

Deforestation, soil erosion, air and water pollution, solid waste disposal, toxic pollutants, over-population, endangered species, extinctions, urbanization and development, and tourism impact affect the island of the Caribbean sea. They are all a legacy of the Columbus event. The beginnings of today's environmental change in America traces its origins back to 1492-93.

INTERPRETATIVE IMPLICATIONS

How is all of this applicable to U.S. national parks and other reserves? An interpretive program for any area could be developed based on the following outline.

Interpretive Implications: How the Biological Impacts of 1492 Relate to the National Park System. Topics:

- 1. General environmental changes
  - a. What was the condition of the ecosystem of the park (or surrounding region) at the time of European contact?
  - b. What is the condition today and what changes have taken place?
  - c. What impacts did the Native Americans have?
- 2. Status of native species
  - a. What species have become extinct that once occurred in the park or surrounding region? How?
  - b. What species are endemic to the park or surrounding region?
  - c. What species in the park or surrounding area are currently considered threatened or endangered?
  - d. What species have special resources management programs?
- 3. Alien species
  - a. What species of alien plants and animals inhabit the park?
  - b. What alien species have resources management programs?
- 4. Resources management
  - a. What are the major park resources management issues for current and future park natural resource protection?

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THE INTERNATIONAL TRADE IN PLANTS AND ANIMALS: SOME INTERPRETIVE THOUGHTS

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ABSTRACT: On a global basis, the greatest threat to wild animals and plants is habitat destruction. Not far behind are the increasing losses caused by the international trade in animals, plants, and their products. The plight of African and Asian elephants and rhinoceroses are increasingly being brought to the attention of the American public. Not nearly so well known by Americans is the loss of our own native wild animals and plants and their role in the business of international trade. Many species in demand, for pets or other uses, are found in the national parks. A concerted educational effort is needed to inform the American public of the implications of this international trade and its impact on native American species. The interpretive programs of the National Park Service offer great potential for public education. The use of confiscated wildlife products will be demonstrated.
KEYWORDS: Wildlife trade, poaching, alien species, interpretation/education

THE GREATEST THREAT TO WILD PLANTS AND ANIMALS IS THE DESTRUCTION OR LOSS OF HABITAT

On a global basis, the greatest threat to wild plants and animals is the destruction or loss of habitat. Not far behind are the losses caused by the international trade in animals, plants, and their products (Cunningham 1988). The international demand for exotic pets, house plants, and such luxury items as carved ivory, fur coats, turtle meat and shell, and reptile leather poses a major threat to many species.

The ready willingness of many people to buy live animals and plants, or their commercially processed parts, creates a continual economic demand (Durrell 1986). Collecting of animals and plants has become an important source of income, especially in third world developing countries. Prices for some species are so high, such as for parrots, that smuggling is a common practice (Grove 1981; Holden 1979, Iker 1979, Nichol 1987; Rosenfeld 1987, Wilkinson 1990).

We Americans take pride in our conservation laws and in our establishment of national parks, wildlife refuges, and state parks. Yet the United States is the world's major consumer of wildlife and wildlife products. Japan is the second major consumer and the number one importer of endangered species. The annual trade in wildlife and wildlife products in the United States is more than one billion dollars. In California alone, the estimated amount of trade in wildlife is over $60 million each year.

Though rhinos, elephants, and tropical parrots garner most of the public's attention in international wildlife trade, native United States' species have both national and international demand. The U.S. Fish and Wildlife Service estimates that hundreds of thousands of American reptiles and amphibians are collected each year and sold through the black market. Many of the animals are smuggled to Europe and Japan. Reptile collecting for the pet trade is a growing industry. Certain native species have become collector's items with established dollar values.

For example, specimens of the following are given with their estimated retail value: Indigo Snake *(Drymarchon corais)*—$200; Ridge-nosed Rattlesnake (*Crotalus willardi*)—$200-$300; Sonora Mountain King snake (*Lampropeltis pyromelana*)—$175-$250; Gila Monster (*Heloderma suspectum*)- -$250-$300; Chuckwalla (*Sauromalus obesus*)—$45-$65;

Alligator Snapping Turtle (*Macroclemys temminicki*)—$60; Eastern Box Turtle (*Terrapene carolina*)—$15; Desert Tortoise (*Gopherus agassizi*)—$100; Spotted Salamander (*Ambystoma maculatum*)—$7; Pacific Coast Salamander (*Dicamptodon ensatus*)—$18; Colorado River Toad (*Bufo alvarius*)—$20; Barking Tree Frog (*Hyla gratiosa*)—$15 (Frazer 1990, Rosenfeld 1987).

Perhaps between three to four million Red-eared Turtles (*Chrysemys scripta*) have been collected in the southeastern U.S. and exported annually. In 1977 an estimated one million dollars worth of live snakes, lizards, and tortoises were collected just in Arizona. In the late 1970s as many as 1,700 people collected and sold over 760,000 California amphibians and reptiles (Lipske 1980).

Of current concern is the increased poaching of the American Black Bear. Its gall bladder is in high demand in some Asian countries where it is dried and used in medicinal products for treating fever and arthritis. Bear gall bladders are sold in South Korea for well over $2000.

There is also demand for other bear parts in the black markets of Asia and North America. Hides sell for about $100; paws sell for $30; claws and teeth sell for $10 each. An estimated 1,200 black bears may be poached each year in California. Several U.S. national parks and other reserves have serious concerns over the future protection and welfare of their bear populations. The Southern Appalachian population of black bears is now highly threatened (Milstein 1989).

NATIVE PLANTS

Many species of native American plants are in demand on both the national and worldwide markets. American ginseng and pitcher plants are of special demand on the international market. Ginseng is exported to the Far East for its alleged medicinal value. About 50 tons of American ginseng are exported annually. The Appalachian states of West Virginia, Virginia, Kentucky, and Tennessee are major sources of ginseng (Campbell and Tarr 1980).

Pitcher plants are found primarily in the rapidly disappearing wetlands of the southeastern U.S. Perhaps hundreds of thousands of these plants have been dug up and exported to Europe where carnivorous plants are in great demand by collectors. Native American wild flowers are in increasing demand by gardeners. Many commercial dealers offer native wild flowers through nurseries, garden centers, and mail-order catalogs.

The vast majority of wild flowers sold through catalogs and by garden centers are collected from the wild. One of the species in greatest demand is the pink lady slipper. At the present time these orchids cannot be propagated in commercial quantity. In the 1970s one Michigan couple was known to have supplied dealers with about 100,000 of these orchids each year, all dug in the wild. Other popular wild flowers include snow trillium, jack-in-the-pulpit, Dutchman's breeches, crested iris, bloodroot, cardinal flower, Virginia bluebells, fairy candles, trout lilies, and birds-foot violet. Many wild flowers and other plants are also collected as edibles or as medicinals. The latter includes American ginseng, lady slipper orchids, may apple, wild leek, bloodroot, and coneflowers.

Cactus and other succulents make up the majority of the commercial plant trade. About twenty-five percent of the cactus species in the United States are considered rare. Illegal cactus dealing in Arizona alone is estimated at a million dollar business. Saguaro cacti, smuggled from Indian reservations and other public lands, are worth $20,000 or more. Cactus "rustling" has become a special resource protection concern in and near Big Bend National Park.

The Center for Plant Conservation considers that one of every ten species of the approximately 30,000 native plants in the United States is threatened with extinction. About 200 species of United States plants have already become extinct. More than ten percent of the endangered plant species in the continental U.S. occur in California.

ECOLOGICAL IMPLICATIONS

Besides the direct threat to species and populations of plants and animals through collecting and poaching, there are other significant ecological ramifications. A major concern would be the accidental or intentional release of alien plants and animals. Many of the world's current ecological problems, especially on oceanic islands, are due to the successful establishment of alien species. Guam and the Hawaiian Islands provide unfortunate classic examples.

South Florida is a major destination for the importation of animals destined for the pet trade. The herpetofauna of South Florida now contains twenty five species of successfully breeding reptiles and amphibians of foreign origin (Wilson and Porras 1983). Hawaii has eighteen species of introduced reptiles and amphibians and California has at least nine species.

The number of successfully established bird species in South Florida makes the area look and sound like a giant aviary. Another ramification of the pet trade is the spread of disease to other animals and to humans. Many bird species are capable of carrying and spreading ornithosis. Many mammal species are capable of transmitting rabies. Captive turtles are frequently infected with salmonella and cause salmonellosis in humans, which can be fatal.

What are the implications of the international trade in wild plants and animals for interpreters? It provides National Park Service interpreters with several opportunities for public education. The National Park Service is one of the few public agencies with a responsibility for both resource protection and the means for communicating the values of protection. Traditional methods of interpretation, such as guided walks, talks, and campfire programs all offer possibilities for presenting conservation messages on international trade issues.

Confiscated wildlife products, especially from animals of international origin, can be obtained for legitimate conservation education purposes from the U.S. Fish and Wildlife Service. An excellent teaching and resource aid is the "Wildlife Trade Education Kit" produced by the TRAFFIC (U.S.A.) branch of the World Wildlife Fund. The kit also contains an eighty slide audiovisual program (Hardie 1989).

RESOURCE EDUCTION

To carry out our role as resource educators and as resource protectors, park interpreters should be challenged by the following responsibilities.

1) Interpreters need to know what species of plants and animals occur in our parks. We need a better comprehension of the biotic composition of our parks-especially those species considered rare, threatened, or endangered.

2) Interpreters need closer cooperation and communication with park scientists, outside scientists, and park resources management specialists.

3) Interpreters must develop creative, factual, and honest interpretive programs about the international trade in wild plants and animals. Though of global concern, we need to emphasize how native American wildlife are threatened. We need to communicate that even national parks, wildlife refuges, national forests, and other federal and state public lands are not immune from the depredations of plant and animal collectors and poachers.

4) Interpreters need to have close cooperation and communication with commissioned park rangers and other law enforcement officers who have responsibility for protection of park wildlife.

5) Park staff need to develop local public and community support in curtailing collecting and poaching of wild plants and animals. Interpretation can, and should be, the primary means by which this local public support is developed and encouraged (Cunningham 1988).

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INTERPRETIVE PROGRAMS IN NATURAL HISTORY MUSEUMS AND NATURE RESERVES FOR PROMOTING ENVIRONMENTAL EDUCATION

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ABSTRACT: In the promotion of environmental education and creation of conservation awareness among the public, Natural History Museums and Nature Reserves can play a significant role. Environmental interpretation by museums would primarily be through exhibits that impart information on biological diversity and ecosystems, inter-relationships in nature, causes of environmental degradation, conservation of natural resources and action plans for environmental protection . Educational activities of museums aimed at enriching the school curriculum, production of educational resource material, outreach programmes such as nature camps, mobile museums, temporary and travelling exhibitions etc. can contribute to this mission. Nature must be considered as the best "teaching-learning laboratory" for environmental interpretation, for which Nature Reserves are eminently suitable. Appropriate infrastructure such as orientation centres, resource material and well structured interpretive programmes are necessary for the purpose. This paper provides a conceptual approach to enhancing the role of natural history museums and nature reserves in environmental interpretation.
KEYWORDS: environment, ecosystems, conservation, natural resources, museums, nature

ENVIRONMENTAL EDUCATION

The promotion of environmental education and the creation of conservation awareness among the public are assuming great importance all over the world today. This is because of the realization that sustainable development cannot be achieved if the natural resources of the earth are overexploited and impoverished. The fight to save the environment, however, cannot be won without enlightened public participation.

Formal education on Environment and related disciplines are provided in schools, colleges and universities. Nonformal media of interpretation and communication are required for the environmental message to reach out to the general public. Newspapers, radio and television, awareness campaign by government and voluntary organizations, environmental legislation and their implementation, special events such as the observation of the 'World Environment Day', 'Earth Day', 'Wildlife Week' etc. contribute a great deal to create public awareness on environmental issues. Yet, a closer analysis of the present day public perception on environment would reveal that much of this awareness is about what has gone wrong with the environment, often cynical and critical. Such awareness that does not lead to action has very little social relevance.

ACTION ORIENTED

How do we promote action oriented environmental awareness among the public? Most of the environment awareness campaigns lack appropriate interpretive techniques and methods needed for developing a proper perspective of the problem as well as the solution rather than propagating the signals of warming and prophecies of doom.

Concern for conservation can emanate only from a basic understanding of the issues involved, an appreciation, love and respect for nature, a fundamental knowledge about the interdependence of man and nature, an awareness about the consequences of environmental degradation and a realization of how one could contribute one's mite to successful environmental management. It is in creating such an action oriented environmental awareness that well conceived interpretive strategies have to be developed and implemented.

In fulfilling the above task Natural History Museums and Nature Reserves can play a very significant role. The purpose of this paper is to analyses the potential of these agencies in this respect and to suggest various action plans, mostly drawn from the Indian experience.

NATURAL HISTORY MUSEUMS

Traditional Museums of Natural History, all over the world, are primarily concerned with collection, documentation, study and display of natural history objects. Without detriment to these functions, these museums could reorient their objectives to make environmental education an important mission. Since Natural History Museums represent the world of nature it is an appropriate agency which could help us think about nature, discover the complex systems that are part of nature and factors that are responsible for their well being.

The National Museum of Natural History (NMNH) in New Delhi (India) was established in 1978 with the primary objective of promoting environmental education. Over the last 12 years, the museum developed exhibit galleries dealing with biological diversity, Ecology and Conservation and a large number of educational activities and interpretive programmes for different target groups of the society.

Some of the interpretive programmes are discussed below.

THE SCHOOL CURRICULUM

Realising the fact that the teaching of biology at the school level is mostly textbook oriented, with practically no recourse to teaching aids in the classroom and no exposure to real life situations in nature, the NMNH launched a programme of curriculum oriented school loan kits, worksheets, teacher orientation workshops and creative activities such as nature painting and animal modelling.

The preparation of interpretative resource material and development of programmes for the benefit of school children involve careful planning. Some of the planning strategies adopted by the NMNH for its curriculum oriented projects are as follows:

1. Analyse the text book and identify topics related to Environment and Conservation. wildlife.

• **Examples:** Food chains, inter-relationships, conservation of wildlife, soil erosion.

2. Identify individual concepts to be dealt with in each topic.

• **Examples:** Energy flow, Symbiosis, Endangered species, Water-cycle

3.Prepare interpretive material/ programme to illustrate each concept.

• **Examples:** Making Models/charts of food chains observed in the school campus.Food web game by students. Observing Museum specimens; illustrating Symbiosis. Examining specimens of threatened animals in the museum; making a soil erosion model.

4. Identify appropriate locations for study visits/nature observation

• **Examples:**Observing adaptation of animals and plants in a pond. Observing plants and animals in the school campus and understanding their survival needs. Visiting a degraded forest to observe soil profiles and impacts of deforestation.

5.Prepare Worksheets for children to use during field visits

• **Examples:** Checklist of plants and animals. Worksheets to fill in foodchains and food webs.

NATURE AS A LABORATORY.

Educators in natural history museums should realise that the museum is not an end in itself for nature education, but only a promotional agency. It cannot substitute nature, because there can be no better teaching/learning laboratory for nature education than nature itself.

NMNH has an ongoing programme of organising nature camps, study visits and nature tours for school children, college students and teachers at wildlife sanctuaries.

These are used for interpreting ecology, identifying plants and animals, learning about animal behaviour and emphasising the value of conservation. The groups are accompanied by resource persons from the museum and outside experts.

Interpretative material in the form of checklists, guide to understanding animals and their behaviour are specially prepared to meet the needs of different target groups.

ENVIRONMENTAL CONCERNS

Another problem in the creation of environmental awareness is the fact that most people have no idea as to how they could contribute to environmental conservation. With all the information that we bombard on people about deforestation, pollution, destruction of wildlife etc. many have developed a feeling of helplessness and a cynical and apathetic attitude towards the whole problem. We have to change such attitudes by relating environmental issues to our day to day lives.

Wise utilisation of natural resources, conservation of energy, conservation of water, recycling materials, cleaning and greening of one's surroundings, safeguarding water bodies from pollution, avoiding excessive noise etc. are matters in which every individual can contribute.

The direct linkage of these to environmental protection can be demonstrated through many examples; overuse or misuse of paper leading to deforestation, excessive consumption of energy leading to burning of more coal in thermal power Stations to produce more power leading to more pollution etc.

TARGET GROUPS

The NMNH devices suitable interpretative programmes for various target groups. These include films and audiovisual presentations at housing colonies, army units, schools and colleges; using traditional media of communication and interpretation such as puppetry and dance-drama; mobile museum exhibitions on relevant subjects sent to villages and rural areas; special programmes for handicapped children, sending small exhibitions to schools and villages, community centres etc.

PROGRAMME FOR TEENAGERS.

Every summer, the NMNH organises a monthlong programme called 'Exploring the Environment' for teenagers. This consists of intensive activities for interpreting the environment aimed at creating an awareness, appreciation and understanding of environmental issues by youngsters. The activities include identification of sources of pollution in an urban environment nature walks, individual project assignments, discussions, interaction with exhibits, quiz, declamation and creative activities, study visits to wildlife sanctuaries, audio-visual presentations and preparation of a nature magazine. The programme is evaluated by the educational staff of the NMNH.

PARTICIPATORY EXHIBITS

The museum's Discovery Room for children, Activity Room for pre-school children, the Bio-science Computer Room and a large number of participatory exhibits provide an opportunity for understanding and interpreting environmental concepts simplified at the level of children. 'Learning by doing' and 'learning can be fun' are the principles of these activities.

EXHIBITIONS AND FAIRS

Another nature interpretation activity is the organization of exhibitions and participation in Fairs. Exhibitions on environment related subjects are regularly organised at the Temporary Exhibition Hall of the museum and other strategic situations like the annual industrial Fairs in the capital and other cities and district centres, at the Indian Parliament and local constituencies of Members of Parliament to influence politicians and policy makers.

Interaction and collaboration with like minded institutions and organisations such as zoos, nature reserves, national parks, universities and voluntary organizations are found to be extremely useful in formulating and implementing nature interpretation and conservation awareness programmes by the National Museum of Natural History.

NATURE RESERVES

Nature reserves are conceived as undisturbed natural ecosystems for preserving genetic diversity and promoting nature conservation. Apart from their primary role of becoming reservoirs of genetic material and facilitating research relevant to the flora and fauna, they can also become ideal sites to promote environmental education. No doubt, people come to nature reserves more for enjoyment than for education.

The education that takes place, if any, is incidental, a by-product of the overall experience. But this by-product shOuld be our major concern in terms of environmental education in a nature reserve. How can we ensure that a visitor to the reserve goes back as a better informed and more enlightened person with regard to his understanding of wildlife and concern for conservation?

The answer to this question does not lie in providing an overdose of information and facts about wildlife to the visitors. The whole test of public education in non-formal, free-choice, learning of environments like nature reserves lies in enhancing public perception of natural phenomena and conservation ethics through logical, unobtrusive interpretational services ensuring visitor participation. Let us examine the basic infra-structure required to achieve this objective.

ORIENTATION CENTRE

A Visitor Orientation Centre should be the first public facility in a nature reserve. The purpose of the centre is to prepare the visitor for the right kind of experience in the reserve. It should provide all relevant information about the

GAIA PARK CONSERVATION EXHIBITS: STARTING AT THE PARKING LOT

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ABSTRACT: "Acting locally yet thinking globally". What does this mean to the field of interpretation and how do you translate this to action? There are powerful yet low cost exhibits currently hidden on the grounds of all interpretive facilities (centers, zoos, aquariums, arboreta, parks, museums). This paper discusses real examples of native plant restorations, recharge of aquifers, solar technologies, waste water treatment through natural systems on site, landscape furniture made from 100% recycled plastics, porous paving for storm water control and others.
KEYWORDS: Gaia, exhibits, Lovelock, global, park, parking lot, zoos, aquariums, arboreta, interpretive centers, nature centers, Monterey Bay Aquarium, plastics recycling, retention basins, water recharge systems, bank stabilization, bioengineering, wetland, biofiltration, nutrient film technique, solar panels, storm water, porous paving, native plants, restoration.

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WHAT IS GAIA?

In Ireland, the country of my childhood, there are only 24 acres of land left that have not been cleared or cultivated. But in America, where it has been said the first ecologists Native Americans lived, there are Giant Redwoods 3,500 years old, 300 feet high, over 20 feet in diameter and hundreds of tons in weight. These trees are analogous to Gaia, our earth. Because in reality, 99% of the mass of a redwood is dead, even though everyone would agree that it is alive. It is the same with Gaia—an alive global wide system. (Lovelock 1988).

Gaia, to summarize James Lovelock, is not some chunk of inert rock upon which plants and animals happen to live, but is instead one great circuit of life from its fiery core to its outer atmosphere. What the shell is to the snail; the rocks, air and ocean are to Gaia. For redwoods life is carried under the bark, a few cells thick in the cambium.

The bark, 6-8 inches deep, corky and fire resistant is what shields the cambium layer—the life. Take a uniform slice through the bark 2 inches wide, like a ribbon around the circumference to meet, and the tree will die in a few years. For Gaia, our carbon dioxide induced greenhouse effect could be the slice that kills 5 million years of humans or 3.6 billion years of life. How do we stop from taking the slice that kills our earth?

GAIA PARK

We teach so people can act. But how or where do we teach that life created conditions for more life, and that we are endangering all life including our own? We teach the lessons of life at a Gaia Park. Why exhibits starting at the parking lot? Because this is where most people enter, and the place to begin relating the local parts to the global whole.

In politics it is said, "everything is local". I believe in conservation, everything is local. However because of the threat of ecological disaster to our planet we can and have to think globally. Zoos, aquariums, interpretive centers, science museums and other interpretive facilities are taking tentative steps towards being the stage on which Gaia is modelled. No other resource is more dramatic and affecting to people than live animals and plants. A wealth of opportunities for reaching visitors are available. Examining reserve which a visitor might like to have. Two types of orientation may be required by a visitor:

•Physical orientation of the reserve with reference to where the visitor is, where to go, tour routes, traffic patterns, etc.

•Conceptual orientation such as the objectives of the reserve, the species of plants and animals found there, the ecological factors relevant to understanding their habits and habitats (such as food chains, predator-prey relationships, adaptations of plants and animals, etc.) and the importance of wildlife conservation. These can be imparted to the visitors through exhibits, audio-visual aids and various information leaflets.

Some suggestions regarding the interpretative facilities and services to be offered by an Orientation Centre are given below:

EXHIBITS

•A relief map of the reserve area showing the various zones, population- density o~ major species and tour tracks for visitors.

•A diorama depicting major fauna of the reserve such as tiger, leopard, etc. which visitors are not likely to come across during their visit.

•Exhibits showing mammals, birds, reptiles, amphibians and fishes (if any), which form the faunal population of the reserve.

•Exhibits showing invertebrate animals such as insects, molluscs, etc. found in the reserve.

•Exhibits of common trees, plants, flowers and other interesting botanical features and peculiarities of the reserve.

•Exhibits on food chains and food webs in the reserve. - Exhibits on animal and plant adaptations relevant to the species of the reserve.

•Exhibits on endangered species protected in the reserve.

•Exhibits dealing with conservation issues such as damage to wildlife, forests and ecosystems caused by man, the importance of conserving fragile ecosystems, etc.

•Exhibits dealing with the objectives, activities and conservation action plans.

The above exhibits at the Orientation Centre, properly designed and installed with relevant information contents, would serve as a useful pre-visit orientation for visitors. It would not only give them an idea and insight as to what to look for and what to assimilate while in the reserve, but also inculcate interest in identifying at least some of the species that they come across. The Orientation Centre would also serve as a post-visit resource centre, where visitors could come back and check and verify their observations (on identification of species, for example) with the exhibits.

INTERPRETIVE MATERIALS

One can think of several interpretive materials in the form of guide books, orientation map, information leaflets, checklists of species, picture post cards, etc., which will go a long way in assisting the visitors to take maximum advantage of their visit. One of the most essential requirements is a guide map showing the various areas of the reserve to be visited, major flora and fauna to be observed at each location and the tour tracks and trails recommended to be followed. A checklist of species along with an identification guide (with simple line drawing illustrations and major identification characteristics) would enable interested Visitors to identify animals and plants.

GUIDED TOURS

The best level of interaction with visitors can be provided at the reserve through guided tours conducted by an educator or a ranger. No resource material can substitute the personal interaction and interpretation that an enthusiastic, well-informed guide can provide to the visitors.

The guide can, depending on the response of the visitors, lead them to a better understanding of the ecology of the area and discuss the problems connected with conservation, thus sensitizing them to environmental concerns.

INTERPRETIVE SESSIONS

Interpretive sessions on natural phenomena like adaptations, feeding habits, parental care, wildlife populations, etc. conducted by educators in a reserve for small groups of visitors are yet another useful educational programme. Actual objects and specimens could be used by the educator in such sessions, making it an interactive discussion involving visitor participation.

The potential of nature reserves for environmental education is enormous. Appropriate strategies for using them as effective tools for environmental education must be developed. The Reserve should also build up institutional linkages with schools, colleges, museums, zoos and other relevant institutions for developing and scheduling educational programmes and interpretive projects

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VISITORS TO GAIA

Visitors coming to zoos expect lions, tigers, and elephant: the global representatives. However according to polls, a majority of visitors probably don't understand the maps of these animals' homes. We retain information that is important to our everyday lives, visitors may not feel that the information presented is of any value. If they are not provoked to emotional involvement with a habitat or animal, how can they care about the particulars of ecosystem destruction? Results of destruction far away can be abstract and produce quandary even for those who do know some world geography.

To be an ecologist is to study the "ecos" or house, literally to be a "good housekeeper". We all know the resources that come to and through our homes - food, products, plants, sun, rain, snow, cars and waste. These resources also flow through public institutions and are the medium to enable teaching of the credo "acting locally and thinking globally". The local relates to visitors everyday lives. The local gives access to understanding.

Zoos and aquariums specifically have garnished more and more favorable press recently. The praise for conservation breeding, habitat replication, and conservation education shows respect for the positive leadership taken by our institutions with their precious cargo, in the last decade.

To continue this praise and consequent support, new ideas, growth and reevaluation of current conservation messages must be ongoing. It has been demonstrated that habitat preservation leads to animal preservation. We also know that all zoos, aquariums, arboreta, and interpretive or nature centers worldwide cannot possibly warehouse all endangered species. Local conservation issues and exhibits must now be introduced to expand this role in conservation education nationwide and fill the mantle of Gaia Park.

UNDERSTANDING LOCAL ISSUES: UNDERSTANDING GLOBAL ISSUES

People come to zoos, aquariums, arboreta and interpretive facilities in huge numbers. Although many visitors are seeking recreation-quality, professional interpretation and celebration of place will increase enjoyment and visitorship. California has an excellent example of the power of interpreting what is in your own backyard. The Monterey Bay Aquarium interprets the Monterey Bay and in the process shows the link between the Bay and the Pacific and the oceans of the world.

I remember learning that humans are walking oceans, that the percentage of salt and minerals in our bodies equals that of seawater. Local gives access to the global. Suddenly the starfish in your hand connects you with the starfish in the tidal pool, into the Bay, into the Pacific and into other oceans where starfish live,.illuminating a chain of life. To become a Gaia Park we must relate our message to the everyday lives of people.

Polls show that Americans consistently place the environment as one of their top two issues of concern (Associated Press 1989). An institution that addresses issues globally and locally will be attended. Provocative exhibits on local issues related to global themes is a guaranteed avenue to greater understanding. This widening of the conservation support base is reflected in some zoos becoming both zoological and botanical gardens.

These slides are a survey of examples from institutions around the country. Many examples are modest because in many ways we have just begun. So Gaia goers, let's start at the parking lot.

SLIDE SYNOPSIS

PARKING LOTS AS DETENTION BASINS. This parking lot at Du Pont's World Headquarters has been designed to act as a retention basin for storm water, saving space and recharging the water table. Here is a solution that challenges that great engineering feat—the rectangular hole in the ground with gravel edges. The recharge scenario shown above, collects water from the roofs and parking lot and bleeds the stormwater into the ground. The standard runoff solution below, shows a retention basin in a cleared forest with a probable backed up stream.

The recharge system uses flexible/porous paving, shown in the foreground, to percolate the water down to the permeable liner. The pipes have collected water from the roofs. This system is ideal for urban areas short on space. In 1985 a 5" rainfall in 16 hours produced no flooding. With interpretation this hidden exhibit introduces a local conservation message of aquifer recharge as the visitor enters.

RECYCLED PLASTIC LANDSCAPE FURNITURE. These 100% recycled plastic curb stops are produced by the Hammer's Plastic Recycling Corp. of Iowa Falls, Iowa. This is the only company that manufactures with 100% recycled plastic. These curb stops are bolted to the ground with three fasteners. They have a seven year warranty. Less expensive and lighter than concrete they provide an excellent opportunity for interpretation and conservation message unity.

This is the color sorting process in the plant. 5 colors are available: black, grey, blue, yellow and brown. These are bails of plastic milk jugs collected from the Park Districts in Chicago. All plastics can be used except for styrofoam because of its melting point, and PVC because it corrodes the machinery. No other company is using such a complete spectrum of plastics or producing 100% recycled plastic products. The Chicago Parks Department currently has a program called POPS which has residents collecting plastic, dropping it off at city park collection stations which Hammer's turns into park furniture. Here is an example of a bench made of recycled plastics. This is a garbage receptacle.

BANK STABILIZATION WITHOUT CONCRETE. This is the stream at DuPont whose banks are being stabilized using willow wattles. This bioengineering solution is actually an ancient English method of bank stabilization. The willow cuttings are bundled and placed at specific intervals. This looks easy. However it requires the services of a Bio-engineer without whom there could be a disaster. Here's the wild, beautiful and stabilized bank. It looks and works a lot better than a concrete ditch or culvert because it slows down and absorbs the stormwater. Interpretation will offer this as an alternative face of progress.

ON-SITE WETLANDS. This is the Des Plaines River Wetland Demonstration Project and Wetlands Research Inc. offices north of Chicago. These ponds siphon much of the water from the Des Plaines River and act as stormwater runoff basins in situations where the previous solution for a parking lot is not appropriate. Native species of wetland plants cleanse the stormwater runoff of heavy metals, nitrogen, etc. by biofiltration. Unfortunately many people think of wetlands as rectangular holes with cattails, reed canary grass and shopping carts.

If there is to be a true deep concern for wetlands nationwide it lies with this beauty, and their interpretation. This is a wetlands retention basin solution available to zoos, aquariums, arboreta, etc. This pond and marsh exhibit at Woodland Park Zoo illustrates the beauty of these habitats when whole constellations of life systems are shown as they live in their home. These habitats were once found on the site of many of today's zoos, aquariums and interpretive centers.

ENVIRONMENTAL SIGNAGE. This is an example of interpretive signage at the High Desert Museum in Bend, Oregon. This concept showcasing is very important when it has been demonstrated that people remember only 3 to 5 concepts in any major outing! The title and text are written using interpretive principles (humor and provocative questions) to engage a visitors attention.

This is titled "Forest Invasion" provoking the visitor to look more closely at what appears to be just a bunchgrass meadow. This bird feeding station at the High Desert Museum involves people with one of the most popular outdoor activities in America. A sign at Woodland Park Zoo in the Cascades exhibit which protects with humor the plants in the exhibit. The cartoon shows a little flower with a large boot coming down on top of it, the flower says "Ouch!"

CLEANING WASTE WATER WITH MICROBES AND PLANTS. This is an Energy/Resource Recovery Treatment system that uses anaerobic microbes and hydric plants to transform raw sewage into clean water and methane. It was devised by Cornell University. First the sewage goes through microbe filled digestion tanks producing as a result saleable utility grade methane (and leaving no sludge).

During this process the microbes extract the anaerobic bacteria leaving nutrient rich water behind. Secondly, the nutrient film system grows nursery stock quality plants in this water. Gravity pulls the water through approximately 250 feet of channels which have hydric plants growing in them. There are two results: wash down quality recycled water and very healthy plants. This is a patented prototypical system. By the way, it doesn't smell.

NATIVE PLANTS. This tall prairie planting is on the edge of the parking lot at Brookfield Zoo. Here is another endangered habitat that benefits from the exposure of such a large cross section of people at zoos and aquariums. There are so few truly original things left for people to see. Many people are visually jaded and most reside in the modern urban landscape. A restored habitat in a left over space with a high concentration of species is a startlingly real visual experience. Here is the Brookfield Zoo prairie in the spring after a burn, all that is needed to maintain this habitat. This is a section of West Texas Desert plants found at the Abilene Zoo, an example of integrating native plant species.

This is a self guiding brochure to the Native Plant Gardens of British Columbian habitats at the British Columbia Provincial Museum in Victoria, Canada. This exhibit at Sonora Desert Museum illustrates the biomes encountered on a walk to the top of the nearby mountains. The visitor can see the lines of botanical demarcation in a 200 ft. walk.

This Butterfly Garden at Washington Park Zoo shows the direct link between food and habitat. A bio-control project at the Chicago Botanic Gardens uses predatory insects for pest control. This is another bio-control project at the Abilene Zoo, a Bull Snake is working on reducing the duck population by eating this egg.

SOLAR LIGHTING. These solar panels at the Kortwright Center for Conservation power the buildings and the streetlights and that same sun powers the planet on the right—Gaia, Earth, our home. For people to grasp this they must first see their own issues illustrated at the local level. Then they can look at this globe—the ecos, their home, and treasure it.

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FROM AWARENESS TO ACTION: LIFELONG ENVIRONMENTAL EDUCATION

Robyn Myers, Park Ranger
National Park Service

ABSTRACT: Lifelong environmental education education is presented in the context of an hourglass framework, the Global Awareness to Individual Action Planning Framework (GAIA), the Spaceship Earth (S. S. Earth), and from Awareness to Action.

LIFELONG EDUCATION

Both interpretation and environmental education have the purpose of moving people from Awareness to Action. Environmental education has been targeted at children, yet we know it is equally, if not more important that today's adults understand the Earth and its global issues. Environmental education is not just a way to study nature, it is a lifelong interdisciplinary examination of the environment in its totality—natural, man-made, cultural, historical—in a variety of diverse learning environments and situations.

Through this process a sensitivity and appreciation for the environment can be developed that moves people from Awareness, through Knowledge and Understanding, to Personal Valuing. Once a personal connection is made this becomes a motivation and purpose for Action.

This developmental process may take place indoors or out, in man-made or natural environments, with adults or children, and may be referred to as nature study, outdoor recreation, conservation education, or environmental education. The definitive difference among these being their primary purpose: In *nature study* are person looks at a tree and asks "What kind of a tree is this and how does it function? In outdoor recreation a person looks at the same tree and asks "How shall we play in it?" In *conservation education* a person looks at the tree and asks "How can we protect it?" While in *environmental education* a person will study the tree, play in it, experience it, and finally ask *"Trees have many uses some must be saved, others cut down what is best for this one?"*

PRIMARY GOAL

A primary goal has been to help students develop a concern that addresses the problems of our world today, select an objective to study, and even take steps toward solving some aspect of the problem being studied. As interpreters, we can better reach many adult audiences by using some of the methods and philosophies we have been using in environmental education for years.

By organizing our personal, and even non personal, services interpretation in the Awareness to Action model we are more likely to reach our adult audiences with the same success rate we have experienced in children's environmental education programs.

FROM AWARENESS TO ACTION

The Awareness to Action Model is simple and sequential:

AWARENESS: Identify a theme or major objectives to explore. Then begin experiencing the theme as directly as possible, including multi-sensory explorations, observing, discovery, and hands-on activities.

KNOWLEDGE: Begin cognitive learning of the theme, subject matter ormajor concepts. Details are presented through direct teaching, discussion, exploration activities, and communicating ideas.

UNDERSTANDING: The "aha" experience takes place here as connections are made, interrelationships are discovered, and comparing, organizing and relating processes are applied to the newly gained knowledge.

PERSONAL VALUES: Explore personal feelings, opinions, and beliefs as a group or individually, inferring new ideas, insights and connections. This is a chance to look at things in a new way.

ACTION: Now to begin applying the new knowledge and insights by identifying problems and decision makers, discussing options, looking at use and management. Encourage everyone to take positive action, even if it is simply to make others aware.

AWARENESS TO ACTION

When using the Awareness to Action model with children it follows a similar progression to and is compatible with Bloom's taxonomy, Guilford's model of the intellect, and Piaget's developmental theory. These important learning processes are summarized as sequential process descriptors in the California State Science Framework Addendum which are noted in the Model with italics. Use the Awareness to Action model sequentially when planning environmental education programs going only as far as the appropriate level of cognitive development.

For example children under the age of six may not go beyond Awareness and some basic Knowledge of the subject matter. As adults we repeat this developmental process each time we are introduced to something new. After we become aware of a new idea we begin to learn more about it,and begin to understand its relationship to other things and to ourselves.

The more we understand, the more we care. And when we care we are more inclined to get involved or take action. We are all familiar with the good materials available for children's environmental education programs Steve Van Matre's books, *Project Wild!,' Project Learning Tree, Sharing Nature with Children, Living Lightly in the City* the list goes on and on. Yet most interpreters are reluctant to use these activities with adults.

Most adult programs and walks are almost entirely auditory and visual with little or no **"hands on"** experience. Programs for adults tend to focus on just the Knowledge and Understanding,without building the foundation of Awareness, nor moving beyond into Personal Valuing or Action. With just a few carefully chosen activities, and a presentation sensitive to the dignities of the adult audience, adult groups can benefit from the same experiential activities we have used with kids for years.

Joseph Cornell's new book *Sharing the Joys of Nature* has helped fill this gap with activities designed for use with adults. Progressions similar to the Awareness to Action model can be found in many environmental education programs. The basic principles are nearly always the same. The challenge is to apply the Awareness to Action model when organizing and planning programs or media for adult audiences. How do we integrate the idea of **"think globally, act locally"** concept into the theme(s) at our site?

PLANNING PROGRAMS

Below are three Frameworks for planning programs in the Awareness to Action model. **"G.A.I.A."** is a framework for planning short 1/2 hour programs or walks. The **"Hourglass Framework for Organizing Field Experiences"** is for extended field programs or school groups. And "The Spaceship Earth is in Our Hands" is a flexible framework for planning anything from a single program to a day camp or classroom unit. As we become more aware of the state of the Earth's resources, our jobs as

interpreters become critically important. Our parks, museums, zoos and other interpretive areas have become centers for adult education. In the words of William O'Douglas:

> Once man understands his dependency on the living resources of the earth and is filled with wonder, he becomes dedicated to the task of conserving them.

If when organizing our programs we follow the simple Awareness to Action model, we are more likely to achieve our basic goal and mission of creating informed, decision making adults, who because they care, will take action to insure the Earth will be healthy for future generations.

G.A.I.A. GLOBAL AWARENESS TO INDIVIDUAL ACTION PLANNING FRAMEWORK

> "The modern scientific hypothesis that life itself controls the physical and chemical condition of the Earth's surface, the atmosphere and the oceans, to make and keep them fit for living, is called the GAIA hypothesis. This hypothesis has led to the development of a new systems science, which studies all the interrelations of the ecosphere. The name "GAIA" was chosen after the ancient Greek concept of Mother Earth, or GAIA as the deity was known."

[Lee Durrell, *The State of the Ark*, GAIA Books Limited, London, 1986, pg. 23.

We all believe in the concept of "think globally, act locally." But when planning a short program for adults or students it is challenging to try and tie their interests to both the park (or lesson) themes and current global issues. The

G.A.I.A. Planning Framework is a method for organizing short programs or lessons that look at local issues from a global perspective, while following the Awareness to Action model.

The first step is to familiarize yourself with global issues such as air quality, acid rain, conserving biological diversity, cutting of rain forests, depletion of the ozone layer or global warming. There are number of excellent books available such as *The State of Ark* by Lee Durrell, or GAIA *An Atlas of Planet Management*, General Editor Dr. Norman Myers both by GAIA books and published by Doubleday.

Next you must investigate how one or more of these issues affect your local resources or historically how man's choices or behavior have affected the resources or contributed to the global issues. Find tangible examples at your site. Discuss inventory, monitoring or other resource management projects being carried out in your area that might provide insight into these issues locally.

PLANNING YOUR PROGRAM:

Now that your homework is done, you can begin planning the flow of your program:

- **THEME**___________________
- **IDENTIFY GLOBAL ISSUE(S) TO EXPLORE**_______________
- **IDENTIFY LOCAL ISSUE(S) TO EXAMINE**___________________

•**AWARENESS BUILDING:** Introduce the group to GAIA, Mother Earth, and the concept of that everything in the ecosphere is interrelated. Describe the global issue briefly through discussion, media or other props. Introduce the local issue you will be exploring.

•**KNOWLEDGE:** Expand on local issue by providing details, showing examples and describing the the issue. Discuss the local areas involvement. Look at examples in the field.

•**UNDERSTANDING:** What affect does the global issue have on the local resource. Or how does (or will) the local resource respond to the affect? How many different elements of the total ecosystem are affected? Identify and explore various interrelationships.

•**PERSONAL VALUING:** Gain personal, hands on experience with the resource. Select an activity that will allow group or personal exploration of ones own feelings, beliefs and response.

•**ACTION:** As a group take part in some form of positive action: do a project,write letters, plan a personal way of expressing it. Write an "intended"action on slip of paper and then put it where you will see it later. As John Muir said:

> "We cannot forget anything. Memories may escape the action of will, may sleep a long time, but when stirred by the right influence ... they flash into full stature and life with everything in place. *A Thousand Mile Walk*

HOURGLASS FRAMEWORK

With the excellent environmental education materials available today it is a challenge to organize these ideas and activities into an effective field experience. This framework provides a format for planning and organizing your ideas and activities in a focused sequence that will create learning experiences that will teach the concepts, while moving the participants from Awareness to Action.

1. DEFINE YOUR THEME AND GOALS: What is your purpose in planning this experience? What is the environmental issue or theme? If it part of a larger unit with its own goal, another more specific goal is needed to clearly identify the purpose of the field experience.

2. IDENTIFY STRUCTURAL LIMITATIONS: What time limit is there for the field experience? An hour, a day? The amount of time available will dictate a number of other variables. Are there other limitations you must work around such as travel times, lunch, a guided tour, visiting hours, etc... When these limitations are identified the rest of the experience can be planned.

3. CHOOSE GENERAL LOCATIONS: You need to identify both where you are going and in what sequence, as well as where you plan to conduct specific activities. Decide what order, and time the sites will be visited and what you generally plan to do there.

4. SELECT APPROPRIATE ACTIVITIES: Choose a variety of activities (from your favorite sources) that illustrate the Awareness to Action concepts corresponding to your major goal for the day. Have a purpose for every activity selected. Always over plan the number of activities, and plan on being ***FLEXIBLE*** enjoying those unexpected "teachable moments."

5. PLAN IN THE HOURGLASS FORMAT: This is the structural framework of the field experience. It begins **broad**—building awareness of a global idea or main theme—then **focuses** on knowledge and understanding of a few specific concepts, and finally ties everything together with a **broad** idea that personalizes the experience and motivates action. Gear the activities to the time of day, location and place in the framework sequence. Plan your times ***generally***, in sequence rather than by hours.

If you run out of time eliminate activities in the middle to accommodate the closing Action'Activity . The flexibility of the leader to adapt the flow of the day to the unexpected, while still maintaining the overall objective for the day is the key to a successful experience.

HOURGLASS FRAMEWORK

Introduction: To the plan for the day (lunch, safety, etc.) and the theme or overall goal. You want to plan a warmup to bring the group together. ***AWARENESS*** **ACTIVITY:** A quiet and multisensory activity to build sensitivity to your theme. •***Transition:*** Broad idea growing more specific—A discussion leading into the more specific concepts to be studied in the exploration activities. **EXPLORATION ACTIVITIES:** Select a series of cognitive learning activities that will explore your theme. Alternate the emphasis between ***KNOWLEDGE*** and ***UNDER-STANDING*** . Plan to regroup for a transition discussion between each activity. ***VALUING*** **ACTIVITY:** An activity that explores personal beliefs, feelings and opinions.
Transition: From your specific explorations to broad idea. **ACTION ACTIVITY:** An activity that encourages or actually takes action. ***Conclusion:*** Tie together day's experiences & major theme with an activity, a sharing circle or a thought.

SPACESHIP EARTH (S.S. EARTH) IS IN OUR HANDS FRAMEWORK

The Spaceship Earth interpretive framework is designed in the form of eight questions for use by both educators and park interpreters. The purpose is to use the questions to generate ideas and discuss global issues from the point of view that the Earth is really a sort of Spaceship, the only planet we know that supports life. Through the framework, an educator can introduce the regular course of study in natural history & science, social science and cultural history, while a park interpreter can interpret their parks' natural & cultural history themes.

The questions are to be a source of exploration, an overall idea to focus on at first, and then keep in mind while experiencing a variety of lessons or activity experiences based on that question. The framework questions are designed in an "hourglass" format and follow the Awareness to Action model.

The first two questions are broad in nature, then narrow the focus of study with the middle four questions, and broaden out again in the last two questions for a holistic look at Earth's systems and our responsibilities to them. The framework was designed for eight full day field studies, it is highly versatile and is designed to be adapted to any environment, time scale or specific topic.

Each question builds on the previous one, and they are intended to be done in sequence. All eight questions could also be used as an outline for a single experience,conducting a lesson or activity on each of the eight questions. Throughout the study, think about the question, and how what it being studied fits into the "***big picture:***" that the future of the Earth is truly our responsibility.

1.How well do we understand ourselves, the local area and the World around us? **TOPICS:** Introductions, orientation to environment, social cooperation, problem solving, the senses, pictures of Earth from space, discussion of Earth systems— **AWARENESS.**

•***How is the Earth like a Spaceship?***
TOPICS: Ecosystem study, habitats, biomes, ecology, discussion on components of spaceships, compare NASA ships (Gemini, Apollo, Shuttle, Space Station), identify similarities—**AWARENESS.**

•***How has S.S. Earth developed and changed through history?*** **TOPICS:** Natural and cultural history, social awareness, native Americans, geography, geologic time, museum study, historical records, plate tectonics, influence of man—**KNOWLEDGE.** *5.What is S.S. Earth made of?*Geology, geography, volcanics, soils, periodic table of elements, natural and man made things— **KNOWLEDGE** What kinds of things live on S.S. Earth? **TOPICS:** Classification, animals, plants, fungi, protists, bacteria/algae, wildlife vs. domestic, man, interrelationships, web-of-life, habitat, niche —**KNOWLEDGE** *6.What keeps S.S. Earth running?* **TOPICS:** Life cycles, water cycle, weather, physics, chemistry, astronomy, non-living cycles, plate tectonics, recycling, fuel sources, man made systems, electricity—**UNDERSTANDING**
7.What may happen in the future to S.S. Earth? **TOPICS:** Current issues, pollution, population, endangered species, introduced species, acid rain, waste disposal, recycling, world politics, civil rights, conflict resolution, hope —**VALUES** *8.What can we do here and now to take care of S.S. Earth?* **TOPICS:** Closure to study, personal applications, choose a problem to support, explore alternatives to support issues and educate others, write letters, brain storm and discuss ideas, creative problem solving— **ACTION**

PRACTICING WHAT YOU PREACH: DEVELOPING A RECYCLING PROGRAM AT YOUR SITE

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ABSTRACT: Conservation is a tough concept to teach, but your site can help teach it by setting a good example through developing a recycling program. The steps to develop a program include identifying your recycling goals and materials, finding a vendor to recycle your materials, purchasing and placing bins in appropriate areas, arranging for employee involvement and recycling training, and designing a pick-up schedule. The process took the San Diego Wild Animal Park one year to complete, but it has been well worth it. The first month alone 17,000 pounds of garbage was recycled and we have received glowing reviews from our visitors and the community!
KEY WORDS: recycling, conservation.

CONSERVATION: BIG WORD, BIG ISSUE

Conservation: Big word, big issue. In a recent program evaluation at the San Diego Zoo only 20 percent of those questioned could correctly answer questions on conservation. Many individuals still don't understand what conservation is and why it's important. Here's one of my recent experiences: at a baby shower for a close friend I noticed that all of the bottles, cans, and wrapping paper ended up in the trash can. I went through the garbage and placed all these items in bags to take home with me to recycle. Two of my friends commented as I was leaving, "Look at Deb, she's so thrifty."

How many of your visitors could define what conservation is and state ways they could make a difference? With such a large, complex concept, how do we as educators teach it effectively? What kinds of programs, exhibits, and actions are most likely to alter conservation attitudes and influence conservation behavior in visitors?

SETTING A GOOD EXAMPLE

Setting a good example is the first step in teaching your visitors what conservation is. See how good of an example you, your site, and your fellow employees set for your visitors by answering the following questions about your site: Does your site have a place for visitors to recycle aluminum cans and for students to recycle the paper scraps from their art projects? Does your office staff recycle newspaper, white paper, cardboard, and computer paper? Do employees wash down the sidewalks and parking lot with water every morning? Do you use Styrofoam cups for coffee in your office or for students during classes?

CONSERVATION

Has your site planted native or drought-resistant plants around your building and do they use drip irrigation and mulch? Do you use both sides of the paper when you photocopy? Is your letterhead on recycled paper and do you use recycled paper for all of your photocopying needs? Do staff members take garden trimmings from your institution and compost them or separate them out for composting at the landfill site? In the last two months I have visited one national park, two state parks, and two county parks—none of them had any provisions for recycling my cans or paper.

Think about these statistics. The United States makes up six percent of the world's population, yet we use forty-five percent of the world's resources.

- Recycling one bottle saves enough energy to run a 100 watt light bulb for four hours. Each household uses nearly 1,000 bottles a year.

- Recycling a four-foot stack of newspaper saves a 35-foot tree.
- You will save five trees each year if you recycle a newspaper every day.
- Recycling half the paper used in the world today would meet almost 75 percent of the demand for new paper and would save 20 million acres of trees.
- Every three months, the U.S. throws away enough aluminum to rebuild our entire commercial air fleet.
- It takes four tons of bauxite to make one ton of aluminum and only a little over one ton of recycled cans to make one ton of aluminum.
- Over a billion trees are used to make disposable diapers every year. These diapers now make up two percent of all the garbage generated in the U.S.

One of the best ways you can help develop a conservation ethic in your guests is to set a good example—start a recycling program on your grounds! Conservation examples such as these always speak louder than words.

A RECYCLING PROGRAM

It took me exactly one year, lots of planning, and teamwork to get a comprehensive recycling program started at the San Diego Wild Animal Park. It's been well worth the effort. In the first month alone, the Park recycled 17,000 pounds of materials.

The **first step** is to get together a group of employees interested in recycling. Make sure key staff members that will be involved in processing materials are present. You must get them to buy into the program that's developed. At your first meeting, brainstorm what your recycling goals are and what items could be recycled at your site.

Our team's goals were to recycle 50 percent of the garbage at the Park; provide areas where the visitors, employees, and the general public could recycle; and be a prototype program for other businesses to emulate. After you have decided what your goals are, assign individuals to find out approximately how much of each material is disposed of each month.

CONTACT LOCAL AGENCIES

The **second step** is to contact local waste disposal agencies to see if they handle recyclable materials. If not, they can usually refer you to companies that do. This is the time when it's important to know the volume of materials you produce. Some companies will not deal with agencies that don't produce tons of materials.

When I first started investigating vendors, I found one for glass and aluminum cans, one for paper, and one for cardboard—I really didn't want to deal with three different companies because it meant many different plans and too much coordination time.

It took some searching, but I finally found a company, Oceanside Disposal/ Waste Management of North America, that would handle glass, aluminum cans, white paper, computer paper, mixed paper, and cardboard, as well as tin cans, copper wire, and all plastic beverage containers.

Once you have picked a company that can meet your needs, have them work with you to develop a recycling plan that will fulfill your goals. You will have to answer questions such as what type of bins you will purchase, where the bins will be placed, and who will be responsible for emptying the bins and arranging for pick-ups. Oceanside Disposal worked very closely with me to develop the following three-part recycling program.

PROGRAM I—VISITOR RECYCLING

A Park grounds recycling program was established for the recovery of aluminum cans, glass, and park maps. There are 36 recycling stations established throughout the Park grounds. Each station is comprised of a 32-gallon aluminum can container or two 32-gallon containers—one for glass and one for aluminum. One container is placed at the exit for Park map recycling. Building and Grounds staff empty these containers into three-yard bins in a back staging area.

PROGRAM II—EMPLOYEE RECYCLING

We established an office paper recovery program for computer printout (CPO), white ledger, mixed paper, and cardboard. Every employee with a desk was issued a four-gallon recycling container that looks much like a regular trash can, but it's white and has a paper-only recycling sticker.

Employees sort white from mixed paper (only the white paper has commercial value). When their container is full they sort it into centrally located 25-gallon white and CPO and mixed paper containers. The Park doesn't produce enough CPO to recycle it in a separate bin.

Buildings and Grounds employees pick up the 25-gallon containers and the cardboard boxes that are broken down. Three-yard bins in a back staging area are designated for paper, aluminum and tin cans, and glass. The Buildings and Grounds employees empty the 25-gallon paper containers into the three-yard bins. A concrete pad was necessary to keep the bins from sinking into the asphalt. The cardboard boxes they collect are placed in a 40-yard roll-off bin.

PROGRAM III—PUBLIC RECYCLING

A public recycling drop-off station was established at the service entrance of the Park grounds. Community members are able to drop off aluminum and tin cans, all plastic beverage containers, glass, and newspaper into three-yard bins. An area was paved with concrete for the bins, paved with asphalt for parking, and surrounded by a fence to prevent vandalism and dumping. The area is open from 6 a.m. to 6 p.m. so individuals can recycle to and from work. Oceanside Disposal services these containers as well as the cardboard container and the three-yard bins in the back area.

MANAGEMENT'S CONCERNS

Members of management were very concerned about the appearance of the bins and wanted to make sure they fit the Park's decor. Brown 32-gallon Rubbermaid trash cans were chosen to be placed inside the Park—the same style as the garbage cans used. Two recycling stickers were placed on the bin—one on the flap and one on the middle of the can. The three-yard bins and large cardboard container were transformed from dark maroon to white with green stripes. Both organizations' logos and the accepted materials were painted on the front. Oceanside Disposal very graciously donated all the bins used in the program. As the program has grown, they have provided additional containers at no cost.

Oceanside Disposal prepared a written program proposal and presented it to the management team at the Park. Once it was approved a contract was prepared and pick-up rates were determined (we are charged $125 flat fee for pick-up.) Our final cost to pave and fence the public drop-off area and pave the back area was $10,000 (concrete and asphalt aren't cheap!).

RECYCLING PROGRAM

Once all the bins are purchased and in place and the areas are properly paved, your employees have to be oriented on how to properly recycle items. We scheduled four orientation dates and used rolls, coffee, and juice to entice participation. Participants learned the following recycling tips.

WHITE PAPER

White paper can be recycled in the white paper bin if it's not glossy. If an item has been printed on white paper with colored ink, it's considered white paper. Cellophane windows must be removed from envelopes and all plastic outer wrapping must be removed.

Examples:

- Bond Paper
- Tab and Index Cards
- Calculator Tape
- Tablet Sheets (without binding)
- Carbonless Computer Paper
- Typing Paper
- Carbonless Office Forms
- Xerox Machine Paper
- Letterhead and Stationery
- Envelopes

MIXED PAPER

All colored paper, brown envelopes, recycled paper, paper with built-in carbon, gummed labels, glossy paper, magazines, fax paper, post-it notes, dry brown paper towels, and any other paper that isn't classified as cardboard or newspaper can be placed in the mixed paper bin.

CARDBOARD

All cardboard boxes and animal feed bags should be placed in the cardboard container. Cereal, soap, and all other boxes should be placed with cardboard. Brown paper grocery bags should also be placed with cardboard.

CANS

Aluminum cans, tin cans, and aluminum foil many be recycled in the employee can container.

PLASTIC

PET plastic (liter plastic bottles that soda comes in), plastic milk containers, and all beverage containers can be recycled. Plastic ketchup, margarine, detergent bottles, etc. CAN'T be recycled. Buy all items in glass and paper wrapping—this is called prerecycling. AVOID PLASTIC AT ALL COSTS! Remove the caps on all containers.

NEWSPAPER

Please put all of your newspaper in the public drop-off newspaper bin. Newspaper can be put in with mixed paper but we don't receive money for it. We do generate revenue from the newspaper bins.

GLASS

All glass can be recycled. If you bring glass from home, make sure you rinse it and remove the cap. You don't have to remove the labels.

ITEMS THAT CAN'T BE RECYCLED!

Plastic, carbon paper, padded envelopes (reuse them), and gummed label backs can't be recycled! If an envelope is lined with plastic, that lining must be removed before the envelope is recycled. Boxes and milk cartons with a waxy coating CAN'T be recycled.

PROGRAM KICK-OFF

We had a kick-off to our recycling program by staging an opening ceremony at our public recycling drop-off area. We sent out a press release and had two newspapers and three television stations cover the story. Carol the Elephant recycled the first can and plastic beverage bottle and Captain Recycle, Oceanside Disposal's mascot, was also present. All the employees involved in making the program happen were invited and everyone was treated to lunch.

RECYCLING CHALLENGES

Be prepared for a lot of contamination of your bins the first few months. It takes a while for employees to sort out what is white paper and what is mixed paper. One of the biggest challenges was the in-Park bins. From the outset, individuals put every known piece of garbage in the cans, from french fries to disposable diapers. We ended up fastening the flaps with screws and a hole was sawed the size of cans and bottles at the top.

Other interesting types of contamination occur. My recycling contact called me one day and said there was contamination in the cardboard bin they had never seen before. It took them a while to figure that it was ***elephant dung.*** Other challenges have included an improper design of the cardboard bin. It was designed to walk into and stack the flattened boxes inside and had no top-loading capability. When the bin was half full the cardboard would start avalanching outside the bin.

We replaced these bins with those that can be both front and top loaded. Another problem is that individuals save paper and cans in plastic bags and dump the contents and the plastic bag into the bins causing contamination.

We have had theft of cans from the can container. We modified the can bin in the public drop-off area and added a lock to prevent future theft. Another challenge is arranging for pick ups. You want to make sure as many bins as possible can be picked up at one time to avoid large monthly pick-up fees. Extra newspaper and glass bins were added so that all of the three-yards bins at the Park could be emptied at one time at both the back staging and public drop-off areas.

We paid the recycling company $230 the first month of operation (April 1990) and only $35 the second month of operation. We saved money because our trash compactor is now only picked up twice a month instead of four times a month (at a cost of $185 for each pick-up). Thus the first month we saved $140 and the second month we saved $335. During the summer months we look forward to making a profit from the recycling itself.

CONCLUSION

The success of conservation depends on a revision of the way we use the world's resources. Part of our job as interpreters is to be good conservation role models and to help people make conservation an everyday part of their lives—we need to assist them in making recycling and other conservation related activities automatic.. Norman Myers, a leader in the field of conservation, reminds us that "we are a privileged generation, that we, alone of all generations in human history, are given the chance to save...life on Earth" As interpreters, we have the chance to save life on Earth, and can influence those who will be the keepers of the flame after we are gone.

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WE *CAN* MAKE A DIFFERENCE!

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ABSTRACT: An educational aluminum can recycling program was developed to encourage El Capitan and Refugio State Beach visitors to recycle both in the parks and at home. The program, designed to be easily maintained, consists of an educational brochure, a central drop off site at each State Beach, and bumper stickers that serve as an incentive for participation in the program. During the first year of the program, approximately 1,500 people participated, recycling over 14,650 aluminum cans.
KEYWORDS: recycling, aluminum cans, educational program

INTRODUCTION

As landfills fill with our wastes and resources needed to create these wastes are depleted, open space and natural resources become more and more valuable. What better place to start to educate the public about the increasing importance of recycling and conserving than to begin in the very parks they enjoy most, areas that may ultimately be threatened by their current throw away life style?

The El Capitan and Refugio State Beaches Educational Recycling Program was designed to educate the park visitor on the importance of recycling in our parks and at home in protecting our resources, our parks and our environment. The program was also designed to be managed and maintained with a minimum amount of time, money and effort in these very busy summer parks.

THE EL CAPITAN AND REFUGIO STATE BEACHES EDUCATIONAL RECYCLING PROGRAM

Each park visitor receives a recycling brochure as they enter the park. They save their aluminum cans during their stay and deposit them at a designated area. For each 25 cans (or a 50¢ donation), the park visitor receives a "Recycle Here Recycle At Home" bumper sticker.

Interpretive programs designed specifically to educate the public about recycling also encourage the park visitor to participate in this program.

Periodic program evaluations reviewed and corrected program effectiveness, visitor participation, procedural problems and mechanical problems. In addition, the program was evaluated at the end of one year.

ONE YEAR EVALUATION

COSTS. Money: Stickers (1000) $313.09
Brochures (1500) 257.58
Trash Containers/Lids $80.17
Misc. Supplies: $42.55
TOTAL: $693.39

Time: Program development (research, proposal, brochure and logo design, etc.) approximately 40 hours Maintenance (purchase supplies, transport cans to storage and recycling center, clean recycling containers, etc.) approximately 6 to 10 hours/week

RETURNS. Cans 14,650
Energy saved: 4,453 Kilowatt hours
Revenue: $293.90
Participating Visitors: approximately 1500

HELPFUL HINTS FOR STARTING YOUR OWN EDUCATIONAL RECYCLING PROGRAM

1. *Research, research, research.* We researched recycling and other recycling programs. We talked to our local environmental center. We determined who our audience was and tried to figure out how best to educate and motivate them. We talked to staff and management to get their ideas and input.

Then we brainstormed, and keeping the program as simple, manageable and environmental as possible, we kept the best ideas for our program. This was probably the most valuable phase of developing a successful program. It's worth the time and effort.

2. *Don't Start Too Big.* It's better to start small and expand than to start too big and fail. This was the best advise we got during our research phase.

Our program had to be simple. Summer is our busiest time and campground management, patrols, interpretive programs and paperwork left us very little time to do much else. Keeping in mind that our program goal was educational, we designed a program that would reach a maximum number of people and maintain the program with a minimum number of hours.

Educational brochures were designed to be informative and motivational. 30 gallon plastic trash cans were used because they are durable and easily cleaned. Plastic liners (recycled bags are preferable) aided in transport and two central locations meant easy drop off for campers and efficient pick up for rangers.

3. *Solicit Support from Management and Staff.*. Get staff and management support *before* the program begins. Saying its a good idea is easy. Doing the actual work is another thing. If possible, try to get a commitment for each aspect of the program and let them know they are an important part of the program's success.

4. *Incentives May Not Be Necessary.* We began the program thinking we would need an incentive, in our case the recycling stickers, to get park visitors to participate. What we found out was that park visitors were more than willing to participate in the program just because they were helping the environment and because it was easy for them to recycle. Incentives may not be necessary and, because they cost money, may not be desirable.

5. *Don't Lose Sight of Your Program Goals.* Our program goals included educating the park visitor about recycling, showing them that it can be easy, fun and even profitable both to themselves and the environment, and keeping the program manageable. Program evaluation, formal or informal, will help you keep your program moving towards reaching your own goals for your program.

CONCLUSION

Our program has been very successful and eminent expansion is in sight. This simple educational recycling program has reached thousands of park visitors who have discovered they **CAN** make a difference in protecting our parks and our environment .....and do.

PRACTICING WHAT WE PREACH: ARE WE *REALLY* PRACTICING WHAT WE PREACH?

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ABSTRACT: Too often environmental educators have emphasized theory and large conservation principles while ignoring the importance of our own small actions—have decried ozone depletion while sipping from Styrofoam cups—and our resulting environmental successes have been limited. To meet the future, we environmental educators must recognize our own daily contributions to larger environmental problems, and encourage our organizations and visitors to do the same. Reducing one's own environmental impact is an easy, compelling lifetime strategy.
KEYWORDS: environmental education, environmental impact, recycling, waste reduction

INTRODUCTION

A national tree preservation group mails its voluminous literature on virgin paper. A major university holds a forum on rain forest destruction in a building recently remodeled in teak and mahogany. A state-run nature center has prominent recycling bins on its front porch, but serves deserts in foil cups in the cafeteria out back—with no provisions for recycling them. These institutions deliver powerful messages:

• 1) the environmental problems we face have nothing at all to do with our everyday lives, and

• 2) short-term cost-effectiveness takes precedence over long-term conservation goals.

The people who receive these messages will perhaps support conservation legislation, but are unlikely to make any individual changes unless that legislation forces them to. Until then, it will be "business as usual", for them as for the institutions that seek to educate them.

Like it or not, we interpreters, and the institutions we represent, are all ongoing advertisements. We send messages on several levels, every time we interact with the public. Our messages don't end with the words we write or say. They continue through the physical facilities we provide for visitors. Sometimes the message we deliver through our actions and facilities is diametrically opposed to our "official" message. Which message is the stronger? Many educators would say that modelling provides a stronger message than mouthing. If that's the case, some of what the public takes home may not be what we wanted them to hear.

A BROAD APPROACH

We environmental interpreters have introduced the public to and encouraged their support for a wide range of general conservation and environmental protection principles. Our focus was on the "big picture"—protection through legislation and group ventures. Although a broad approach was and still is necessary, it falls short. While "We the People" protected ducks with hunting limits to ensure healthy populations, for example, we the individuals eliminated large numbers of wetland areas all across the continent. "We the People" banned DDT, but used increasing amounts of other chemicals on our individual lawns. In these and many, many other cases, our intentions were good, but our private actions ran counter to our public goals.

Our personal environmental slip-ups are insignificant; collectively, they are at the root of all our environmental problems. One of our functions, in interpreting environmental problems of the public, is to encourage individual behavioral changes that are consistent with larger conservation goals. Changing the laws is helpful; changing the consumer is essential. As environmental spokesmen, we can have a substantial role in encouraging our visitors to look for problems and solutions within their own lives. To do so effectively, we must stop modelling environmentally damaging behavior for them, and begin to practice what we preach.

"TO URGE WITH EARNESTNESS."

To *preach* means "to urge with earnestness." Those of us who love the natural world certainly try to impress our audience with its beauty and value, and we speak from the heart. But to *practice* means "to do or perform frequently, customarily, or habitually." It's the critical other half of our earnest message. I have to wonder how effective a discourse on the solid waste problem is, when the speaker joins the audience for a Styrofoam cup of coffee afterwards. On the other hand, what a potent reinforcing message is delivered when the speaker casually fills his or her personal mug! How much more potent when an institution has provided reusable cups for all!

The issue of personal responsibility became real to me and my family about 2 years age, when we realized that recycling and smaller cars would not be enough to save the world as we know it. We began examining every aspect of our lives, looking for more "earth friendly" alternatives. We were in for three major surprises: first, how much our ostensibly "environment" lifestyle could be improved, second, how painlessly it could be improved, and third, who positive most others were about our effects.

Our institutions can be equally persuasive by modelling an environment ethic. Here are some ways in which your organization can practice good conservation:

Recycling. Make full use of your area's recycling programs. Provide appealing, clearly marked containers for your public and staff. Use recycled paper to whatever extent you can afford, and make it a point to be able to afford at least some.

Waste reduction. Stop using disposables, even at the inner office coffee urn. Provide an area for staff to store mugs, napkins, plates, perhaps where visitors can see them. Make your printed matter count: be succinct, and use both sides.

Resource use. Include an "environmental impact study" in your plans for renovations. (What is the most efficient toilet? Where do those teak benches come from?) and expansion (Can we save space with a small car section in the parking lot? Does the floor plan make the most of space and lighting?) Serve foods that are low on the food chain, in reusable (or at least recyclable) containers. Avoid products that require long distance shipping.

Visitor materials. Weave environmental messages through your handouts, exhibits, and talks. (Don't put on a maple syrup festival without mentioning maple decline, for instance.) Do a "green audit" of you gift shop, Do it's contents meet your environmental standards? How about the packaging?

Policies. Put you revised goals in writing, to remind you where you're headed, and why. Above all, make your changes *visible*. Let the public—and the staff—know what you're doing, and why. Small, one-sentence signs can say a lot. You might put them by the cafeteria line, light switch, gift shop check-out, coffee pot, copy machine, even in the bathroom.

CHANGE

Changing your institution will take time. You can change your own workplace behaviors today, however. Use your own mug, whether or not disposables are available. Drive a small car to work. Pack a low-on-the-food chain lunch, in reusable containers. *Talk* about your personal changes, with the staff and visitors alike. Let them know that the changes have been just that: changes, not sacrifices. For the most part, leading a "greener" life is not harder, just different.

According to a recent poll, 76% of Americans consider themselves to be environmentalist. That alone is an incredible advance. Not too many years ago, environmentalist were considered a fringe element. The turnaround in attitude is a vital step toward meeting the issues before us. We have a public that is primed to change, but either doesn't see what to change, doesn't know how to change, or is afraid to change. By practicing what we preach, we facilitate change in others. We are already role models in our professions; let's be sure our actions model our words. To paraphrase Alan Gussow of Friends of the Earth, "Talking is not acting. Acting is acting."

With all of the negative press about our environment, one can really get depressed. There is a tendency to block out the flood of scary information and retreat into our own "secure" private world. But the flip side is the realization that if individuals brought about the problem in the first place, individuals can have a real impact in dealing with the environmental crisis. *Each of us* can make a difference. Now that's a real upper! Let's not just talk. Let's act

INTERPRETATION OF SOLID WASTES: GETTING YOUR MESSAGE INTO THE SCHOOLS

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ABSTRACT: As the environmental movement returns to front page news in the United States, more and more attention is being given to how Americans recycle, reduce, and reuse their solid wastes. Facing similar disposal problems as the east coast, California has recently enacted legislation requiring communities to reduce their solid wastes by 25% by 1995, and 50% by the year 2000. Included in this legislation is the requirement for solid waste education in the schools. This paper focuses on applying marketing and interpretive techniques in curriculum design to change attitudes and behavior in the consumption and disposal of solid wastes.
KEYWORDS: environmental education, solid wastes, recycling, curriculum design, marketing.

INTRODUCTION

Every day, in school classrooms across the country, teachers and curriculum coordinators are faced with an onslaught of materials which organizations and agencies would like taught in the school. Drug awareness, farm issues, water conservation, smoking, AIDS, and physical education are just some of the issues competing with the environment for classroom time.

In order to effectively bring environmental issues – such as solid wastes – into the classroom, this paper outlines how to apply the principles of marketing and a marketing plan to the design and implementation of a successful curriculum.

A CURRICULUM PLAN

A successful school curriculum begins with a plan, not unlike a marketing plan, which you might write for any aspect of your interpretive center or agency operations. The plan gives you the chance to thoroughly review the goals and objectives you hope to accomplish and put them in terms of the needs and expectations of the target audiences you select. Marketing techniques allow you to establish and maintain an exchange between you and your target groups to: understand their needs, identify constraints they work within, research perceptions of products and service benefits, prioritize existing or expanded services and materials, involve potential users in decision-making process, and to gain an image of excellence in materials and reliability.

This section of the paper follows a general plan using a customer focus marketing approach to designing and implementing a school solid waste education program.

STEP 1—EVALUATE THE SITUATION

- Before you begin take time to research the current situation in your area. The first part of your plan should answer questions like:
- What materials or programs are already available? Who offers them? What do they teach?
- Can I join in or use their's or do I need to develop my own?
- What resource materials are already on the market?
- Who are some potential users of my materials/services?
- Who are the decision makers on the use of your materials/services?
- How can you communicate with them?
- What are the constraints your target groups work under? What issues are important to them?

You will most likely come up with additional questions and a list of people to ask those questions of. During our research we spoke to a range of people from the County Superintendent of Schools to individual teachers, science consultants, other program providers, and school administrators. We found some interesting results which you might consider in designing your own program. Three overriding concerns seemed to be: teachers already have too much to teach, teachers don't have time to incorporate a bunch of activities into the classroom, and many teachers – especially in the elementary grades – have little science or environmental background to teach from (there was a lot of concerns on the whole area of teaching misconceptions in science).

PRIORITY ISSUES IN EDUCATION

There appear to be three priority issues in education today: **1**) Building self-esteem and personal responsibility, **2**) Drug and gang awareness, **3**) The basics; reading, writing, and mathematics. Most everything else is of lower concern. Connecting into these three areas is one key to a successful program. We also found that many of the environmental and solid waste education materials available to teachers and listed as "curriculum materials" were really nothing more than activity collections.

They assumed the teacher had the knowledge and time to pull together activities and put them into a curriculum package they can use in the classroom. Few offered an actual "script" for teachers to follow. Most teachers do not use materials presented in this fashion. In fact, we ran into a number of frustrated organizations who sent the Earth Day curriculum materials unsolicited to teachers in the county, only to discover that few used the lessons. The teachers had neither the time or background to add it to their course of instruction.

Finally, the framework requirements in California (or your state) are important to teachers. They form the basis on which their students are evaluated. Connecting into those frameworks appeared to be important to the success of our program.

STEP 2—DETERMINE GOALS AND OBJECTIVES

Once we understood the direction to head, we designed goals and objectives to provide the foundation on which the curriculum and program is built. Some people even suggested having an underlying philosophy or vision on which the program is built. Too often curriculum materials are written first, and then goals and objectives are written based on the completed unit. Teachers are able to pick up quickly on materials developed backwards, because they often loose focus and the student's attention.

The philosophy or goals provide an overall direction for the curriculum, while objectives consist of quantitative statements of what the students will be able to do after they complete the unit. Based on the research we conducted, we established our solid waste education program on the following philosophy and objectives.

ENVIRONMENTAL EDUCATION PROGRAMS

Environmental education programs from the Ventura Regional Sanitation District are built on the philosophy that all natural resources are interrelated. One cannot study solid wastes without considering all other elements of the environment.

Programs and classroom activities emphasize personal development and self esteem by helping students identify the positive individual actions they can take to address environmental issues like solid wastes.

Education programs are designed with the California Framework Concepts for science, social studies, and language arts in mind, to allow teachers to blend programs into ongoing classroom activities and objectives.

School programs and landfill field trips provide opportunities for students to apply academic skills, such as writing, reading, mathematics, and creative arts.

Classroom teachers and students can expect top quality programs, professional presenters, and accurate information from the Ventura Regional Sanitation District.

As we later determined components of our program (see Step 4), each unit in the curriculum was based on this philosophy and objectives.

STEP 3—IDENTIFY AND TARGET MARKETS

Target markets are nothing more than the potential customers of your program. You should have a pretty good idea of who would be interested in your services from the research in Step 1. It might be school teachers, administrators, school children, curriculum councils, interns, parents, governing boards, and so on.

In our case we identified classroom teachers, curriculum councils, and the County Superintendent of Schools as our primary targets. A secondary target included member cities (who are primarily responsible in California for waste reduction). Classroom teachers are the primary target, because they have the ability to decide what supplemental materials will be included in their classrooms. All of our materials were then developed with individual teachers in mind. We also identified the vehicles for communicating with teachers. These included a direct distribution brochure, presentations at teacher training programs, announcements in county-wide science education newsletter, and via the regional environmental education council.

STEP 4—DEVELOP MATERIALS AND SERVICES

It's tempting and often easier to decide within your organization what services or materials you want to offer, and then go out and produce them without really doing the previous three steps. Banish the thought. You'll be preaching to the choir. We found a number of teachers who willingly called us to come to the classroom, developed their own activities, used supplemental environmental education materials on the market, and were generally environmentally aware. If those are your target teachers, then you can ignore the earlier steps. But they account for less than 20% of the teachers! We wanted to design something which would get into the classrooms of the 80% of the teachers who do nothing on the environment or solid wastes. And to work, we found the research, philosophy, and targeting the steps crucial to success.

This is the step where you blend your research, philosophy and objectives, and the needs and expectations of your target markets into the specific materials and services your organization will offer. The list is endless, but remember to keep the customer in mind. Don't design a great package of services which you like, but which your target really can't use. Involve them in the decision making process.

Try pilot programs, run your ideas by curricula councils or a couple of teachers, get in the classroom and do a little teaching to see what works, talk to designers of other successful programs. Whatever materiels and services you decide to offer, make sure they meet the needs of your market. Most of us are not in the position to force our services onto our customers, the y make the decisions on whether to use us!

At this step blend the needs and benefits sought by your target customers with the organization's mission. Look for the overlaps between the two spheres of interest. How can you communicate the messages important to your organization in a way that is important to your target groups? In our case we charted the needs in both spheres to help guide the development of our services and materials. Some of those needs included:

SANITATION DISTRICT MISSION NEEDS AND BENEFITS TO TEACHERS

- Reduce trash going to landfill
- Build self esteem in students
- Encourage recycling in the home
- Teach school basics: reading, writing, math
- Increase source reduction
- Bring in outside environmental resources
- Change attitudes towards waste
- Classroom materials requiring little prep.
- Meet Assembly Bill 939 requirements
- Free materials and programs
- Build feeling of personal responsibility for waste
- Unique field trip opportunity
- Build markets for recycled materials
- Meet requirements of state science framework

With these in mind we developed a preliminary set of products and services which focus on the overlap between the spheres. Our programs and services reflected our need to reduce wastes, increase recycling, and build personal responsibility, while at the same time providing the teacher with an easy resource for building self esteem, applying basic skills, and introducing a current topic into the class schedule. We identified four products and services based on this information:

1. An in-school program presented by our staff consisting of six elementary and six secondary units. Each unit is built on a set of specific objectives, and is accompanied by a series of easy pre and post activities for the teacher to accomplish before and after the classroom visit (unit listing to be distributed at session).

2. Landfill field trips for third grade and above. Visits emphasize specific actions students can take to reduce wastes and save natural resources. Secondary students become involved in field testing and environmental monitoring, looking at interaction of air, water, and waste issues.

3. Teacher workshops will be offered to build background in science and environmental education. Teachers will be trained to teach units and use resources of various agencies in the county. Offered during the work day, teachers will get out of the classroom and can earn credit. Part of the workshop includes developing new units for use in the schools.

4. An environmental education curriculum library has been established for teacher use. Teachers may check out materials and videos for use in their classroom or to prepare new lessons.

Throughout the development process involve your customers in the decision making. We have continually bounced ideas off of teachers and school administrators along with continually piloting new classroom materials. Their support and acceptance is critical to the success of the program and in meeting our objectives.

STEP 5—IMPLEMENT AND EVALUATE

Now comes the easy part. Assuming you have done well with the previous steps, implementation should be rather easy. Already the best channels for communication have been identified, and if you've designed a product the customer really wants, they should be knocking down your door!

Continually evaluate the success of your product and services. The Four P's of Marketing remind us to look at price (sometimes a free program is perceived as not having any value), product, placement, and promotion. If something isn't working examine all four of these areas. Maybe the product is great, but it hasn't been communicated (promotion) through the right channels.

Perhaps it's difficult for the teachers to get a hold of you, or you're charging too much or not enough (time or money) for your program. Stay in touch with what's happening. Be ready to add new things, delete ideas which don't work, make changes. Never expect your program to be an instant success. Success comes only with constant refinement and improvement.

Currently we are piloting aspects of our program, evaluating results, and making improvements. In addition to direct teacher feedback to us, a number of our units use pre and post tests to indicate an idea of the impact that has been made on the student. Many schools have started recycling programs and we look at those, too, for indications on the success of our efforts.

One of the Laws of Ecology is that Everything is Always Changing, and that's certainly true in a successful school education and interpretation program.

SUMMARY

Schools provide agencies and organizations with an excellent opportunity to communicate their message, and impact the attitudes, beliefs, and values of the students. Certainly the environment is an important issue in our society, but it's not always a top priority in the schools. By using a few of the techniques of interpretation and marketing, an effective education program can be developed which will be used successfully by the target groups.

BACK TO THE FUTURE FOR INTERPRETATION

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INTRODUCTION

What will life be like in the next century? It would be very beneficial to be able to see life as it might be 100 years from now. Not the wishful thinking and not the doomsday extreme, but a real view of the future. While it is not possible to have a time machine catapult us into the future we do have capabilities that allow us to predict what may happen. Decisions made in the 1990's will direct future events. We may not be able to control the future, but we certainly can and are affecting it. As interpreters and educators we can act as messengers of the future by informing people of life in the future if we are not careful in the present.

The problems the planet faces are of a global nature. Environmental problems do not stop at national boundaries and it is of vital importance that we recognize the urgency to create a common goal, the need to protect all natural resources. Can we predict how interpretation will be effected if these natural resources are not protected? Will interpretation as we know it today continue?

Consider the Chernobyl Nuclear Reactor melt down in Chernobyl, USSR in the late 1980's. This single event caused a dramatic change in science education in nearby villages. Students no longer were able to take field trips to local woods and ponds. The risk of further radioactive exposure is high for youngsters and the natural area has not been the same since the event. The educators now take students on hallway field trips to view displays designed to simulate life before the meltdown. One accident changed life for so many. Is this an omen of things to come?

People will be living longer in the twenty-first century, but what will the quality of that life be like? Our population will live longer and the numbers will continue to rise. In the next century we can expect 10-15 billion people to be living... double to triple that of today's population. The problem therein lies in the planet's carrying capacity which is estimated by scientists at 30 billion. What will we do with all those people? Where will we put them? What will we feed them? The world's population will need to make do with less or to do without. This is something interpreters have been doing for a long time, so who better to teach others.

WARNING SIGNS

The warning signs can already be seen. Reports of water shortages and the deterioration of water quality will be common in the future. In many parts of the world these are serious today and promise to intensify as time passes. Soil erosion, loss of nutrients and compaction of the soil due to overuse are expected. We can even foresee loss of high quality crop land to urban development. :Rapid destruction of tropical forests will adversely affect other resources. Everything from patterns of weather to land formation will be influenced. Extinction will affect 2 million species or 15-20% of all those species living on the planet. At present 4/5 of the world's food supplies come from less than 25 plant and animal species. Both wild and domestic strains are needed for breeding resistance to pests and disease, yet we will continue to destroy the diversity of our life support system. The temperature of the planet may rise up to 9 degrees. This will cause an onslaught of flooding as the polar ice caps melt and may destroy valuable farm fields in wetland areas, further leading to famine.

The obstacles are many and the solutions go far beyond the capabilities and responsibilities of one group of individuals or one country. The oceans and the air are shared by everyone. While the future does seem pretty bleak, there are some bright spots on the horizon. Remember the trees you planted in the park last spring? They will grow to over 100 years of age and will reproduce many times with each successive generation working to clean the air and help return nutrients to the soil.

RECYCLING

Recycling has become second nature to the bulk of the population. We still have garbage and we still collect it by hand, but we have learned to make do with less packaging. We recycle what we can and compost the rest.

Nuclear energy of the future tends to pose no greater risk than those related to fossil fuels. Yet it is no less serious.

The population's work ethic will relax a bit and people are looking for more ways to be informed and entertained. Visitation to all our natural areas will increase as people become more aware of the importance of the world's natural resources. People will see the need to protect the few assets we have left including historic sites. Perhaps you will even live long enough to see the historic space station, featuring international interpretive tours via a space shuttle.

The world will be very different from today in many important ways. For every five persons on the earth today there will be ten, yet eight of those ten will live in less developed poor countries. Fewer resources will be available to go around to more people. The planet will loose important life-supporting capabilities and the world will be more vulnerable to both natural disasters and to further disruption from human causes unless people of the twentieth century realize they are creating an unmanageable future for later generations. Today's acts are the future that are being handed to the residents of the next century.

SUMMARY

As interpreters we can influence population to a better future. If today we can convince two people to care for the planet and it's environment and tomorrow through their words and actions they can each convince two people to do the same, within the month everyone in the United States would become a bit more aware and perhaps take action. Imagine now if we could convince two people on each program we give.

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THE NATURAL GUARD: A NEW NATIONAL ENVIRONMENTAL EDUCATION ORGANIZATION OF YOUTH

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ABSTRACT: The Natural Guard is a national, non-profit, community-based environmental education, service, and advocacy organization designed for school-age youth. By providing information, skills, and an environmental ethic, we offer young people an opportunity and the tools to solve environmental problems in their own communities. Utilizing the lessons we learn in 1990 by establishing model chapters in Baltimore, Maryland and New Haven, Connecticut, The Natural Guard hopes to expand to communities throughout the country.
KEYWORDS: environment, education, youth, organization, community service projects, advocacy

INTRODUCTION

The Natural Guard is a new national environmental organization for young people. It is a non-profit, tax-deductible environmental education, service, and advocacy organization designed for school-age (K-12) youth. Through education and involvement, we want to inspire young people to recognize and solve environmental problems. The Natural Guard is an environmental education organization young people will find exciting, fun, and worth- while. Our objective is to achieve environmental literacy among our nation's youth.

The Natural Guard's five major goals are to:

• Instill in young people a better understanding of and appreciation for the local environment and, the world around them.

• Generate service projects—such as litter clean-up, recycling, pollution patrols, energy conservation, wildlife habitat enhancement, tree-planting, and other activities—designed to protect and enhance the environment, provide benefits for the entire community, and develop leadership skills in young people;

• Instill a sense of advocacy, and teach the skills necessary to achieve the goals of environmental protection and enjoyment;

• Institute a supervised exchange program among chapters that provides opportunities for outdoor exploration of different environments; and

• Emphasize career opportunities in the environment, conservation, and related fields.

BACKGROUND

The vision for The Natural Guard comes from entertainer and environmentalist Richie Havens. Fifteen years ago, Richie co-founded the North Wind Undersea Institute on City Island in the Bronx. Today this outstanding environmental education center and marine museum hosts more than 30,000 children a year from the metro New York area school systems.

The North Wind Institute has many success stories, but the one that makes Richie proudest is that the young people often return to the museum with their parents to participate in after-school programs. In an effort to reach more children, Mr. Havens formed The Natural Guard to provide young people throughout the country exposure to the variety of tools and skills they can utilize to address the environmental needs and concerns of their communities.

We believe that the ideas, programs, and goals of The Natural Guard are universally appealing to young people. Our plan is to reach kids from many geographic, economic, and ethnic backgrounds. However, we intend to organize first in communities that are not being reached by other environmental education programs. Included are city neighborhoods and rural communities disproportionately impacted by air and water pollutants, toxic and hazardous wastes, and other environmental problems. We also plan to work in the increasing number of communities where the primary language is Spanish. In order to reach these young people, appropriate staff, educational materials, and brochures will be bilingual.

ORGANIZATIONAL STRUCTURE

Richie Havens serves as chairman of the board of The Natural Guard. In selecting qualified candidates to serve on the board, we have emphasized an important diversity of cultural and ethnic backgrounds and experiences.

The headquarters for The Natural Guard is in Washington, D.C. The national office is responsible for developing education and conservation programs, distributing learning materials, training chapter personnel, creating incentive and award programs, and initiating and assisting new chapters.

In 1990, The Natural Guard opened model chapters in New Haven, Connecticut and Baltimore, Maryland. Over the next twelve to eighteen months we plan to establish chapters in New York City, Washington D.C., San Francisco, Detroit, Orlando, and Las Cruces, New Mexico.

Each chapter of The Natural Guard will be an affiliate of the national organization, separately incorporated, and governed by a local board of directors. Chapters will be funded by local charities, agencies, business and industry, and individuals. In communities with an existing children's museum, nature or environmental center, or a science or natural history museum, The Natural Guard will work cooperatively to form a chapter within that institution. We believe strongly that the success of each chapter lies in a structure which allows local civic and environmental leaders to establish programs appropriate to the community.

EACH CHAPTER

Each chapter will be staffed by environmental educators and naturalists familiar with the local environment and educational resources. The board staff, parents, and volunteers will work with the young people to develop a hands-on learning center focused on the local environment. Each facility will include exhibits, and a print and video library. It will serve as a base for other chapter activities and projects.

We believe that one of the ways to respond to the crisis in education is to challenge our youth to help solve real problems in their own community. Chapter staff will initiate after-school and weekend environmental projects designed to engage young people in volunteer service to protect and enhance the environment, to provide benefits to the community, and to develop valuable leadership skills.

SERVICE PROJECTS

The nature and extent of service projects is almost endless. For example, some of the projects, such as recycling, will help generate additional funds for the chapter. Pollution sampling studies undertaken on a local water body or wetland not only teaches about the hazards to a fragile environment, but may also identify a problem that can be corrected. Urban neighborhoods can be made more beautiful and livable by planting trees and sprucing-up open spaces. There is no shortage of projects that return the investment the community has made in The Natural Guard.

These environmental community service projects also have intrinsic educational value. The more technical projects such as watershed assessment and weather monitoring reinforce and build on the child's existing math and science skills. Projects that engage young people in mapping and ecosystem studies will challenge and refine their geographic awareness. All of these hands-on projects will augment and complement the child's formal education and, we hope, spark an interest in environmental or conservation careers.

The Natural Guard participants will document their work in the community by keeping a videotape record of the service projects. These tapes will be used to promote The Natural Guard activities at an annual Spring environmental fair. Also footage will be made available to the media to help balance the local news with the positive and enterprising activities that create, in young and old alike, community spirit and pride.

The chapter staff will develop a community outreach program to encourage public and private groups such as, church groups, youth clubs the Boy Scouts and Girl Scouts, Youth Service Corps, and other groups to visit The Natural Guard facility and participate.

FUNDING SUPPORT

To date we have received financial support from private and corporate foundations, federal agencies, and individuals. To help assure our success, the National Wildlife Federation is providing the national office of The Natural Guard free office space and support services for our first year of operation. The New York ad agency of Ciociola & Company contributed our logo, a public service announcement and a jingle for Richie Havens to record. The Wilderness Society and the Maryland accounting firm of Reznick, Fedder, and Silverman have made a generous contribution to the organization of financial advice and accounting services.

THE BALTIMORE INITIATIVE

The mayor of Baltimore, Kurt Schmoke, and the Parks and Recreation board president generously donated the old Stone House, stables, and 10-acre grounds for use as The Natural Guard's chapter post. The chapter house, which is adjacent to Frederick Law Olmstead's masterful Druid Hill Park and the Baltimore Zoo, was formerly the Zoo Director's home. It is being renovated with funds from private foundations and a generous contribution of labor and materials from the local AFL-CIO.

FUTURES AND PROJECT R.A.I.S.E.

In a collaborative effort, The Natural Guard and the Yale School of Forestry and Environmental Studies' new outreach program, the Urban Resources Initiative, worked this past summer with a group of Baltimore teenagers from Project R.A.I.S.E. (Raising Ambition Instills Self-Esteem) on a 6-week natural resource community service project in Baltimore's largest park, the 1400-acre Gwynn Falls/Leakin Wilderness Park. These young people are part of larger group of mostly minority teenagers participating in programs called Futures and Project R.A.I.S.E., both designed to keep high-risk kids in school.

The Natural Guard has established a long-term program to work year-round on environmental service projects with youth organizations like Futures and Project R.A.I.S.E. as well as young people from the neighborhoods adjacent to the Stone House. The Natural Guard will provide an environmental education experience for these deserving young students by initiating after-school and weekend volunteer service projects that they will enjoy and that will benefit the entire community.

Through this experience the young people gain valuable organizing and leadership skills, develop greater self-esteem, and feel a part of, and commitment to, their own community. These volunteer projects also encourage young people to stay in school so that they may pursue career opportunities in the environment, conservation, and related fields.

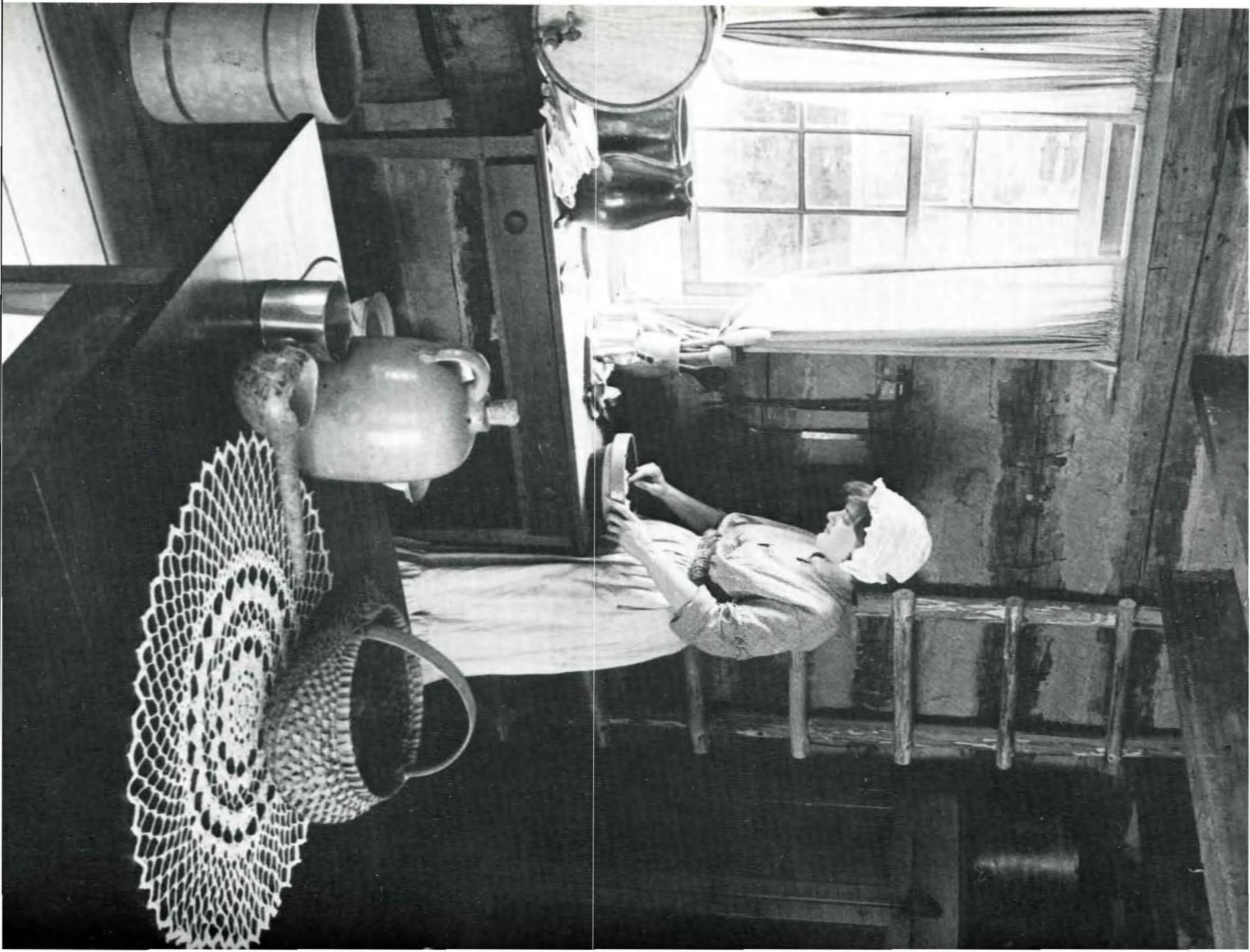
THE NEW HAVEN INITIATIVE

The director of the Dixwell Community Center has donated space to house The Natural Guard's New Haven chapter office, library, and exhibits at the "Q" (for community) House. The chapter began organizing this past summer by recruiting young volunteers from the mostly minority, low-income, Dixwell neighborhood to work at the Inner-City Co-op Farm, a non-profit grassroots operation that is feeding the poor and homeless in the city. In addition, participants established a project in cooperation with the Parks Commission for planting seeds for flowers and vegetables and tree seedlings in vacant city lots.

CONCLUSION

Both the New Haven and Baltimore chapters are located in neighborhoods that are afflicted by poverty, crime, drug and alcohol abuse, homelessness, and a neglected environment. These communities have expressed an eagerness to establish a partnership with The Natural Guard to address these problems by providing young people information, tools, and skills to help improve the quality of life for everyone. The Natural Guard is pleased to be able to work with the young people in both of these cities to provide a positive initiative of environmental programs and services for the residents of these underserved neighborhoods.

By duplicating the public-private initiatives and community involvement demonstrated in Baltimore and New Haven, The Natural Guard can keep capital costs at a minimum and expand to other parts of the country. The Natural Guard plans next year to publish a guidebook to organizing chapters in communities throughout the United States. We hope members of the National Association of Interpretation will participate in establishing new chapters of The Natural Guard.



RESEARCH SYMPOSIUM

Dr. Gail Vander Stoep
Dr. Mike Legg

As we began planning this research symposium, our intent was to structure a forum to facilitate open exchange of information and ideas, to create a 1990 benchmark for the status of major issues in interpretation, to encourage increased participation by researchers in NAI activities, and to increase the breadth and quality of the research component. To do this we greatly expanded the call for papers to include international participants, invited *"state of the research"* papers in several fields, and planned a open forum to link researchers with land management agencies involved with interpretation.

The major issues targeted for *"state of the research papers"* were:

- **Status of Research in Historical Site Interpretation,**
- **Evaluation of Interpretation, and**
- **Interpretation as a Management Tool.**

As the authors began exploring the applicable research it became clear that there is a paucity of research being conducted in most interpretation related areas. These are fertile fields for research to make a contribution to managers and practitioners. The demand for pragmatic, applied research is great. The session linking researchers with agencies provides one forum to begin identifying the most critical research needs and facilitating future research agreements.

As roles of interpretation continue to expand (globally as well as content and purpose), we can identify other areas ripe for research attention. The current list includes such topics as ecotourism, global issues, urban and minority audiences, issue oriented interpretation, and program accountability. The future needs will include these and many more. Hopefully interpretive research will begin to lead the way for the rest of the filed instead of following behind the innovations of field interpreters. The challenge is to keep the communication paths open, to be creative in approaching relevant research, and to communicate effectively the application of research results to what we do as field interpreters.

HISTORIC SITE INTERPRETATION: PAST, PRESENT AND FUTURE RESEARCH

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ABSTRACT: A perspective of recent, on-going and future directions for research on historic site interpretation. The literature was reviewed to establish a base line for current understandings, a survey was conducted of sites in the United States and Canada to determine the type and extent of research having been or currently being done, and projections were made on the basis of suggestions listed on the survey as well as those perceived as a result of dealing with the literature and survey input. Limited research has been generated in the past, while there is a suggestion that modest efforts are underway to increase this information base the future holds a need for extensive research in the areas of individual site background needs, and more generally in the area of visitor perceptions, satisfactions, cognitive growth, behavior change, etc.
KEYWORDS: Historic site research, historic site interpretation, living history, personal services, non-personal services, first-person and/or third-person interpretation.

INTRODUCTION

Historic sites and museums have appealed to many people for a long time; and it would appear, that today, American history is enjoying an even greater revitalization. Visitors come to sites for a variety of reasons and with different amounts of knowledge, however, when they leave most of them expect to be informed in one way or another. It is the purpose of interpretation to broaden visitors by stimulating their minds toward a desire to learn more about their past and themselves (Tilden 1977; Alderson 1985).

In the case of historical interpretation, audiences may have ideas or general expectations as to the appropriate way to commemorate events or sites of historical significance. Their ideas or expectations are rooted in culture and tradition (Blatti 1987). One of the most important roles of the historian-interpreter is to give life to the past through the process of selection, arrangement, and presentation of historical material in such a way that those in our contemporary cultures will feel enhanced and improved by objects and ideas from another age.

Giving meaning for those in the present, to the past, becomes one of the most exciting applications of interpreting history as a profession (Howe and Kemp 1986). To do so, calls for continuing research and experimentation. As in any field, including interpretation, to be considered a profession, leadership and growth must exist.

EFFECTIVE AND VISIONARY LEADERSHIP

Effective and visionary leadership depends upon understanding where we have been, where we are and projecting where we need to be. It is to that purpose this study was undertaken. Its intent is to

1) review available literature and research completed in the last five years,

2) review current research efforts, and

3) present a brief analysis of what has and is being done in order to suggest the direction of research for the future.

Interpretation has been identified by the American Association of Museums as the single most important requirement of historical sites (Alderson and Low 1985). Published research, however, does not reflect this mandate. Interpreters at historic sites and historians working in the field of interpretation can both benefit from an assessment of the extent to which research is used at various places and by various individuals. This study also points out the current research interests at sites; thus allowing those who share some degree of communality an increased awareness of mutual interests.

LIMITATIONS

The scope of this study was restricted to the literature found as a result of interlibrary search and responses solicited from managers of sites, museums, and organizations of historical significance situated in the United States and Canada. No attempt was made to compare literature or sites to be surveyed on the basis of primary purpose, financial situation, or physical features. Therefore, the results of the survey do not reflect factors liable to explain differences or similarities in responses.

DEFINITIONS

In any discussion of research having been completed, presently underway or needing to be done, it is important to have a common ground of understanding. The following definitions have been found to best represent the general essence of the field.

•**INTERPRETATION:** An educational activity which aims to reveal meanings and relationships by the use of original objects, by first hand experience, and by illustrative media, rather than simply to communicate factual information (Tilden 1977).

•**HISTORIC INTERPRETATION:** A planned effort to create for the visitor an understanding of the history and significance of events, people, and objects with which the site is associated (Alderson and Low 1985).

•**OUTDOOR MUSEUMS:** Those buildings of historic significance relocated to [or maintained in] safer, more accessible spots, which are often free of modern intrusions as well (Anderson 1984).

•**LIVING HISTORY:** It is doing and interpreting what was real in another time (Warder 1987).

•**FIRST PERSON INTERPRETATION:** Being yourself in another time frame, bringing the past back to life. It is a logical explanation of life in the past put in the interpreter's own words (Warder 1987).

•**THIRD PERSON INTERPRETATION:** It is the process of interpreting another person's lifestyle, either in contemporary clothing or period clothing (Warder 1987).

REVIEW OF LITERATURE

Historic site interpretation is not treated extensively in the literature. A few notable contributions from the well known pioneer in the field of interpretation, Freeman Tilden (1977), and, more recently from a pioneer in historic site interpretation, Jay Anderson (1984), as well as additional studies carried out in the last decade have all added to the field of historic site interpretation

THE CONCEPT OF HISTORIC SITE INTERPRETATION

In the broadest sense, historical site interpretation can be considered as a sum of methods employed to create a valuable link between the visitors and the site (Howe and Kemp 1986). It necessitates the presence of a real object (Barkley 1981). Most of the time, the "object", in a broad sense, is the reason why visitors come to the site: they want to see and experience something unusual. Because historic objects come from another time, it is possible their message might be misinterpreted by those not familiar with the particular past being represented. Interpretation provides the missing link between the present and the past.

By revealing the important meanings and relationships of the sites, historical site interpretation can enhance the visitors' understanding of the site's importance. Whether this is achieved through personal interpretation or as non-personal services, the result remains the same: the translation of the past into a language that relates more easily to present values and ways of thinking. In short, education is a diffusion process whereas interpretation is a synthesizing process.

THE HISTORIC SITES SUBCOMMITTEE

The Historic Sites Subcommittee of the American Association of Museums defined interpretation, for purposes of accreditation, as a "planned effort to create for the visitor an understanding of the history and significance of events, people, and objects with which the site is associated" (Alderson and Low, 1985). This suggests the only difference between this definition and Tilden's is that historic interpretation is designed as a "planned effort" of a program to give it better direction.

During the early stages of interpretation in the nineteenth century United States, very little interpretation was needed at historic sites and museums. Through school curriculum or oral tradition, enough was known of those men or events to make interpretation "quasi" useless. History, as an area of public interest, went through a recession.

For a while it lost popularity and oral tradition largely became obsolete. People today, however, have more opportunity to travel and visit and are seeking renewed involvement. To make up for the discrepancy between lack of knowledge and need of knowledge, historic site interpretation has developed to a high degree of sophistication, provided understanding, and better fulfilled purposes of the site.

Historic sites, museums, and houses are more difficult to interpret than natural sites. Generally, it seems easier for audiences to appreciate natural features rather than historic features. Even though both sites require research and interpretation, natural environments are more likely to attract visitors' attention and interest (Ronsheim, 1974). Following this logic, observation suggests that historic features are static. Understanding the past requires sustained attention and intellectual strain. However, this feeling of history can be inspired or created. For example, it is possible for an interpreter to develop a link between a historic building and an individual by relating the building, its architecture or its past to the visitor's personality and/or experiences.

PRIMARY METHODS OF HISTORIC SITE INTERPRETATION

Several interpretive methods are applicable to either outdoor or indoor sites. The intent, herein, is only to quickly review what is current. Interpretive media are traditionally divided into two categories: personal (attended) services, and non-personal (unattended) services. Typically, nonpersonal services with a combination of labels, self-guided activities, audio and/or visual devices work well indoors. For outdoor sites, with full scale historical environments, visitors are better served by personal guides, living interpretation and demonstrations (Alexander 1968).

Non-personal Services are well-known techniques which enhance visitors' appreciation and enjoyment beyond the availability of individual interpreters. As opposed to unattended services, personal services put the visitors in direct contact with an individual interpreter. Personal interpretation is considered effective in Diffusion theory communication for reasons of its warmth.

INDOOR MUSEUMS

Visitors to indoor museums (historic houses or galleries) are often experiencing the only contact they will have as adults with history (Harvey, 1987). The interpretation presented at such places becomes all the more important in that the first impression they will get from this experience will decide whether they come back or not. Making the experience interesting and attractive is a more difficult task than at outdoor sites (museums), however, exhibition methods exist which allow for creativity and diversity.

HISTORIC SITE RESEARCH

Colonial Williamsburg, established in 1926, was one of the first sites to become involved in historic research. Their staff emphasizes the processes of preserving and restoring buildings, landscapes, and interiors of the past, and then interpreting them truthfully, demanding thorough and continuing historical research.

Possibly the most fundamental issue for interpreters at any site, but specifically in the context of this discussion, is historical integrity. Both visitors at historic sites and those from an earlier time being represented deserve and even have a right, to historical honesty. What is meant by historical honesty is the intention to understand and present the events of the past on the past's own terms.

> "The incredibly delicate task of both trying to put ourselves in the shoes of another generation and still recognize—daily—that we cannot ever do so" (Sherfy 1977).

Just as we don't like somebody taking our words and thoughts and twisting them, our interpretation of events should remain respectful of the thoughts and words of the past. For historians researching the past, this kind of interpretation is no more than a "listening and repeating" process in a manner enriching present civilizations without impoverishing past societies.

As discussed earlier, historic site interpretation is not static, because historical values are not fixed. They are constantly evolving with the changing values and perspectives of audiences. Because perceptions of history don't remain the same over time, research is a continuing need. It helps adjust knowledge of the past to present expectations.

However, of equal importance, is the need for research on the impact the site is having on visitors and their experience, their understandings, satisfactions, expectations.

METHODOLOGY

As indicated at the outset, the purpose of this paper is to

1) review available Literature and research having been completed in the last five years,

2) review current research efforts, and

3) present a brief analysis of what has and is being done in order to suggest the direction of research for the future.

A literature search was initiated to develop a bibliography of pertinent manuscripts, records, newspapers and magazines articles, research papers, and books. This was used as a means of acquiring a better understanding of the topic.

A survey questionnaire was mailed to 271 historic sites, museums and living history associations in the United States. Historic sites were chosen from those listed in the booklet *The National Parks: Index* (1987) as well as other sites, museums and associations mentioned in *The Living History Sourcebook* (1985).

A five-item questionnaire was generated as the most effective and cost efficient method of gathering the desired information. A total of 122 responses were received, a return rate of over 45% of the initial population. All responses were used for data analysis procedures.

RESULTS

Three content areas clearly emerged and were defined and organized as:

1) methods of interpretation used,

2) past and future research conducted, and

3) directions for interpretive programs in the future. Results are grouped to establish a clear perspective of recent and on-going interpretive research. Results for question 1 are presented in Tables 1 and 2.

Table 1. Attended methods of interpretation.

Method	Total cases	% used	% not used
Personal	116	95.0	5.0
Living History	46	38.0	62.0
Period Clothing	53	43.4	56.6
Guided Tours	103	84.4	15.6
Uniformed interpreter	89	72.9	27.1

Sample Size = 122

Table 2. Non-attended methods of interpretation.

Method	Total cases	% used	% not used
Non-personal	116	95.0	5.0
Publications	106	86.6	13.2
Museum Display	108	88.5	11.5
Audio-devices	45	36.8	63.2
Audio-visual	85	69.6	30.4

Sample Size = 122

Personal services were used by 95 percent of the sample sites. Guided tours and uniformed interpreters, 84.4 and 72.9 percent respectively, remain the traditional and most used methods of interpreting a site. A total of 38 percent of the sample population reported having some kind of living history programs taking place on the site.

Another 43.4 percent used period clothing as a third-person means of interpretation. Some sites provided other options fitting their personal needs and purpose. Those options included a range of demonstration activities, hands-on programs, formal presentations by a designated speaker, period clothing in first person, etc.

Non-personal services, offered by 95 percent of the respondent sites, occurred as frequently as personal services. Publications and museum displays, 86.8 and 88.5 percent respectively, appeared to be the most popular means of interpretation because of their already proven effectiveness and their acceptance by the public.

Audio-devices (36.8 percent) were the least used method of interpretation. More than two-thirds of the sites indicated a preference for audio-visual programs. Other non-personal services, such as wayside exhibits, "try-it-on" clothing, reproduction artifacts, and supplements for hearing-impaired in auditoria were among the most commonly mentioned.

PAST AND FUTURE RESEARCH

Table 3 synthesizes the results obtained from questions 2, 3, and 4. As Table 3 indicates, research has not been a major preoccupation for the majority of sites in the last five years. Less than one-third of the sample population conducted some kind of research activity in the past. Moreover, only slightly over 21 percent of the sites changed the administration of interpretive programs as a result of their research efforts. Possibly additional change is eminent since more than a third of the sites indicated a desire to institute research on interpretive programs in the foreseeable future.

DIRECTIONS FOR INTERPRETIVE PROGRAMS IN THE FUTURE

This question was left open-ended, so as to avoid bias. Answers varied according to the purpose of the site. In general, the figures reflected a certain willingness to express opinion about directions interpretive programs should take in the future through omission and/or response. Twenty-four sites (19.6 percent) did not respond to this question. Fifty-nine sites (48.4 percent of the sites) provided a short description of a perceived future directional need, and 39 sites (32 percent) gave thorough detail on the directions they think interpretive programs should take in the future.

Table 3. Past and future research.

	Total cases	% undertaken	% not undertaken
On site research in the last 5 years	36	29.5	70.5
Administrative changes	26	21.3	78.7
Future research planned	47	38.5	61.5

Sample Size = 122

For almost all those indicating a future need, there was evidence that the site participated in previous research which had effected the direction of their interpretation programs at the time. The following is a concensus of proposed research directions: budgetary and staffing constraints; evaluation of interpretive programs; visitor needs; quality of non-personal services; historical accuracy; staff training; pure research of historical events; research documentation system; use of primary sources of information; archaeological research; adoption of a new perspective of interpretation; environmental controls; development of interpretive techniques; and, the value of living history interpretation.

DISCUSSION

Personal as well as non-personal services were widely used by most of the sites as interpretive media (Table 1 and 2). As previously mentioned, they are important visitor services with advantages and, of course, disadvantages. They should not be considered mutually exclusive, but rather, complementary.

As evidenced in Table 1, personal services rely to a large degree on guided tours and uniformed interpreters. Guided tours and uniformed interpreters have proven to be effective. They are appreciated by the public because of their warmth, and the opportunity they provide for direct contact, thus drawing the visitor closer to the interpreter and the site.

While a popular form of interpretation with the public, many sites appear hesitant to implement living history programs and/or use period clothing. Even though both are gaining in popularity, the associated requirements are enough to discourage site managers. Both methods of interpretation have many advantages. If well-done they provide a high level of communication, a better sense of authenticity and accuracy, a pleasant experience, and an opportunity for involvement with visitors. Disadvantages mostly lie in the character of the interpretive approach itself.

A good living history program requires a fair amount of preparation time for initial research, acquiring the needed materials, hiring and training the staff, and finally achieving the historical authenticity striven for. Moreover, living history interpretation demands more of the interpreter. He or she must be willing to make a full commitment to immersion into another life and another time.

Other interpretive methods were suggested by individual sites in addition to those already on the list. Commonly cited were cultural demonstrations along with on-site slide shows, special programs involving guest lecturers, roving informal interpretation, nature walks, and canoe trips.

NON-PERSONAL SERVICES

Table 2 reflects non-personal services activities which are proven to be highly effective methods of interpretation. Publications can take various forms (leaflets, books, posters, etc.), general or specific. They can tackle any kind of topic and address any kind of audience. They help visitors prepare for the tours or give them more insight into the subject after the tour. Moreover, publications have a take-home value that other media don't.

If well planned, museum exhibits can serve many of the same functions as publications. Since they can address any topic or audience. Audio-devices are not extensively used, whereas audio-visual media scored high (69.6 percent) among the preferred interpretive methods. Both devices have the same disadvantages: they are subject to breakdown, they require regular maintenance, and the equipment necessary to operate them is not always available in an outdoor setting.

Self-guided tours and wayside exhibits were often mentioned by the sites as other means of interpretation used. Some sites include reproduction artifacts in their exhibits and feel they are a good resource to use when the original item cannot be made available, for what ever reason.

PAST RESEARCH

Table 3 relates that relatively little research has been done in the last five years on interpreting historic sites in the United States. Actually, visitors seemed to have been one of the most overlooked elements. Reasons commonly cited were: lack of funding and time; low priority due to limited visitations; and, a sense that the subject was thoroughly studied before embarking on this type of interpretation ("we've always done it this way").

Among the 36 responding sites indicating having undertaken research in the last five years, 26 sites (21.3 percent) implemented changes in the administration of their interpretive programs as a result. Among the 10 not doing so, one justified it by indicating their results are not all in yet. Decisions on whether or not to change the administration of the program will be made according to the findings. Four gave no explanation regarding why no change was implemented. Five had not completed their research. In some cases, research had begun in the last few months as part of a one or more year long surveys, therefore, was still ongoing. Others felt a need for conducting additional research after the first results were known. Those sites did not exclude the possibility of change in the administration of programs if findings so indicated.

Among those sites having changed the administration of their interpretive programs, many had geared their research efforts specifically toward better meeting the needs of visitors. The goal was to incorporate the information received into the interpretive programs, and modify them in consequence. Colonial Williamsburg is an excellent example. Many smaller sites also indicated no hesitation in implementing changes. Changes typically fell into five major areas. The first change affected the interpretive programs.

Changes in interpretive programs included the creation of new programs, the restructuring of existing themes, and the development of sub-themes as well as the exploration of new topics of social and community life, such as slavery, death, and marriage. The second kind of change involved visitor services. It was reported that visitor services directly related to the interpretive programs improved markedly. Third, changes in interpretive publications resulted in the preparation of new interpretive brochures and handbooks for public use. Fourth, change occurred in the development of plans, reports and studies used to support more formal site documents. Indirectly then, change occurred to the major site documents as well. Last, change came about in the interpretive staff itself. Research resulted in the reorganization of the interpretive staff, hiring new interpreters or moving personnel from one site to another.

FUTURE RESEARCH

Of all the sites responding, more than a third (38.5 percent) indicated an intention to conduct interpretive research in the near future. This represents a 9 percent increase when comparing with the percentages of sites interested in research projects in the past. For many of them, research is an ongoing process. Of the nearly two-thirds (61.5 percent) of the respondent sites not intending to be involved in interpretive research, several forwarded the lack of financial support as a factor in their decision.

With very few exceptions, most sites perceived there would be some change taking place in interpretive programs in the foreseeable future. For some of them the changes were not yet defined; but they should become more precise when results of present research are known. In general, the focus of future studies varied according to the present state of research at the site.

The areas of major concern included surveys of visitors' needs. Some sites indicated studies will soon be conducted in order to improve overall operations, accessibility, and interpretation. Specifically, knowledge of visitation patterns seemed to be the key to a whole range of problems. A few sites planned to focus their upcoming research effort on the study of historical resources to provide interpretive staff with factual information.

HISTORICAL ACCURACY

Two sites indicated a primary need was to increase their overall data base, which should affect what is presented the public. Since historical accuracy can usually be improved, some sites conduct continuing research as part of an overall effort to gather background information. This ongoing effort answers questions about the economic, social, and cultural orientations of programs. At the same time, more attention was given to non-traditional themes such as women's history, religion, ethnic themes, violence, disease, etc.

As part of a management effort, the staff in two different sites hoped to revise and rewrite their respective site's interpretive prospectus. One site planned to conduct a visitor mapping study as a component of an environmental impact study concerning a park road project. It was envisioned that the interpretive program would benefit from the user group data base. Improving the quality of educational programs for elementary school students appeared to be a priority at another site.

It was felt this could be achieved through the use of media more specifically designed for that purpose. Also in process at this site was the offering of more interpretive programs in spring and fall, thus meeting the needs of an ever-increasing year-around visitation.

Modifications of the interpretive tours affecting the sequence of presentation of the site to reduce impact on historic houses was indicated as a primary focus at still another site. Frequency of tours would also be reviewed to avoid the one-to-one presentations which occurred during low visitation times.

CONSTRUCTION OF NEW FACILITIES

Overall, construction of new facilities or restoration of existing ones appeared to be of primary importance to improve the quality of any interpretive program and to meet the needs shown in the visitor use studies. There was uninamity in that, no matter the area of study, constant review should take place both formally and informally to make sure that interpretation is accurate and well-planned.

FUTURE DIRECTIONS FOR INTERPRETIVE PROGRAMS

Comments provided in this section are the result of synthesizing individual site directions for future research. Not surprisingly, the themes proposed did not differ markedly from those being currently explored. The availability of funds was a major concern for many historic sites. Concern was expressed regarding how to maintain staffing levels for interpretive programs without extra funding. Obviously, new means to get more resources need to be explored at all levels.

Many comments expressed a need to find ways to answer the all-encompassing question of "when is the program a success?" Similar questions dealt with whether sites are targeting the correct groups, visitors are absorbing the interpretive messages, the best ways to convey interpretive messages, etc. Answering these questions calls for the development of new means of assessing the effectiveness and appropriateness of interpretive media as they relate to user groups.

Included should be to measure the effects on participants' perceptions of resource values. Other studies might focus on how to build or strengthen a constituency or how to change users' behaviors. More fundamentally, research needs to be conducted regarding user's needs. The historic site constituency is growing and our knowledge of this population is not what it should be!

Origin and destination studies would help establish the base many sites need. The next step would then be to determine if visitors perceive interpretive programs to be meaningful, what approaches are most appreciated, which cause the cognitive change desired, and how to relate learning preferences to audience types, etc.

Preliminary evidence seems to suggest that historic site visitors are non-traditional park users, therefore, perceptions and learning styles may vary considerably. The differences between how interpreters perceive programs versus how the public perceives them could also be explored, along with visitors' motivations and interpretative preferences.

Non-personal services effectiveness is also in need of research, including an orientation toward improving their design, format and impact. Future research must emanate from studies in social history, cultural anthropology and folk life. It must provide visitors with the accurate historical information based on in-depth documentary investigation.

Training of interpreters was perhaps the next most frequently expressed need. Knowledge is needed on the necessary communication and subject skills required of interpreters as well as on how to maintain peak motivation as seasons progress. Specific site research is required on whether each site's training effort adequately prepares interpreters for presenting thematic and/or goal-oriented programs. Perhaps a series of training workshops, including first person interpretation, is needed based on research which establishes how best to train individuals.

Most sites were more interested in specific types of research than in general, field-wide orientations. To summarize, a need was expressed frequently for pure research of historical events (related to the site), especially personalities and social aspects of the society as opposed to technology. Moreover, as science programs generally tend to become more sophisticated, so does research. Historic site interpretive programs should make every attempt to include critical thinking, good research methodology, sophisticated analysis of primary resources and recent changes in historical thinking and historiography. Knowing all the facts in the world known about a site isn't worth anything if we can't share it appropriately with visitor's.

DOCUMENTING THE PERCEIVED NEEDS

Sites should establish a system of documenting the perceived needs for large and small research needs. Beginning with gaps in historical information to concern over whether a visitor has been changed as a result of experiencing the interpretive program. For example, a trend was noticed toward site's adopting new perspectives of interpretation, both holistic and humanistic. Interpretation shows as much of the whole picture as is possible. this concept is well accepted and understood, however, it should also be more humanistic.

People want to understand their role in history and how they are making history today based on past events. Both approaches purport to create balance by changing the perspective from a narrow to a larger perspective. Ultimately, the aim of interpretation is to promote an understanding of the site, its significance and therefore its continual protection. With this in mind, future research should focus on the development of environmental control systems to protect cultural resources with particular emphasis on the means to reduce impact or consumption activities on the sites. In addition, attention has to be given to visitors' cognitive changes, specifically, ways to increase the effectiveness of the preservation message.

Eventually, in order to improve the effectiveness of the overall program, the interpretive tools should be carefully studied to benefit management goals as much as possible. Various interpretive techniques might be conducted to determine the most effective technique for a given set of circumstances. The criteria are visitor learning and retention, measured and monitored over a designated period of time.

The results of this effort indicated research projects undertaken here and there, at sites and museums. Some activities have been completed and some are still in process. There is a clear need to have published results of research efforts. One could have expected ongoing studies to be more numerous. A number of sites are planning to engage in a research effort in the foreseeable future, however.

For the time being, some trends emerged and have been discussed, giving preliminary indications of directions to site managers and interpreters. They are not finite. They show a need and an interest. Moreover, one must always keep in mind that research remains a continuing need in reviewing and improving this as any discipline.

The basic purpose of this study was to investigate and define the present state of literature and research in the field of historic site interpretation in the United States. Based upon the findings of the literature search and the survey questionnaire, the following recommendations are suggested for future research:

1) To continue research and development of innovative methods to assess visitors' needs, satisfaction, cognitive growth, and changed attitudes as well as changed behavior in order to improve the learning experience on the site;

2) To examine non-traditional methods of interpretation such as living history. At the same time, interpretive methods developed must aim at increasing visitors' participation in the activities, along with keeping environmental impacts on the resource to a minimum;

3) To develop more sophisticated research processes, relying more on primary sources of information and the development of a research documentation system including good methodology skills;

4) to gain a better knowledge of the historical events while integrating recent changes in historical thinking and historiography;

5) To develop better communication links between historic sites and museums on a national level for the exchange of research results; and,

6) To implement changes recommended at sites where studies have been completed.

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EVALUATION OF INTERPRETIVE SERVICES: WHAT DO WE KNOW IN 1990?

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ABSTRACT: Existing research on impacts of interpretation on visitor understanding and appreciation and resource protection is reviewed and evaluated. Suggestions are made for future research.
KEYWORDS: impacts, evaluation, research.

EVALUATION OF INTERPRETATIVE SERVICES

Although calls for research on the effects of interpretation have been ongoing for over 15 years (Putney and Wagar 1973, Wagar 1974, Hodgson 1979), research that evaluates interpretation has been sporadic at best (Mullins 1984, Ham 1986). Mullins (1984) and Ham (1986) attribute this state of affairs to problems with philosophical orientation.
One has only to read the diverse opinions reflected in Machlis' (1987) collection of essays on interpretive evaluation to understand the problem. Interpreters as a profession feel they are doing something good. How can you measure the **"gleam in a visitor's eye"** (Tilden 1967) and what does it mean if you do?

There is still a great deal of disagreement about what interpretation is or should be (Vander Stoep 1990). Stereotypes abound. Managers often feel interpretation should serve the direct management function of controlling visitor behavior.

However, the philosophical view of the interpretive profession supports a more indirect approach. This philosophy can be traced to the oft-quoted axiom from the National Park Service manual of the 1930's:

> Through interpretation, understanding; through understanding, appreciation; through appreciation; protection." If visitors understand the value of the resource, they will protect it and so, understanding and appreciation are the primary goals of interpretation.

PURPOSE AND GOALS OF INTERPRETATION

The issue of the purpose and goals of interpretation is very pertinent to questions of impact of these activities on visitors. The result of the interpretive tradition has been a sense that there is no real need to quantify the impacts of interpretive activities and, indeed, that is not feasible to do so (Mullins 1984).

There has been a reluctance to evaluate the actual impacts of interpretive services. As a result, we do not have a clear idea of the relationships between visitor information and visitor knowledge of the resource, visitor attitudes toward the resource or visitor behavior.

If agencies are to continue to invest resources in interpretive services, we must try to determine if these services accomplish the overriding philosophical goals of creating understanding, appreciation and protection. It is 1990 and we have been practicing interpretation for over 70 years. What do we know about our impact on visitors?

IMPACTS OF INTERPRETATION ON VISITOR BEHAVIOR

Studies of the impacts of interpretive services on visitor behavior can be divided into three areas: knowledge (understanding), attitudes (appreciation), and overt behavior (protection).

UNDERSTANDING

The tradition of interpretation has focused on visitor understanding as a precursor to appropriate behavior. Understanding has been commonly defined as learning. Does knowledge increase as a result of interpretive encounters? Studies indicate that sometimes visitor knowledge increased (Kuehner 1978, Nielsen and Buchanan 1986) and sometimes it did not (Bernardi 1973, Gebler 1978, Mahaffey 1969, Peart 1979, D'Amico and Pokorny 1990). Other studies have compared the effects of different media on visitor learning.

Screven (1975) found that visitor learning increased through the addition of adjunct devices that encouraged visitor involvement such as tape players and booklets. Cassette tapes increased both enjoyment and short term retention of trail information compared with signs and leaflets (Wagar 1976). A guided tour and an automated slide program were equally as effective at increasing visitor knowledge of fire ecology (Nielsen and Buchanan 1986).

Visitor knowledge increased for visitors accompanied by trained river guides (Bobinski 1983). It is difficult to interpret the results of these studies.

First, there has been little concern with whether the knowledge gained by visitors is related to understanding or appreciation. Learning may be a precursor to understanding, but is knowledge gained learning? And is learning understanding?

Second, the focus has been on short term retention of information with little pretesting to control for existing knowledge. With few exceptions, those studies that used control groups did not test the same people before and after exposure to interpretive messages. The difficulties of doing this in a recreation environment are acknowledged. But to be meaningful, increases in knowledge must be placed in the context of the structure of individual knowledge.

THE STRUCTURE OF VISITOR KNOWLEDGE

A few studies have tried to look at the structure of visitor knowledge and evaluate impact based on changes in cognitive structure. This research is based on the concept of cognitive schemas. Cognitive schemas are the ways that existing knowledge is organized. Schemas give meaning. They tell the observer what to expect, what to select and how to deal with incoming information. When a schema is not available, an individual cannot understand specific behaviors or information (Mandler 1984).

Visitors do not come to interpretive experiences with a blank slate (D'Amico and Pokorny 1990). A review of museum, science center, zoo and aquaria literature reported by Koran, Longino and Shafer (1983) suggests that visitors without prerequisite knowledge or learning intentions are unlikely to learn from exhibits.

Lee and Uzell (1980), in a study of visitors who toured interpretive displays and heard interpretive programming at British farms, suggested that these interpretive experiences were effective in enlarging and increasing the accuracy of the cognitive schema people have about British agriculture. Through pre- and post-visit testing, they suggested that such gains can be relatively long term.

Fothergill, et al. (1978) used this approach to study the effectiveness of visitor centers in making long term additions to people's understanding. By comparing the comprehension of first time versus repeat visitors, they concluded that schema were not being adjusted to allow the accumulation of new information. Visitor centers were most effective for those who were already aware of and had an existing cognitive schema about the countryside.

Hammitt (1984) suggested that the concept of familiarity could be used to evaluate interpretive efforts. His rationale was that interpretation is really a method of familiarizing people with environments rather than a formal approach to education. If that is true, then an evaluation method that tested familiarity rather than information recall would be appropriate.

When ability to recognize signs rather than recall information was used as a measure of interpretive effectiveness, Hammitt (1984) found that 73% of hikers were familiar with or able to recognize 70% of the content of the messages. The value in this approach lies in the reconceptualization of the educational purpose of interpretation that brings these activities in line with the cognitive process of familiarity.

Effectiveness would not be measured as short term knowledge gained or attitude change but rather as a step in the long-term process of cognitive mapping. Some might suggest that this requires a paradigm shift on the part of interpretation. However, it actually involves a reorientation back to original philosophies laid out by Freeman Tilden (1967) who suggested that the task of interpretation was to assist visitors in accessing the environment through revelation, not information.

"MINDFULNESS."

Moscardo (1988) attempted to develop a cognitive model of visitors based on the concept of "mindfulness." Visitors will learn something in an interpretive encounter only if they are in active state of mental processing and this state cannot be assumed. Past research on mindfulness has suggested factors that indicate a mindful state (Bandura, Langer and Chanowitz 1984). Moscardo (1988) looked at the relationship between exhibit design features based on these factors and visitor satisfaction. Results indicated that visitors were more satisfied with exhibits that facilitated mindfulness.

INTERPRETIVE EFFECTIVENESS

Lipman and Hodgson (1978) defined interpretive effectiveness as whether visitors were provoked to learn more. They found that the addition of interpersonal interpretation to a self-guided cave tour significantly increased the number of questions visitors asked after the tour.

Others have examined the relationship between enjoyment and learning in the interpretive experience. Roth and Hodgson (1977) proposed that pleasure contributes to accomplishing the goals of interpretation: learning and a positive valuation of the environment. The environmental psychology literature suggests that the more environmental detail a person is aware of, the more pleasure they derive from the environment.

Roth and Hodgson conducted an experiment to see if perception training increased both the pleasure derived from an interpretive experience and environmental awareness. Perception training was found to increase both pleasure and environmental awareness.

INITIAL PROGRAM

Knopf (1981) studied the relationship between the formation of cognitive maps by visitors and perceived understanding of educational materials at a national military park. He found that visitors who attended an initial program that oriented them historically and spatially to the Battle of Gettysburg perceived the events of the battle more clearly than those who did not.

In the middle 1970's, sociologists interested in outdoor recreation began to look at the role of social groups in influencing outdoor recreation behavior (Field and Cheek 1974, Field and O'Leary 1973). Some of these studies included participation in interpretation as a variable and demonstrated that social group was important in these activities (Dottavio, O'Leary and Koth 1980). A study of family camping found that family type was related to use of interpretive services (Machlis 1984).

Studies of elderly recreationists found that associating with friends and family is an important motivation for participation (Guinn 1980, Bultena, Field and Renninger 1984). Elderly national park goers enjoyed interacting with their peers and so found formal, structured interpretive programs unsatisfactory (Bultena, Field, Renninger 1984).

GROUP INTERACTIONS

Kuehner's (1978) observation study of trail users showed that group interactions were important in how people interacted with interpretive media. In groups with children, one adult from the group read from the trail booklet, often editing the information.

These observations were supported by Trotter (1990) who observed that one adult in a group read the trail guide or signs aloud for the rest of the group. Transcripts of visitor conversations in British Museum of Natural History also demonstrated the same behavior. One group member read exhibit text aloud. This behavior was noted in both all adult and child/adult groups (McManus 1989). The importance of social interaction in directing visitor attention was demonstrated by Koran, et al. (1988).

They observed that visitor attention to exhibits (i.e. listening to headphones, stopping to examine exhibits in more detail) could be significantly increased by the use of a model who demonstrated these behaviors for visitors. Initial adult visitor behavior is cautious. They are more likely to participate in exhibit activities when they observe another adult engaging in these behaviors. The behavior becomes socially appropriate (Koran, Koran and Foster 1989).

SOCIAL INTERACTION

The above studies present strong clues that social interaction plays an important role in interpretation. However, these clues have not been followed by systematic research on the role of social groups in understanding the impacts of interpretation. Almost all studies of interpretive impacts have dealt with individuals. We have essentially been studying impacts out of context by concentrating on individual behavior. It is common, for example, to see demographic variables correlated with knowledge gained or attitudes changed (Risk and English 1983, Cable, Knudson and Theobold 1986, Olson, Bowman and Roth 1984).

SOCIAL GROUPS

Social groups are important in understanding recreation behavior. Social facilitation effects are also extremely important in any communication situation (Miller and Burgoon 1978, Rogers and Kincaid 1981). We need to take the structure of information exchange in visitor groups into account when developing and evaluating interpretive services.

The literature is replete with studies that indicate that people do not attend to most interpretive offerings. Many exhibits are skipped altogether by visitors (Beer 1987, McDermott 1987). Exhibits with audiovisual components attract visitors but few stay until the end (Beer 1987, Landay and Bridge 1981). Slide tape presentations hold people for approximately 35 seconds (Alt 1979). Studies in outdoor recreation settings support these museum findings. Only 30% of the visitors to the Chicago Botanical Gardens were observed reading the signs (Korn 1987).

TRAIL BEHAVIOR

In a study of trail behavior, Kuehner (1978) found that people listened to only one of three 30-second messages. In addition, they spent 30 minutes on a trail with 14 stops (approximately 2 minutes per stop). Studies of exhibit viewing time repeatedly conducted from 1928 indicate that people spend very little time looking at exhibits. Viewing times range from 10-40 seconds (Beer 1987, Clowes and Wolff 1980, Coleman 1939, Linn 1983, McDermott 1987, Meis, Davis, Drake and Szigeti 1981, Nelson 1946, Robinson 1928, Rosenfeld and Turkel 1982, Screven 1974).

Shiner and Shafer (1975) found that visitors spent from 15%-64% of total viewing time required to read forest-oriented exhibits. Lime (1979) found that visitors to a U.S. Forest Service visitor center spent little time looking at exhibits. In addition, approximately half of those who started to walk the one mile nature trail did not go the whole way.

GREAT SMOKY MOUNTAIN NATIONAL PARK

Peine, et al. (1984) studied use of interpretive media by visitors to Great Smoky Mountain National Park. Managers felt that the park newspaper was a powerful vehicle for communication with visitors but only 11% of visitors used it. Zoo exhibits, especially those with active animals, held attention somewhat longer although viewing times were still short (Bitgood, Patterson and Benefield 1988).

Even visitors whose stated motivation was to learn did not spend any longer than others looking at exhibits (Beer 1987). The assumption behind these studies is that visitors are not gaining anything from interpretive media because they spend such little time interacting with these media. A great deal of time and effort has been spent in trying to get visitor attention and increase viewing time. However, no clear link between preferences for specific interpretive services and learning has been established (Moscardo 1988).

McManus (1989) recorded visitor conversations and found that most visitors do read texts although this is hard to assess through visual observation. A study of forest trail users found that 92% of hikers said they read at least one half the signs on the trail while 69% said they read all the signs (Keyes and Hammitt 1985).

Koran, Koran and Foster (1989) suggest that we spend too much time in informal learning environments worrying about influencing visitor behavior and not enough trying to understand how visitors process information. We need to look more carefully at how people are interacting with information during interpretive encounters. Only then can we provide interpretive activities that facilitate these processes.

APPRECIATION

The second goal of interpretation is to increase visitor appreciation. In most cases, impacts on appreciation have been operationalized as attitude change. One often reads in the literature that the purpose of interpretation is to change attitudes. However, it is very difficult to find studies that actually evaluate attitude change.

A few studies have demonstrated that visitors exposed to interpretive programs had a more positive attitude to various management practices (Nielsen and Buchanan 1986, Olson, Bowman and Roth 1984). Other studies contradict these findings (Cherem 1982). Kiely-Brocato (1980) studied visitor beliefs and attitudes relative to resource use and management using Fishbein's expectancy-value model.

VISITOR ATTITUDES

Visitor attitudes are constructed of both a belief about a particular policy and evaluation of that belief. She demonstrated that this was true and proposed that for an interpretive message to positively affect attitudes, it must address both the effective and cognitive component of the attitude toward a policy. She emphasized the importance of the structure of the interpretive message. She did not, however, evaluate the impact of different interpretive messages on visitor attitudes.

Cable, et al. (1987) also used Fishbein's model to evaluate the impact of existing messages on the belief and evaluation component of attitudes. They concluded that visitor attitudes were changed by these messages. However, while they looked at the belief and evaluation components of attitudes before and after the visit, they did not link this with belief and evaluation components of the message as recommended by Kiely-Brocato.

EVALUATING ATTITUDE CHANGE

The majority of work evaluating attitude change as a result of interpretation suffers from problems similar to knowledge studies. The interpretive messages themselves are essentially a **"black box"**. Cable, et al. (1987) serves as a good example of the situation. In that study, attitudes were measured before and after people visited a visitor center. Not only were the same people not measured before and after the treatment, there was no control over the messages they received.

The experimental treatment was **"interpretation"** which includes many different messages incorporating verbal cues, nonverbal cues, source credibility factors and group influences, just to name a few. Without control over the treatment, it is impossible to assign causality as most of these studies do (Cook and Campbell 1979).

Some authors have defined appreciation as enjoyment. The premise is that enjoyment is a precursor to learning. Keyes and Hammitt (1985) found that 90% of hikers along a long distance trail felt that the presence of informational signs improved their experience.

Several studies have compared actual visitor enjoyment with interpreter/staff perceptions of enjoyment and found that activities that visitors enjoy the most are not the ones that interpreters think are the most enjoyable (Ham and Shew 1979, McDermott 1987).

A study of visitors to an urban nature center found no difference in enjoyment across different methods of relating information (traditional natural history information, use of analogies, or urban examples) (Fritschen 1980, Fritschen and Stynes 1980).

PROTECTION

In recent years, there has been an increasing concern with the use of communication to encourage appropriate visitor behavior. Some research has looked at the impacts of various interpretive services on actual visitor behavior. The focus has been on which approach or communication channel is more effective.

Studies of the use of brochures to redistribute use have had mixed results (Krumpe and Brown 1982, Lucas 1981, Lime and Lucas 1977). Generally, brochures were more effective when distributed early in the visitor decision-making process. Brochures in combination with personal contact were more effective (Roggenbuck and Berrier 1982). However, several studies found that even though people had a brochure in their possession and claimed to have read it, this did not actually change their behavior (Fazio 1979, Cella and Keay 1979, Gallup 1981).

SIGNING

Signing can be used to redistribute use and increase appropriate visitor behaviors (Petersen

1985, Lucas and Kovalicky 1981, Nelson 1979). Recent studies indicate that computerized information is effective at changing visitor behavior (Huffman and Williams 1987). Variables that are common across many of these studies are timing of information, user group differences, setting characteristics, mix of channels, and message/source characteristics (McDonough 1987).

This makes sense as these are the variables that appear as significant throughout the persuasion literature (Petty and Cacioppo 1986). However, while there are many commentaries in the literature on the use of interpretation to manage visitor behavior (Sharpe 1989), the research results are fragmented. It is very difficult to find any discussion of these results set in the broader context of the persuasion literature. We also have no idea whether these behavior changes are long term.

THE IMPACTS OF INTERPRETATION

When all is said and done, what do we know about the impacts of interpretation on visitors? There is some evidence that participation in interpretive services increases visitor enjoyment, can diversify the structure of existing knowledge, can adjust attitudes and, under certain circumstances, can alter visitor behavior.

But, although we have been delivering interpretive services to visitors for over 70 years, we still do not really understand the nature of these impacts. Why do they occur? Can they be replicated? We have focused on the interpretive services themselves rather than on understanding how visitors think and act in interpretive environments (Koran, Koran and Foster 1989).

THE WEALTH OF KNOWLEDGE

As a profession we have come to a point where we must begin to rely on the wealth of knowledge available in the communication, sociology, social psychology and psychology literature that can help explain the results we see from our efforts. Interpretation is unique in many ways.

Understanding the process of interpretation could broaden the scope of understanding all human communication. But we also must look at commonalities with other forms of human communication. If we are to interest scientists in considering interpretation a serious area for study, we must stop hedging about the value of research and evaluation. Good research is the only road to effectiveness.

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INTERPRETING LANDSCAPE FUTURES

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ABSTRACT: Landscapes are repositories of history and signposts of the future. Landscapes do not stay static, yet, in British national parks, public policy and public preferences try to keep them in a state of suspended animation. Over the next twenty to thirty years, agricultural and forestry policies in the European Community could transform the upland moor and meadow landscapes that make the UK national parks so famous. This paper describes and evaluates an interactive experiment in participatory interpretation in the Yorkshire Dales National Park. It suggests that interpretative techniques can be used to create images of possible future landscapes that promote awareness, understanding and concern amongst the participating population for landscape futures and for changes in policy and financing.
KEYWORDS:.Interpretation, participation, planning, land use management

THE MEANING OF LANDSCAPE

The famous English landscape painter, John Constable is reported to have commented

> There has never been an age, however rude and uncomplicated, in which the love of landscape has not in some way been manifested (quoted in Drabble, 1984, p.17).

The British perceive their rural landscapes as symbolic syntheses of geology, history, land use tradition, and beauty. The landscape provides a tangible link with all that has gone before—all the more so if that landscape is skillfully interpreted so that its past can be translated into the sentient present (for a good review of all this see Blunden and Curry 1989, Newby 1989). The countryside in Britain has always been in a state of flux. Invasions, wars, agricultural and industrial revolutions, the ubiquitous presence of technology, all coupled to changing patterns of land ownership, have seen to that.

One hundred years ago, much of the apparently tranquil farmed uplands of today would have been unrecognisable. Industry and unsightly economic activity were everywhere—mining, quarrying, lime spreading, and all manner of transportation scarred a landscape that was much more densely peopled than it is today. (For an excellent history of agricultural Britain, see Holderness 1985).

THE LANDSCAPES OF BRITAIN

The landscapes of Britain essentially evolved in the past two centuries and are based primarily on upland agriculture, moorland game management, woodland usage or neglect. These landscapes are treasured because they are stunningly beautiful, they provide large open areas for public access, and they evoke a direct sensory experience with past societies and economies.

National park landscapes in England and Wales are particularly special. National parks were established in the early 1950s following the passage of the National Parks and Access to the Countryside Act of 1949.

They were selected because of their natural beauty, their scope for public enjoyment, and the traditions of farming that helped maintain a blend of the natural and the cultivated in upland areas (see McEwen and McEwen (1987) for a vivid analysis of the UK national park movement).

YORKSHIRE DALES NATIONAL PARK

National Parks in England and Wales

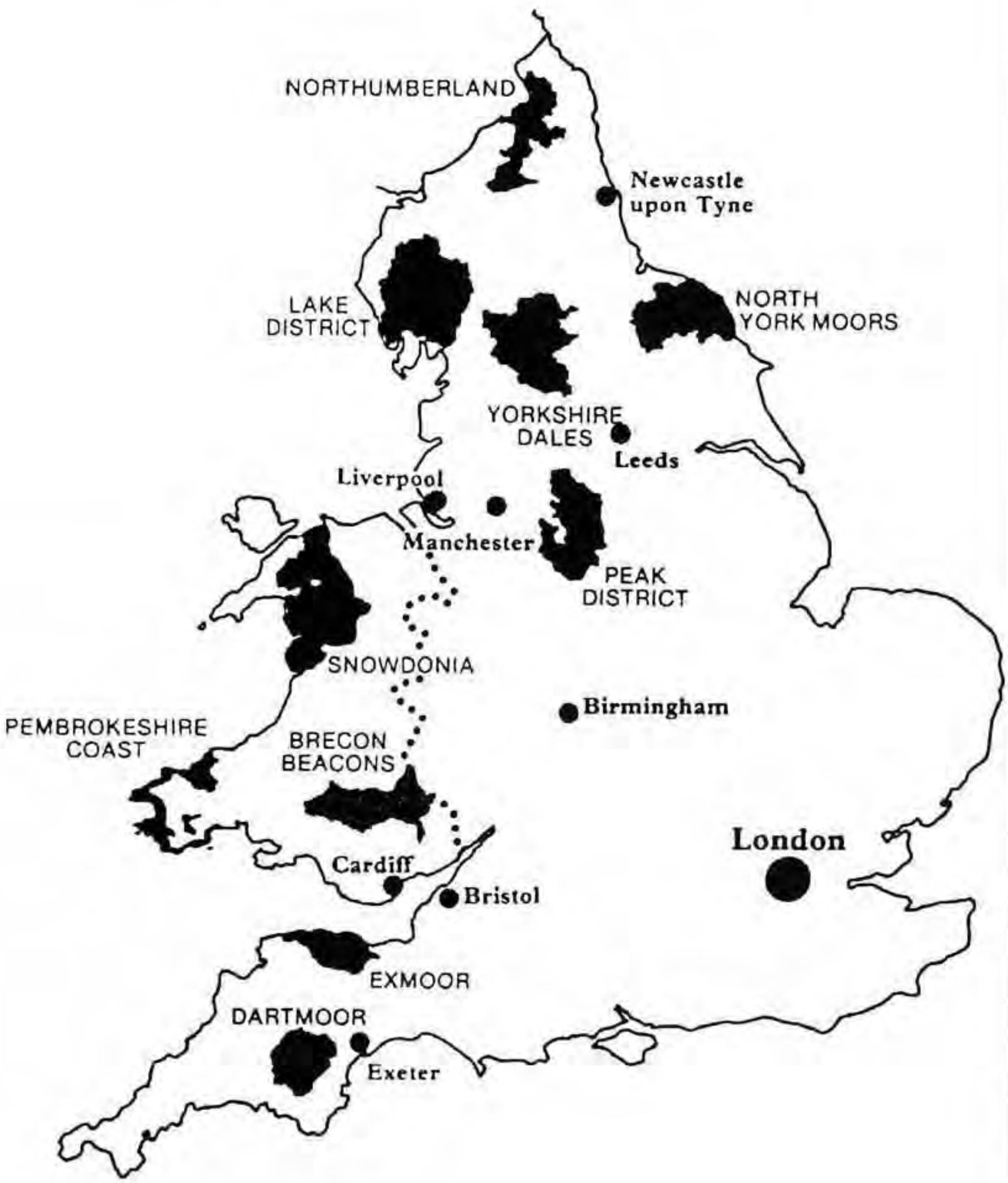

Figure 1

is being conducted, the valleys (dales) are characterised by stone fieldwalls and barns, often very densely distributed, by naturally fertilised meadows full of wild flowers and other plants, by woodlands of oak, birch, lime and ash which house many species of birds, butterflies and woodland vegetation, and by heather moorland burned and grazed to host sheep and grouse.

In their complete form, the Yorkshire Dales provide the quintessential landscape of traditional upland England (see Fig. 1). Because of that, these landscapes are especially prized, and it is part of the duty of the National Park Authority, coupled with other public agencies, to try to protect them for future generations to enjoy, (for a good statement of national park philosophy, see McEwen and McEwen 1987).

The landscape therefore provides the observer with a sense of continuing between the past and their hopes for the future. The landscape also represents a physical link between the landowner, the taxpayer and the policy manager. The modern rural landscape is very much the outcome of policy as well as the result of choice by landowners, mediated by planning controls over the siting and design of buildings.

As a result, three groups or actors—the *landowners and tenants*, the *taxpaying public* (some of whom may never see the particular landscapes involved but who gain satisfaction from the knowledge that such landscapes are protected for them and their children always to enjoy the option of sometime appreciating such landscapes) and the *policymakers*—need to interact in order to make considered choices about landscape futures. A channel through which that interaction could be fostered is participatory interpretation.

INTERPRETATION PARTICIPATION

Interpretation is not conventionally considered as part of a process of participation guiding future land use management decisions. Most analysts accept the model of interpretation advanced by Tilden (1957) and summarised in Fig. 2. Tilden argued that the interpretative experience was based on three stages—*awareness*, of what characterises landscape, *appreciation* of why landscapes are beloved, and *concern* for their protection. If landscapes can be understood properly, they will be appreciated for the aesthetic, spiritual and educational experiences they convey; and, ultimately, they will be protected.

Fig. 2. Tilden's model applied to the research project.

INTERPRETATION

to create understanding
of ***landscape evolution and genesis***

⇓

leading to appreciation
of ***landscape changes*** in the past
and ***potentially into the future***

⇓

creating a desire for its protection

There has been a tendency to allow the interpretative experience to be a passive activity. The public is "told" how landscapes are formed and evolve, and are "informed" about what the authorities are doing to safeguard them on the public's behalf. Attractive displays of images and text provide the basis for this "storytelling". (For a good review, see Aldridge 1989).

This view is not universal and in recent years there have been strong pleas for interpreters to address critical resource issues, with the implicit need for dialogue and feedback, calling for a much more lively interactive form of interpretation (Wood 1986, Beckmann 1987, McNeely 1989). Indeed, William Penn Mott Jr (1986), Director of the US National Park Service, has written:

> By providing the public with accurate information on the reasons behind our policies and programs and by providing a communication channel for the public to reach park management with their concerns interpretation can assist is developing the public understanding and support critical to the successful management of our parks (p12).

Yet whilst there have been many calls for a more dynamic form of interpretation that seriously addresses the resource management issues of the day, there have been very few documented programmes. Two recent attempts to evaluate this approach have been made by Knotts and Legg (1989) and Canter et al. 1989. neither of these studies is yet complete.

COMMON AGRICULTURAL POLICY

The research programme outlined here has aimed to extend further this approach (see O'Riordan et al. 1989 for a detailed exposition). To put the specific aims of the project into perspective, it is necessary to look at the changes that could alter the particular qualities of the Dales landscapes. The main influence is the Common Agricultural Policy of the twelve member states of the European Community based in Brussels. Britain joined this Policy in 1972, since when its agriculture has been transformed. In the uplands, where conditions are harsh and returns are low, the only way livestock production can be maintained is to subsidise each animal. This can be done either on a farm by farm basis, or by direct price support per livestock unit.

The Community prefers the latter course. As a result stocking densities have increased, and spare capital has generated a demand for efficient technology for silage production and intensified feeding programmes. Consequently, though the farmers can earn enough to stay on the land, they are fertilising the rich hay meadows, neglecting the field barns that once sheltered stock and feed, and abandoning their small woodlands due to lack of spare labour.

Livestock support subsidies are changing because it is no longer politically attractive to support over-productive agriculture (see Lowe, et al. 1986). One option for the European Community Agriculture Ministers is to lower or remove livestock subsidies altogether. This action would result in a reduced income for upland farmers. With no compensatory package of income support, many upland farmers might either suffer penury, and be forced to sell out, or abandon farming for other jobs but retain that land. In any of these futures the landscape would become neglected; the stone walls and barns would not be maintained, woodlands would became derelict, and the traditional hay meadows would be lost to artificial fertiliser or lack of care.

British government policy in recent years has shifted to support the environmentally conserving farmer, offering grant aid and special management agreements based on an annual acreage payment, so as to support income and retain traditional farming practices (for a good review see Blunden and Curry 1988). To date this environmental support policy has been implemented piecemeal and in only small parts of critically affected areas (see Potter, 1988).

Any decision to protect a whole national park will involve considerable adjustments in landuse policy, vast sums of public subsidy, and a very sensitive appreciation of the rights and interests of landowners, local residents, and the recreational visitor. Negotiating between these interests requires that acceptable landscape futures are identified, and the means to appreciate and understand them are adequately provided.

The research project reported on here was an experiment in participatory landscape interpretation. Its aims were three fold

(i) to assist the public to understand, or be informed about, how and why the Dales landscapes are changing.

(ii) to provide a device whereby the public could visualise how the Dales landscapes might look in the future, based upon plausible policy options faithfully reproduced in credible artistic representations.

(iii) to encourage people to register concern by indicating their preference for a particular landscape or landscape mix and to indicate that concern to policymakers

Fig.3 summarises a policy-based and participatory approach to choice-making over future landscapes. The process is to become a "communicative lubricant" between policy-analyst, the taxpayer and the landowner. It *explains* the forces at work resulting in change, *creates images* (mostly in people's minds, but also by physical means such as game playing and painting possible landscapes), and *elicits response* from participants. The aim is to link awareness, to appreciation, through concern, to expressions of solidarity and support for those whose actions and policies will shape the landscapes of the future.

The experiment was initiated by the University of East Anglia, financed by a grant from the independent Economic and Social Research Council, in close cooperation with the Interpretation and Information Branch of the Yorkshire Dales National Park Authority. The whole scheme is designed as a two year experiment.

The first year was exploratory, the second consolidative, based on the experience gained. The experimental nature of the project was emphasised throughout. At no time was it ever suggested that the results of the public responses would actually dictate the Park Authority's future policies.

Figure 3. Tilden's model extended as the basis of the current interpretive experiment.

INTERPRETATION

⇓

to develop ***understanding*** of the special qualities of the site

⇓

leading to an appreciation of its value

⇓

leading to improved ***awareness of threats*** and ***concern for its future***

⇓

stimulating a desire to ***participate***

⇓ ⇓

through modifying personal behavior | through active expression of support

⇓

leading to

enduring landscape protection and appropriate management

The test of this experiment, therefore, was the degree to which the innovative interpretive approach prompted understanding amongst participants with relatively little prior knowledge, stimulated in them sense of concern for the future of the National Park, and generated amongst them a willingness to support, or participate in, policies that would result in particular landscape futures being safeguarded or created. In this sense, this particular approach to interpretation was political as well as educational, because value preferences were being stimulated, and communicated to those responsible for landscape change.

THE INTERPRETIVE EXPERIMENT

The experiment is programmed to last three seasons. It consists of ***four*** stages.

•**1.** Interviews with all those responsible for determining or carrying out landuse policy measures for agriculture, forestry, game management, tourism, countryside planning and conservation. These interviews helped to identify the main trends in landuse policy change and the likely impacts on the land and on local economies.

These interviews were conducted with representatives of agriculture forestry, national park planning, countryside recreation, nature conservation, tourism, and archaeological heritage. Each representative was a senior policy advisor for the region involved. All of these people were familiar with current policies regarding landuse in their zone of responsibility, as well as likely future policy changes.

The interviewees were asked to visualise how landscapes might change under plausible policy futures. They were shown images of various landscape futures and were asked to comment on the faithfulness and representativeness of the images offered.

•**2.** Interviews with farmers, tenants and other landowners to ascertain how they viewed the future, what forces influenced their landuse decisions, and how the changing economics for agriculture were likely to alter their management decisions. These interviews also helped to clarify points made in interpretative texts for displays and leaflets.

These were intense interviews, of a small number of farmers who were representative of the different mix of farming interests involved, as well as the different geographies of the Dales.

•**3.** The production of a conventional panel display to illustrate all the changes likely to affect future landscape, plus painted images of seven landscape futures, as well as a "game" in which participants could create in their own mind landscapes based on walls-barns: hay meadows: woodland: moorland: and public access, and compare these with the painted images.

The text of all these interpretative approaches was approved by the policy and farming interviewees. The text was changed in the second year of the experiment to ensure the elimination of bias, as far as possible.

•**4.** An evaluative phase of questionnaires and informal response, conducted in two stages of the evolving display to examine how far the aims and objectives of the experiment were being met. At the time of writing, only the first phase of this evaluative programme is complete.

This consisted of a series of self completed questionnaires filled out by participants at five venues during the period August 1988 to December 1989. In all 194 questionnaires were completed. These were complimented by 34 interviews randomly selected from the same populations as a control over possible bias over self selection.

IMAGES OF FUTURE LANDSCAPES

Seven images of future landscapes were depicted, arising out of the interviews with policymakers and landowners. Three portrayed outcomes that would take place on a farm by farm basis, in response to particular policy futures, but with no sense of the landscape whole. Four suggested how a future landscape might look if particular policies were pursued on a ***"whole dale"*** basis, where farms cooperated to produce a more unified perspective. The first three portrayed a mixture of neglect, neglect and intensification, and intensification in upland agriculture, most of which would be induced by changes in the agricultural price support policies of the European Community.

Four subsequent landscapes depicted how a whole dale might look under very different mixes of policies, economies and politics. One was a partially conserved landscape where only some selected walls, barns, meadows and woodlands were protected. A second was a totally conserved landscape where all major elements of traditional landscape features were preserved via the public purse. A third depicted a leisure landscape of sporting and recreational enjoyment based on private capital investment.

The final picture depicted a wild landscape of natural vegetational succession created by the buying out of small farms. These latter landscapes would result from a mixture of European Community policies, compensating UK government actions, and land use management decisions taken in the Park. All of seven landscapes were painted in a similar daleside backdrop by the same artist.

The complete display, which consisted of detailed interpretative panels, a video programme, explaining the key policy measures, and depicting three of the landscapes the floor game and the imaged paintings, was taken around the Yorkshire Dales National Park between September and December 1989. In all some 6000 people visited the exhibits.

A revised version of the display, with a new leaflet and video, and changed wording designed to reduce the the possibility of bias, was run during the summer of 1990. Another evaluation questionnaire survey was also administered during the summer of 1990 with the questionnaires being handed out on a random basis for subsequent self completion.

All questionnaires were checked for completeness. Following this second phase of evaluation, a more permanent display will be mounted in the Park, with further changes to reflect policy changes and public preferences. This offers a valuable tool in the process that is geared to produce a new National Park Plan. That plan is the basis of future planning and policy decisions by the Yorkshire Dales National Park Authority, and has statutory force. In this way interpretation can become an integral part of the participatory process aimed at planning the future.

RESULTS OF PHASE ONE EVALUATION

What follows is a brief resume of the main findings of the first phase of the evaluative programme. The participants were analysed in terms of whether they were residents of the Park, or visitors, how much prior knowledge and concern they expressed and how far their occupation recreation experience or other indices of political activism influenced their views.

The group of participants interviewed during the this phase of the study tended to be knowledgeable, articulate, better off and active recreationists. This is a particular characteristic of visitors and park users who enjoy the Dales during the latter part of the year when the main tourist season is over. In a sense, therefore, the group analysed in this phase were the most discerning and potentially the most critical of any flaws in the exhibit. Hence the decision to focus phase one during this period.

The results showed that those who responded to the self completion questionnaire were disproportionately from the professional, service and skilled trade social groups, with above average incomes and an active recreational profile. Over half (50%) were from professional occupations, (compared to 23% further nations as a whole) and over three quarters (76%) walked or enjoyed specialised recreational pursuits such as rock climbing or caving (compared to only 25% for the nation as a whole). Furthermore 63% were members of at least one environmental organisation, compared to 5% for the nation as a whole. Over two thirds (70%) visited the park at least several times per year.

This particular profile was not a function of self selection. To test for respondent bias, a 17% sample of visitors was interviewed on a random basis. Subsequent statistical analysis revealed no significance between the two population samples. The group involved were very active, interested and articulate. Table 1 shows that over half were fairly well informed about the forces changing dales landscapes before visiting the exhibition, and Table 2 indicates that about half expressed a high degree of concern before they came to the interpretative package. This was a tough group to please: yet the group provided a very good test for the first phase of evaluation.

Table 1. Degree of prior information before visiting exhibition

	Not informed	Fairly well informed	Well informed
Community	12.1	65.2	22.7
Landscapes	13.0	55.4	31.5
Land use	6.5	60.7	32.8
Role of National Park Authority	23.9	52.7	23.7
Who decides the future of the park	47.8	41.7	10.4

Table 2. Level of respondents' prior concern over dales future (%).

	N	%
Community	13	65.2
Landscapes	79	55.4
Who decides the future of the park	95	41.7

Table 3. What respondents did at the exhibition (%).

Activity	%
Read display	98.9
Studied paintings	97.8
Picked up leaflet	95.7
Watched the video	82.4
Played the game	60.8

Over three fifths participated in all four aspects of the exhibit (display, video, game paintings) with almost all reading the display and looking at the paintings (Table 3). It was the combination of all these features that appeared to have the full impact. Participants did not distinguish between the elements. The exhibit was regarded as a whole.

Each of the four elements of the exhibition, namely the interpretation display panel, the video, the game and the landscape paintings were evaluated on the basis of how much they provided information, how much they created awareness, and how much they elected concern amongst the respondents.

In general the exhibit met the project aims, with around half indicating that the experience had assisted in improving understanding and in helping to image future landscapes (Table 4). However, more were sceptical that the exhibit would assist decisionmakers in making better choices, since they did not believe that any single group of individuals had sufficient power, even at the level of government, to safeguard the really cherished landscapes.

This healthy skepticism reflects awareness that the European Community passes judgement without regard to the interests of particular member states regarding the future of the rural economy, and the fact that there are many UK land use and economic policy agencies involved in the management of the countryside, agencies which are neither coordinated nor particularly visionary.

In general the display and the paintings scored highest on all three variables (the display contained the paintings, though the paintings

Table 4. Degree of prior information before visiting exhibition

	Not at all	A little	A reasonable amount	Very much so
Aid in understanding forces shaping the Dales landscapes	1.1	5.9	47.1	46.0
To help picture future Dales	0.0	5.9	43.3	50.8
To assist decision makers	6.5	23.7	43.0	26.9

Table 5. Impact of exhibition on respondents' concerns.

	N	%
More concerned	100	53.5
No change	86	46.0
Less concerned	1	0.5

Table 6. Level of respondents' prior concern over dales future (%).

	N	%
Not at all	13	7.0
Slightly concerned	79	42.2
Very concerned	95	50.8

were also presented separately). However, in every case, there were noticeably improved ratings of awareness, enjoyment and concern amongst participants compared to their stated positions prior to coming to the exhibition. Overall, over half were made more concerned over the Dales future landscapes (Table 5) even though half were already highly concerned (Table 6)

Perhaps of greater interest lies in the cross tabulations between those who entered the exhibition less informed and aware, and those who were already pretty well involved in landuse change. Statistical analysis of visitors versus residents and those less well informed and concerned at the outset showed a significant shift in favour of the schemes outlined in Figure 3. This is proposed as a *convergence thesis*. Figure 4 illustrates the point, and Table 7 summarises the results. It appears that the exhibit specifically activated those lower down the learning curve on awareness, information and concern, so that, even in a typical stay of 45-90 minutes, participants genuinely appeared to have progressed in terms of the Tilden triad of awareness, appreciation and concern. If this is the case, then the project fully met its interpretative aims.

THE NEXT STAGE

The summer of 1990 will be devoted to altering the wording of many of the displays, to test for the significance of bias in the presentation of information. In addition, more accurate representations of the relative costings of maintaining various landscapes will be provided, both for the public sector, and for the private landowner. Thirdly, the exhibit will be taken beyond the boundaries of the Park to find out how far it meets its aims for people who are not necessarily sympathetic to national park values. All of these developments will be evaluated via a self completion questionnaire and a control random sample.

In the longer term it should be possible to create images of global change futures where, say, coastal areas could be depicted via computer graphics and allowed to alter according to various scenarios of climate warming, sea level rise and coastal management policies. The software is essentially in place, so it should be possible for participants to "bid" for their own package of climate change response policies (taxing carbon, eliminating chloroflurocarbons, subsidising energy conservation, planting trees) to see just what they get for their additional investments. Similarly agricultural impacts of global warming could be presented as interactive computer graph packages, as could more prosaic land use futures to do with settlement, transport, forestry and nature conservation.

The possibilities are endless so long as the process combines policy choice to meaningful and credible landscape futures based on the best science and forecasting, and that everyone involved regards the exercise primarily as an interpretative and educational experience of great intensity and enjoyment, as well as a useful *guide* for political judgement.

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INTERPRETATION AS A MANAGEMENT TOOL: A NATIONAL STUDY OF INTERPRETIVE PROFESSIONALS' VIEWS

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ABSTRACT: A survey questionnaire was mailed to a national sample of environmental interpreters in order to better understand perceptions of and use of interpretation as a management tool (IMT). The vast majority of respondents (82.2 percent) reported that they were current adopters of the IMT innovation. Perceived constraints within respondents' organizations, rather than respondents' individual perceptions of the innovation, were reported to be the primary factors limiting further adoption of IMT. Respondents expressed considerable interest in IMT training; only about half had received such training.
KEYWORDS: adoption, characteristics of innovations, diffusion, environmental interpretation, innovation, interpretation as a management tool, training.

INTRODUCTION

Traditionally, environmental interpretation programs have been designed to serve two functions: education and recreation (Washburne and Wagar 1972, Griest 1981, Field and Machlis 1985). More recent thinking suggests that the role of interpretation should be expanded (Vander Stoep 1988). In 1970, Ashbaugh proposed that "interpretation as a management device" was an accepted topic for interpretive research.

A few years later, Field and Wagar (1973: 12) wrote that interpretation should encourage visitors "to support the management and use of resources with reduced impact." However, it was not until 1976, when Sharpe published his widely-distributed interpretive text, that the idea of "Interpretation as a Management Tool" (IMT) received widespread attention from the interpretive profession. Besides serving the accepted education and recreation functions, Sharpe proposed that interpretation should also seek to "accomplish management goals" by encouraging thoughtful use of resources by visitors and by guiding people away from fragile or overused areas into areas that can withstand heavier use. Furthermore, he proposed that interpretation should promote public understanding of agencies and their programs.

Admittedly, some interpreters have incorporated management concepts into their programs for years; this is not a new practice. Yet, the idea of designing interpretive programs with the primary purpose of explaining management concepts is innovative (Roth 1978).

IMT'S TRACK RECORD

Although the interpretive literature is replete with stories of interpretation's contribution to helping solve management problems (Sharp and Gensler 1978, Freed and Stenman 1980), the number of empirical studies conducted under experimental or quasi-experimental conditions that document the success or failure of interpretation as a management tool is limited (Braley and Hanna 1980, Roggenbuck et al. 1982). This scarcity of empirical evidence may exist because managers often determine whether or not interpretive programs are effective by observing either visitor behavior or the condition of resources, rather than by collecting quantitative data (Freed and Stenman 1980).

Most of the empirical evidence that does exist supports the contention that interpretation can help solve management problems. For example, interpretation has been shown to be quite effective at minimizing visitor impacts (Feldman 1978, Fritschen 1984, Oliver et al. 1985, Vander Stoep and Gramann 1987). Interpretive efforts have also been effective in reducing littering (Clark et al. 1972, LaHart and Bailey 1975; Christensen and Clark 1983; Fritschen 1984; Oliver et al. 1985).

Studies on redistributing users through interpretive efforts show mixed results, however. Brown and Hunt (1969) reported that information signs were effective in distributing use more evenly between roadside reststops. Lime and Lucas (1977), Krumpe (1979), and Roggenbuck and Berrier (1981) concluded that interpretive efforts were successful in influencing wilderness visitors' choices of entry points, trails, times of subsequent visits, and campsites. However, Schomaker (1975), Canon et al. (1979), and Lucas (1981) described unsuccessful attempts at distributing wilderness use via interpretation.

EXPOSURE TO INTERPRETIVE MEDIA

Exposure to interpretive media increased visitors' knowledge of rules and regulations in Ross and Moeller's study (1974) of campers but showed little influence in Fritschen's study (1984) of boaters. Olson et al. (1984), Nielsen and Buchanan (1986), and Cathey and Legg (1988) showed that personal and nonpersonal interpretive approaches were effective in increasing visitors' knowledge of and support for the management policies of agencies. Fritschen (1984) noted that interpretation was effective in increasing boaters' compliance with some safety rules. In another study, however, Fritschen (1984) reported that interpretive efforts had no measurable impact on bicyclists' or motorists' behaviors and attitudes in a situation where conflict had arisen between the two groups.

FACTORS LIMITING IMT

Two empirical studies has documented the diffusion of IMT on interpretive sites. Braley and Hanna (1980) reported relatively high levels of adoption: over two-thirds of the natural resource managers and interpreters in their survey reported using interpretation as a management tool. Specific applications of IMT were reported as follows: providing for natural and cultural resource protection (51.8 percent), increasing public understanding of management goals (32.5 percent), and promoting a pleasurable, safe visitation experience (15.7 percent). In contrast, Griest (1982) reported low levels of adoption by U.S. Fish and Wildlife Service refuge managers and interpreters. The most common ways interpretive programs were used "to solve management problems or achieve management objectives" were: to avoid or dispel public controversy by increasing public understanding of management goals (reported by 16.1 percent of refuges), to promote conservation awareness in order to protect natural and cultural resources (8.8 percent), and to decrease visitor impacts (7.8 percent).

A number of factors may act as barriers to the diffusion of the IMT innovation. One such factor may be that people are simply not convinced that interpretation can help solve management problems. Griest's study (1981: 97) revealed that both managers and interpreters at U.S. Fish and Wildlife Service refuges were

> strongly convinced that interpretation serves the traditional—educational and recreational—functions and less convinced of the benefits of using interpretation as a management tool.

Site managers may be another barrier to the adoption of IMT. Many managers have little or no training in interpretation and, therefore, have limited knowledge of interpretation's potential to solve management problems. This may be due in part to the fact that few studies have documented interpretation's effectiveness in terms that managers can use (Sharpe and Gensler 1978, Fritschen 1984). As a result, managers may question interpreters' abilities to handle practical management matters (Sharpe and Gensler 1978). Griest (1981) reported that refuge managers tended to view the role of interpretation more narrowly than interpreters.

MEASURABLE OBJECTIVES

Another reason that people may oppose IMT relates to the innovation's linkage with measurable objectives. The adoption of IMT implies that interpretive programs must produce tangible results that prove program effectiveness. To prove effectiveness, measurable objectives must be incorporated into interpretive programs from the start, yet it has been noted that interpretive programs often lack clearly articulated, measurable objectives (Putney and Wagar 1973, Dickenson 1983;

Mullins 1984, Nielsen and Buchanan 1986). Some interpreters simply may not want to either learn how to base programs on measurable objectives or take the time to implement and evaluate such objectives.

On the other hand, some interpreters may not be convinced that interpretation programs should even try to achieve measurable outcomes in the first place, regardless of whether or not the programs can be successful at such endeavors. They may be concerned that accountability will lead to a pre-occupation only with interpretive services that produce measurable program outcomes. Dustin and McEvoy (1985: 18) feel that using IMT may "subvert the art of interpretation as it has traditionally been defined" because the most important outcomes of interpretation, such as enlightenment and curiosity, are largely intangible and therefore are not easily measured. However, Verardo (1982) contended that the feelings invoked by interpretive programs are measurable. In fact, he felt that the viewpoint that interpretation is not measurable has "led to a decline in importance of interpretation in a park operation" (p. 3).

RESISTANCE TO CHANGE

A final barrier to IMT may simply be a resistance to change. Griest (1981: 89) commented that it seems that interpreters are "still focusing on the security of playing educator and entertainer roles rather than directing attention to their role as a resource management professional."

The debate over the functions that interpretation should serve is indeed significant. If interpreters are to work together effectively to accomplish future goals, they must have a shared image of what it is they are supposed to be doing. Such a shared image does not apparently exist in the interpretation profession with respect to the functions that interpretation should serve. The obvious need for further research into this issue prompted the current research project.

METHODS

A research study was undertaken to better understand environmental interpreters' adoption of and perceptions of a specific innovation, namely, interpretation as a management tool. The "innovation-decision process" described by Rogers (1983) provided the theoretical foundation for the research model. Use of this framework allowed researchers to track the "diffusion" of IMT, that is, the process by which the innovation has been communicated through certain channels over time among members of the interpretive profession.

Interpretation as a management tool was considered an "innovation" based on a review of the interpretive literature, which clearly indicated that IMT was perceived to be a new idea or practice to many interpreters. In the survey questionnaire, IMT was described as follows: Some people feel that interpretation should be used as a 'management tool.' They feel that in addition to helping visitors have enjoyable, educational experiences, interpretation programs should also help an organization achieve its management goals by: encouraging thoughtful visitor use of sites in order to protect the resources, guiding visitors away from fragile resources or overused areas in order to minimize human impacts, and promoting public understanding of the organization and its programs in order to increase public support.

INNOVATION-DECISION PROCESS

The innovation-decision process involves a series of stages rather than a single act of acceptance or rejection of an innovation. In this study, adoption of IMT was measured by asking respondents who were currently employed as part-time or full-time interpreters a series of "yes/no" questions to determine the highest stage they had reached. An eight-stage model was used: unawareness, awareness, knowledge, persuasion, consideration, decision, discontinuance, and implementation.

Innovation-diffusion theory identifies three major factors that influence adoption/rejection decisions, namely, characteristics of the potential adopter, characteristics of the adopter's social system, and characteristics of the innovation. Data were collected on the following adopter characteristics: employment status, interpretive experience, educational background, exposure to inservice training, age, sex, and affiliation with interpretive organizations.

Data collected on social system variables included the nature of organizational adoption decisions and the identity of organizational factors that prevent or limit the use of IMT. Five innovation characteristics were studied, namely, observability, compatibility, relative advantage, trialability, and complexity. The questionnaire included one positively-worded and one negatively-worded statement for each innovation characteristic in order to reduce potential response bias.

Data were collected via a mailed survey questionnaire. The questionnaire was developed and administered following the Total Design Method described by Dillman (1978). Face validity was established by having the questionnaire peer-reviewed by fourteen interpretive professionals. Appropriate revisions were made.

The survey population for the study was members of the National Association of Interpretation (NAI) listed in the 1989 "Roster of Membership." The sample was generated by randomly selecting an initial NAI member then choosing every fourth member thereafter. This procedure generated a sample of 347 NAI members. NAI members who had served on the peer-review committee were excluded from the sample. The NAI membership roster was chosen to provide names for the survey population on the basis that it was the only national listing of professional interpreters that project researchers knew existed.

Telephone interviews were conducted with 20 non-respondents. Statistical comparisons of data collected from respondents and non-respondents did not reveal any problems with non-response bias.

Of the 347 questionnaires mailed out on March 28, 1990, 29 were undeliverable. Four questionnaires were unusable because they were inappropriately forwarded by the intended respondents to fellow interpreters who were not NAI members. The final questionnaire response rate was 79.3 percent (249/314).

Data were computer coded. Descriptive statistics were obtained utilizing the Statistical Package for the Social Sciences-SPSS (Nie et al. 1975). Open-ended questions were manually compiled by the researchers.

RESULTS

ADOPTION OF THE INNOVATION

The vast majority of the 191 respondents who were currently employed as interpreters indicated that they were at the "implementation" stage of the innovation-decision process (82.2 percent), that is, they were currently using interpretation as a management tool. The proportion of the sample at the other stages was as follows: unawareness (2.1 percent), awareness (3.1 percent), knowledge (1.6 percent), persuasion (3.1 percent), consideration (2.1 percent), decision (3.7 percent), and discontinuance (2.1 percent).

One respondent reportedly began using interpretation as a management tool in 1931; another began in 1951. The remainder of the sample adopted IMT after 1962. In order to determine if higher rates of adoption occurred after IMT received widespread attention in the interpretive literature in the mid to late 1970s, an analysis was conducted of the 48 respondents who had served continuously as interpreters since at least 1976 (the year in which Sharpe promoted IMT in his interpretive text).

Although more respondents did report adopting IMT in 1976 than in any other year (12.5 percent of respondents compared to 10.4 percent in 1972 and 8.3 percent in 1980), the overall IMT diffusion rate was fairly constant from the early 1960s through 1990 when the survey was administered. Slightly more than half of the respondents (52.1 percent) reported adopting IMT before 1976.

CURRENT IMT ADOPTERS

Current IMT adopters were asked who made the decision to use interpretation as a management tool in their current job position. About half of the respondents who answered the question (50.7 percent or 77/152) indicated that they made their own decision independent of their immediate supervisor or other staff members. Adoption decisions were made by consensus of the entire staff in 28.9 percent of the cases. Contingent decisions, where respondents made their own decision but only after their immediate supervisor or other staff members approved of the idea, were made in 4.6 percent of the cases.

The least common type of adoption decision was the authority decision (3.3 percent), where the respondent's immediate supervisor made the decision. Of the remaining respondents, 3.3 percent reported a combination of decision types while 4.0 percent did not know who made the adoption decision in their organization. Eight respondents (5.3 percent) reported that interpretation had been used as a management tool from the start of their program.

PERCEIVED CHARACTERISTICS OF THE INNOVATION

Respondents' perceptions of the characteristics of IMT as an innovation are summarized in Table 1. The mean scores for the positively- and negatively-worded statements associated with each of the five innovation characteristics studied were averaged to provide overall mean scores for each characteristic (negatively-worded statements were reverse-coded).

The results showed that respondents ranked IMT as compatible with their existing interpretive programs and observable (average means of 1.9 and 2.0, respectively). Respondents rated IMT slightly lower with respect to relative advantage, trialability, and complexity (means of 2.3, 2.7, and 2.7, respectively). Over three-fourths of the sample (79.5 percent) agreed with a statement indicating that IMT related well to the goals of their organization's existing interpretation program (a measure of compatibility). Similarly, over three-fourths of the respondents (79.4 percent) agreed with a statement indicating that they had "personally seen other interpreters effectively use interpretation as a management tool" (a measure of observability).

Respondents were asked to list factors that prevented or limited them from using interpretation as a management tool (see Table 2). The most common response was that nothing was limiting IMT adoption (18.7 percent). The next most common limiting factors were time (15.0 percent), money (13.5 percent), and management support for IMT (10.4 percent).

Only about half of the respondents (53.8 percent or 129/240) had received any training on how to use interpretation as a management tool. Table 3 reports the type of information that respondents wanted covered in an IMT training session. The greatest proportion of respondents wanted training sessions to provide specific proof of IMT's effectiveness (16.5 percent); respondents also wanted general information on developing and implementing IMT programs (12.8 percent). Only 10.0 percent of respondents indicated that they were not interested in IMT training, regardless of the type of information covered.

DISCUSSION

Widespread use of interpretation as a management tool has been reported by interpreters in this study. In addition, some interpreters have apparently used interpretation for management purposes for years. These findings should be encouraging to IMT promoters. However, the data only reflect the apparent widespread adoption of IMT; no implications can be made about the nature of this self-professed adoption. Are interpreters superficially incorporating management concepts into their existing programs or are they designing new interpretive programs with the primary purpose of explaining management concepts? Are IMT programs based on clearly defined measurable objectives? These questions need to be answered through additional research.

While the high level of IMT adoption (82.2 percent) reported in this study is somewhat comparable to the 68.0 percent adoption level reported by Braley and Hanna (1980), it contrasts sharply with the 16.1 percent or lower adoption levels reported in Griest's 1982 study. By understanding how adoption was measured in each study, these differences can be put into proper perspective.

The 82.2 percent adoption level reported in the current study represents a cumulative total of all respondents who answered "yes" to the closed-ended question "Are you currently using interpretation as a management tool?" Braley and Hanna's adoption figures represents a cumulative total of respondent who answered "yes" to the close-ended question "Have you used interpretation as a management tool?" Griest's adoption figures represent answers to an open-ended question that asked respondents how their refuge was using interpretation programs to solve management problems or achieve management objectives. As such, Griest's figures only represent adoption of IMT for specific objectives. Since no cumulative total representing the percent of refuge managers and interpreters adopting IMT was reported, Griest's data set cannot be compared with the current data set. However, the adoption level reported by Braley and Hanna can be compared with the current study's adoption level (although cautiously since different survey populations were involved). Based in such a comparison, it seems that IMT has become more widely diffused in recent years.

REVIEW OF THE LITERATURE

Review of the interpretive literature indicated that the IMT innovation did not apparently receive widespread attention until after 1976 when Grant Sharpe published his text. However, the current study provides evidence that the idea has been adopted by interpretive professionals as early as the 1930s and has been diffusing at a fairly constant rate since the early

Table 1. Respondents' perceptions of characteristics of the "Interpretation as a Management Tool" innovation (rank ordered).

Innovation characteristic measured	Representative statement[1]	Overall mean score[2]
Compatibility	The idea of using interpretation as a management tool relates well to the goals of my organization's existing interpretation program.	1.9
Observability	I have personally seen other interpreters effectively use interpretation as a management tool.	2.0
Relative advantage	Solid evidence exists demonstrating that interpretation is effective as a management tool.	2.3
Trialability	It is easy to use interpretation as a management tool on a trial basis.	2.7
Complexity	Understanding how to use interpretation as a management tool is simple.	2.7

[1]The questionnaire included one positively-worded and one negatively-worded statement for each innovation characteristic in order to reduce potential response bias. The positively-worded statements are provided here.
Range: 1 = Strongly agree to 5 = Strongly disagree

[2]The mean scores for the positively- and negatively-worded statements associated with each of the five innovation characteristics studied were averaged to provide overall mean scores for each characteristic. Negatively-worded statements were reverse-coded) e.g., "Strongly agree" responses were coded as "5" instead of "1").

Table 2. Respondents' listings of factors that limit adoption of the "Interpretation as a Management Tool" (IMT) innovation (rank ordered).

Limiting factor	Percent of sample listing the factor	N
Nothing limits adoption of IMT	18.7	36
Limited time	15.0	29
Limited budget	13.5	26
Limited management support for IMT	10.4	20
Limited number of staff members	7.7	15
IMT has a low priority within organization	5.7	11
Lack of visitor interest in IMT programs	5.2	10
Political climate is not conducive to adoption of IMT	4.1	8
Lack the creativity to apply IMT to own situation	2.6	5
Staff lacks expertise to implement IMT	2.1	4
Limited staff support for IMT	2.1	4
Restrictive or preventative organizational policy	1.5	3
Limited or no knowledge of IMT concept	1.5	3
Insufficient training	1.5	3
No factor listed	1.5	3
Other factors	6.7	13
Totals	99.8	193

1960s. Given this extended diffusion period, can IMT still be considered an innovation? The fact that about one-fourth of respondents (25.6 percent) reported adopting interpretation as a management tool within the last five years (since 1985) indicates that IMT is still an innovative idea to many interpreters.

Table 3. Respondents' listings of the type of information desired in "Interpretation as a Management Tool" (IMT) training sessions (rank ordered).

Type of information desired	Percent of sample listing the item	N
Proof of IMT's effectiveness	16.5	41
General information on developing/implementing IMT programs	12.8	32
How to promote IMT	5.2	13
Methods for evaluating the success of IMT programs	4.4	11
Increasing visitor compliance with rules and regulations	3.2	8
Any information would be of value	3.2	8
Incorporating management objectives into interpretation	3.2	8
How to promote management goals in a way that is enjoyable to the public	2.4	6
Using IMT to deal with politically sensitive issues	2.4	6
Appropriate/inappropriate use of interpretation (ethical concerns)	2.0	5
The concept/philosophy of IMT	2.0	5
Other	16.7	42
Not interested in IMT training regardless of information covered	10.0	25
No answer provided	16.0	39
Totals	100.0	249

POSITIVE PERCEPTIONS

Respondents reported positive perceptions of the IMT innovation; none of the mean scores for the five innovation characteristics measured in this study fell within a negative range. Given the number of barriers to the diffusion of IMT discussed in the interpretive literature, including IMT's association with behavioral objectives, these findings surprised the researchers. Perhaps interpreters' views of IMT have changed over time as IMT success stories have sprouted. After all, three-fourths of the sample reported seeing interpretation effectively used as a management tool.

It is also possible that interpreters simply do not understand everything entailed in adopting IMT. For example, if they believe that adopting IMT merely means incorporating management issues into existing interpretive programs, they would have a positive perception of the innovation's complexity. However, if they realized that adopting IMT means that interpretive programs must be based on behavioral objectives in order to prove program effectiveness, then they might have a more negative attitude toward the innovation's complexity. Further research is needed to determine if interpreters have a realistic grasp of the IMT innovation.

PERCEIVED CONSTRAINTS

Perceived constraints within respondents' organizations, rather than respondents' individual perceptions of the characteristics of the innovation, appear to be the primary factors preventing initial adoption or limiting further adoption of IMT. The top limiting factors reported were limited time, money, and management support. Further research delving into management's support for IMT seems warranted. However, limiting factors identified by respondents must be kept in proper perspective in that the most common response to the question "what factors prevent or limit you from using interpretation as a management tool" was that nothing limits adoption of IMT. In addition, the second most common response, namely, that time was limiting, was reported by only 15 percent of the sample. Therefore, it would appear that there are no major constraints to the use of IMT.

Respondents expressed considerable interest in IMT training: almost 75 percent volunteered information on topics they would like to have covered in such training. Future IMT training sessions should be designed to show attendees how to foster management support for IMT.

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COMMUNICATION TO REDUCE RECREATION CONFLICTS: A NEW CHALLENGE FOR INTERPRETERS

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ABSTRACT: Interpretation has long been institutionalized as an integral component of professional park and recreation management. However, the definition and function of interpretation is dynamic, reflecting an evolution of recreation and education philosophies and objectives. An emerging role for interpretation is that of a resource management tool. A recent study in Michigan's Sleeping Bear Dunes National Lakeshore revealed that interpretation and communication could play an important role in reducing potential conflicts between riparian landowners and river floaters. These conflicts, which are perceived as much more numerous and serious by landowners, are seeded in the frames of reference the two groups attach to the river resource. The paper explores interpretation and communication as a management tool, identifies perceived problems on the river both by landowners and floaters, and suggests ways in which interpretation/communication could be employed to inform river users about landowner concerns and points of view.
KEYWORDS: river recreation, riparian landowners, park management, survey research

INTERPRETATION

Interpretation—how is it defined? What roles do interpreters and interpretation serve? Are these roles changing? Answers to these questions depend upon who you ask, the circumstances, and perhaps when in the past few years it was asked.

Vander Stoep (1988), in a recent article in **Trends**, provides a historical perspective on the definitions of interpretation and the various roles of interpreters. Her thesis is that there have been, and will continue to be, many changes in the uses and roles of interpretation. Words such as educate, inspire, teach, reveal, provoke, create, and communicate seem appropriate enough. However, suggesting that interpretation and interpreters can serve as a **tool for natural resource management** may raise an eyebrow or two!

Though not widely accepted in the interpretive circles, interpretation and interpreters are increasingly being used to aid resource management decisions. For instance, interpretive services are used to direct park visitors to under-utilized or lightly-used locations, to inform visitors about minimum impact camping techniques, to alert visitors about water quality problems and safety hazards, and to communicate with local citizens and other groups about management concerns and activities in an effort to improve an agency's image.

A recent study in Michigan's Sleeping Bear Dunes National Lakeshore revealed that interpretation and **communication** could play an important role to reduce potential conflicts between riparian landowners and river floaters on the Platte River.

In this paper, we

(1) explore differences and similarities in perceptions of river problems between these groups,

(2) emphasize that river managers need to instill recreationists with a sense of respect for landowner rights and concerns, and

(3) suggest ways to communicate and educate both river users and landowners about each others' points of view concerning appropriate river use and conditions.

A SOURCE OF CONFLICT

Numerous studies during the past two decades have shown that recreational boating on the nation's rivers has increased dramatically. In spite of a leveling-off of popularity during the past few years, rivers continue to be a source of pleasure for many Americans (Lime 1985). A continuance of this attraction to water undoubtedly will extend well into the next century.

With the growth in popularity, river use has created a host of environmental and social problems—not the least of which is the friction and potential conflicts between river users and riparian landowners. While the body of research on the recreational use of rivers is extensive, only a few studies have addressed perceptions of riparian landowners on river management issues, problems, and solutions (Bassett et al. 1972, Christophersen 1972, Cox and Argow 1979, Decker et al. 1981, Foresight Consulting Group 1985, Roggenbuck and Kushman 1980, and Zachmann 1986).

Most studies of river recreation that have included an investigation of perceptual beliefs have concentrated solely on recreationists. As a result, there is an incomplete understanding of how riparian landowners regard river management alternatives and especially of the similarities and/or differences of opinion that may exist between landowners and recreationists.

What few studies there have been which compare the perceptions of riparian landowners and river users conclude that the severity of problems is generally one-sided (Bassett et al. 1972, Dawson et al. 1982, Driver and Bassett 1985, Lehman 1990, McCool 1990, and McAvoy 1982). Landowners typically identify more problems and tend to see the problems as more severe than do river users.

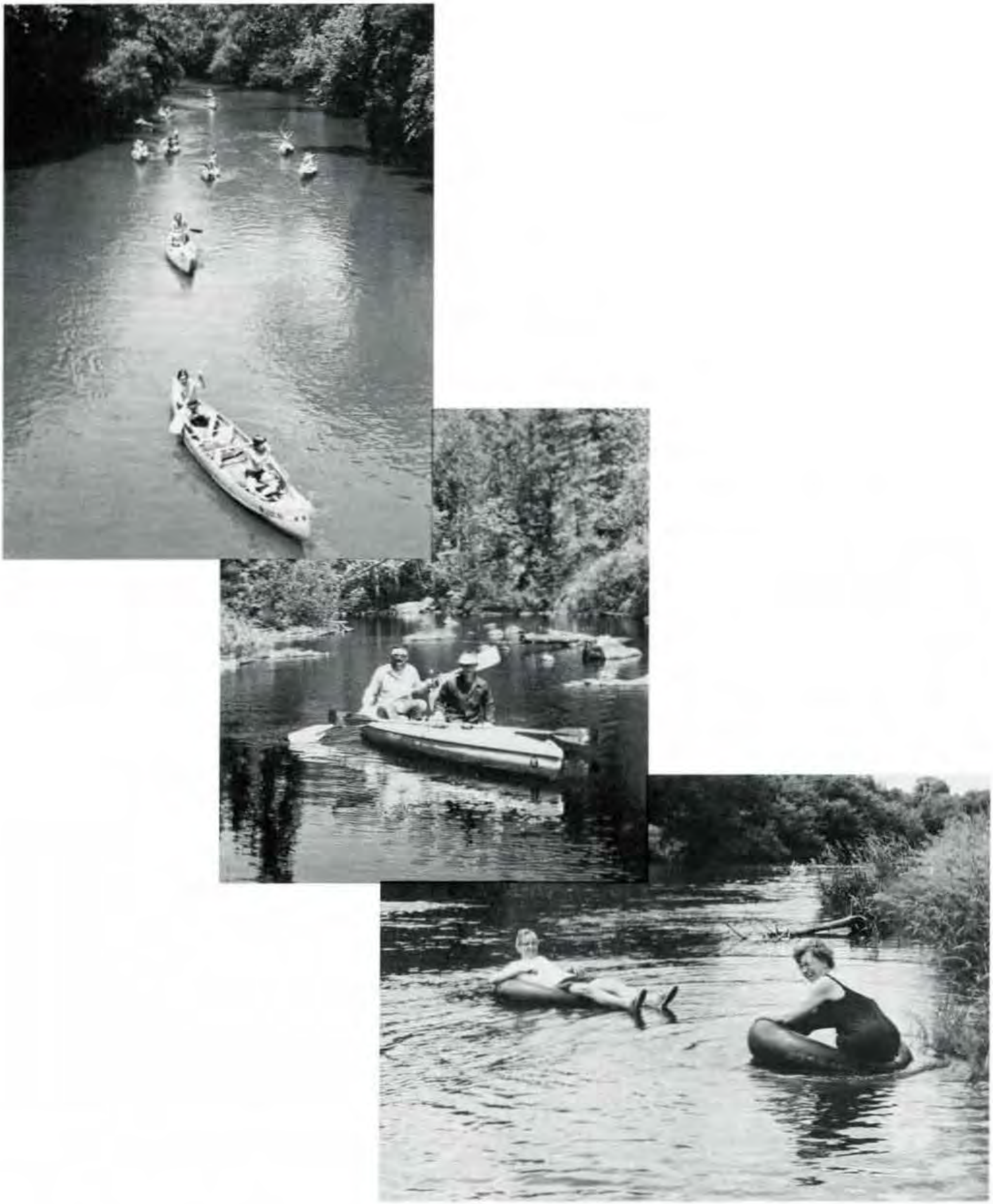
The most common problems identified by landowners include trespassing, littering, vandalism, and invasion of personal privacy. As such, most problems focus on the social and behavioral impacts associated with the presence of visitors to the resource. Landowners also are more supportive of strict or direct management actions to alleviate problems.

INPUT FOR A PLATTE RIVER MANAGEMENT PLAN

To better understand the dynamics of human use within the corridor of Michigan's Platte River, the National Park Service and the University of Minnesota cooperated on a multi-faceted study that included surveying river recreationists (primarily river floaters and anglers as well as Lake Michigan boaters and beach users) and riparian landowners. The study was intended to support the development of a management plan for the portion of the Platte River which flows through Sleeping Bear Dunes National Lakeshore.

MANAGEMENT CONCERNS

The management concerns focused on increased use in river floating and potential conflicts between river users and riparian landowners. River use on the Platte is characterized as primarily flat-water canoeing and innertubing which is concentrated between



Platte River Floaters, canoeists, kayakists, innertubers (photos by David W. Lime).

Memorial Day and Labor Day. Similar to recreational use on other midwestern streams, popularity on the Platte River grew rapidly during the last two decades. In the early 1960's, use was minimal.

Today, approximately ***20,000 visitors*** each year seek out a six-mile stretch of water located about 30 miles southwest of Traverse City in Michigan's Lower Peninsula. The majority of visitors are family groups who reside throughout Michigan and neighboring states. Most visitors rent equipment from local canoe liveries. There are no overnight accommodations along the river in accordance with the management plan of the National Park Service. Most overnight visitors stay in local campgrounds or other nearby tourist accommodations.

THE RIVER CORRIDOR

While the majority of the river corridor is in National Park Service ownership, about 50 permanent or absentee landowners own property adjacent to the river. Dwellings are concentrated on the lower stretch of the Platte, and none are seen on the left (south) side of the river when traveling downstream.

A paved county road meanders along the Platte but remains largely out of sight of the river until it reaches Lake Michigan where there is a township park, parking lots, a canoe landing, and a boat ramp for access to the lake. During peak-use, congestion at the mouth of the river is a problem because numerous visitors are present and the mix of activities is concentrated in a small area.

METHODS

In the spring of 1989, riparian landowners along the Platte River were mailed a survey that covered a variety of topics relating to the management and use of the river (Lehman 1990, Lime and Lehman 1989). Specific topics covered in the questionnaire included landowners' river recreation use patterns on the Platte in 1988, their perceptions of both general and specific recreation-related problems along the river, and their preferences for potential management actions to solve these and related problems.

All 50 landowners within the river corridor were initially contacted; however, only 44 surveys were deliverable. Thirty-six questionnaires were returned (resulting in an 82 percent response rate).

PLATTE RIVER FLOATERS

Data on Platte River floaters was collected during the primary visitor use seasons in both 1987 and 1988. This aspect of the study encompassed all types of river users including **canoeists, kayakers, and innertubers.** After completing a short on-site interview, a sample of these recreationists were sent a mailback questionnaire several weeks after their visit. In addition to questions about the group and their travel habits on this trip, respondents were asked to report on a variety of problems encountered on the river.

They also were provided an opportunity to voice their opinions concerning management actions to mediate potential problems. Of 347 groups who were mailed surveys in 1988, 273 returned them (resulting in a 79 percent response rate). Only data from the 1988 survey of river recreationists are included in this paper (Lime 1989).

It should be noted, however, that comparisons of 1987 and 1988 data for river users were very similar. The 1987 survey also achieved high response rate—75 percent.

On both surveys, respondents were asked to rate their perception of a variety of potential river problems based on their experiences. Problems were ranked on a five-point Likert scale ranging from 1 (not a problem) to 5 (a very serious problem). Thirty-seven problems were common to both the landowner and river recreationist surveys. A z-statistic was used to test for statistically significant differences ($p<0.05$) between mean scores.

RESULTS

The most notable finding from the study was the dissimilar views of the landowners and river recreationists concerning recreational use of the river and the quality of the river environment. Of the 37 possible problems listed on both surveys, 18 represented potential sources of conflict between riparian landowners and river floaters.

The riparian landowners viewed **each** of these 18 problems as a more serious concern than the river recreationists (Table 1). Further, z-tests of mean scores revealed a statistically significant difference between the two groups on all 18 issues.

In comparing the perceived seriousness of problems between the two study groups, most of the conditions that were likely to represent a potential conflict between riparian landowners and river recreationists were related to

Table 1. Problems representing possible sources of conflict between riparian landowners and river recreationists along the Platte River.

	Seriousness of Problem[1]			
	Riparian Landowners		River Recreationists	
Problem	Moderate to Very Serious Problem (by percent)	Mean Rating[2]	Moderate to Very Serious Problem (by percent)	Mean Rating[2]
Too few garbage cans at put-in and take-out points	76	3.33	17	1.62
Inadequate toilet facilities at put-in and take-out points	53	2.85	30	2.03
Litter on banks	58	2.79	13	1.60
People drinking alcoholic beverages	56	2.82	8	1.26
Litter in river	54	2.73	13	1.59
People shouting and yelling	48	2.58	11	1.41
Too few toilets along river	47	2.74	32	2.11
People being inconsiderate	45	2.67	8	1.33
Lack of developed places to stop, rest, eat lunch, etc. between put-in and take-out points	44	2.56	29	1.93
Too many people on river	36	2.12	10	1.39
Wildlife harassment by visitors	35	2.21	7	1.26
Vandalism by visitors	30	2.06	3	1.14
Human body waste on stream bank	26	1.80	1	1.06
Unskilled canoeists using river	24	1.94	6	1.32
Unskilled motorboaters using river	23	1.91	3	1.14
Motorized boats on river	20	1.97	9	1.36
People playing loud radios	16	1.66	3	1.19
People fishing	12	1.41	1	1.09

[1]Z-tests indicated a significant difference between mean scores of the landowners and recreationists on all 18 problems ($p<0.05$).

[2]Ratings on a 5-point Likert scale with 1=Not a problem, 2=Slight problem, 3=Moderate problem, 4=Serious problem, 5=very serious problem

inappropriate and inconsiderate social behavior (Table 1).

Although not all items listed are strictly behavioral, they can be directly correlated with social behavior. For example, "Too few garbage cans at put-in and take-out points" can be closely correlated with concerns about littering; "Inadequate toilet facilities at put-in and take-out points" and "Too few toilets along river" are related to concerns about "Human body waste on stream banks"; and, "lack of developed places to stop, rest, eat lunch, etc..." can be associated with inappropriate trespassing behavior.

Referring to Table 1, it is clear that riparian landowners have a much more pessimistic view of problems along the Platte River than do recreationists. A total of eleven river conditions were listed by over one-third of the landowners as being moderate to very serious problems.

The landowners rated all eleven of these conditions as being more serious than the top rated item on the recreationist's list—"Too few toilets along river". No condition received a mean rating from the river recreationists greater than 2.11 (a "slight problem"). Thus, the river recreationists perceived none of the conditions as being a "moderate", "serious", or "very serious" problem (that is, a mean rating of 3.0 or above).

SIGNIFICANCE OF THE RESULTS

Why are there such dramatic differences in perception of problems between river recreationists and riparian landowners? The explanation may be found, in part, due to different frames of reference for the two groups. On one hand, landowners have a long-term commitment to the area and to the river setting in particular.

The Platte River corridor is their ***"private sanctuary"***, and they are more than passively interested in the quality of the environment. Their definition of a quality environment not only consists of healthy and diverse natural resources, but also of freedom from disturbance by unwanted intrusions.

The value of one's property, and even the enjoyment of personal freedoms, can depend on the preservation of the quality environment. Thus, we expect landowners to be sensitive to and concerned about changes in the environment. Changing conditions in recent years on the Platte River and the presence of certain forms of inappropriate visitor behavior undoubtedly has helped trigger negative feelings.

On the other hand, river recreationists visit the Platte occasionally. Most visitors do not have the vested interest and commitment to the area, nor do they possess the landowner's day-to-day perspective on the quality of the river environment.

While most of these recreationists do not willfully engage in behavior that degrades resources or create conflict with the landowner's property rights, their transient nature within the corridor may inhibit their capacity to curb such behavior.

COMMUNICATION

The results of this study indicate, as other studies have, that the National Park Service may need to take further action to ensure that property rights and concerns of landowners are adequately addressed. It seems appropriate to communicate to river floaters that many landowners are not pleased with some river use conditions—especially the presence of numerous, often misbehaved visitors.

What communication interpretative methods can managers employ to inform river users about landowner concerns and points of view?

THE WRITTEN WORD

In a recent article addressing management of recreational trespass on the Upper Delaware Scenic and Recreational River, Jeffrey Marion (1989) recommends that additional visitor education efforts are needed to better inform recreationists of:

(a) the amount and location of private ownership along rivers and the responsibility of visitors to respect landowner rights,

(b) the environmental and social impacts associated with recreational activities,

(c) the laws, regulations, and potential consequences of trespassing on private land and disturbing landowners, and

(d) the location of public and commercial places (developed and undeveloped) to stop along the river.

Such information should be included in all public agency brochures, maps, newspapers, and other literature. As an alternative, separate write-ups could be prepared specifically on respect for landowner rights and property (Montana Department of Fish, Wildlife, and Parks 1986).

MATERIAL DISTRIBUTED TO VISITORS

Material distributed to visitors before they arrive is as important as information conveyed to visitors once they are on site. Information also could be disseminated on bulletin boards at river access sites, in area campgrounds and other accommodations, and in local businesses catering to river users (eg., bait shops, sporting goods stores, and canoe liveries).

Posting land ownership signs both on public and private land along the river or encouraging riparian landowners to erect "no trespassing" signs might or might not be appropriate, depending on the management objectives for the river corridor and ownership patterns. Where appropriate, however, standardized signs should be considered in an effort to reduce negative aesthetic effects.

"ASK PERMISSION"

An innovative landowner relations program, "ASK Permission," sponsored by the New York State Department of Environmental Conservation, takes a pro-active approach to dealing with trespass concerns (Marion 1989). Standardized signs and educational materials have been developed and are available for landowners interested in the program.

These attractive signs are intended to inform the passersby that it is respectful to first ask permission before venturing on to private property. Educational material focuses on how to behave on private property.

Cooperative efforts between resource managers and the commercial sector to communicate with recreationists seems especially fruitful because on many rivers, most recreationists rent equipment from a livery or campground and have little or no personal contact with the resource management agency responsible for the river corridor. These groups can collaborate to develop effective brochures, maps, and other handouts. Other innovative activities are possible as well.

For instance, garbage bags, distributed by the agency and livery, could carry specific messages about respecting landowner rights and how to behave on or near private property. Decorative emblems could be placed on the bow-plate of rental canoes and attached to life jackets with similar messages. Such ***"reminders"*** might be more effective than lengthy written materials.

FACE-TO-FACE COMMUNICATION

Speaking directly to the public about appropriate behavior and the need to respect landowner rights and feelings has the advantage of receiving immediate feedback from the listener. Further information can be communicated if necessary. Such face-to-face activities can occur at visitor centers and kiosks, at access points (Schomaker and Lime 1986), and on the river.

The use of river rangers at access points along the river has received strong support by managers as well as the commercial sector because onsite personnel often can provide a quick response to actual or potential problems. Furthermore, they present a positive, caring, and visible public-service image.

These personal contacts allow the communicator to use a variety of techniques and messages to make their point(s) with the recreationists. Traditionally, information is shared verbally or through the distribution of literature. In Minnesota's Boundary Waters Canoe Area Wilderness, when visitors obtain their **"entry permit"** they are asked to review a notebook that contains the regulations and rules of the wilderness in pictures.

Visitors also are shown a map of heavily-used areas. With the growing importance on video technology, more attention surely will be directed to this media to inform visitors about landowner's rights and sensitivity to the presence of river travellers.

MANDATORY REGISTRATION

Mandatory registration of river visitors before they start a river trip is another method to inform recreationists, face-to-face about the need to respect landowner rights. This approach is somewhat akin to the requirement on commercial airlines that passengers must "check in" before boarding.

This strategy has become a reality in the Boundary Waters Canoe Area Wilderness. Beginning this year, all groups must pick up their wilderness permit in person from the Forest Service or an official cooperator (resort or canoe outfitter) to validate the permit and to receive a personal message about minimum impact camping and appropriate wilderness behavior.

RESTRICTIONS ON USE

Limiting numbers of visitors on the river would do relatively little to alleviate many of the concerns raised by landowners. Most of the problems are concerned with inappropriate behavior—not numbers of people or watercraft. Limiting total traffic would be treating a symptom rather than the cause of the problem.

A policy that restricts stopping along the river to designated sites only should aid in reducing some trespass on private property. Of course, effectively communicating this regulation to the public is a must.

The top three concerns of river floaters on the Platte River included the lack of stopping places and the lack of toilet facilities at access points and along the river (Table 1).

These issues also were ranked high by landowners. The location of these facilities would need to be well-documented in the literature and at the landings. These sites also should be clearly identified on the river with signs or markers so visitors would not miss them.

ONGOING DIALOGUE

Ongoing communication among those concerned about the use of the river and its problems will do much to build good public relations and foster cooperative problem solving.

Managers should consider fall meetings with interested landowners, canoe livery operators, and other interested parties to discuss the past summer's activities and problems as well as evaluate actions that were implemented to ameliorate problems. Such dialogue will permit the various parties to **"clear the air"** but also to openly explore further management strategies.

At these meetings or through other means (eg., newsletters and newspaper articles), resource managers should publicize activities that are aimed at reducing potential conflicts between recreationists and riparian landowners.

Livery operators, other commercial tourism establishments, landowners, and the visiting public should be informed that management is sensitive to landowner concerns and points of view and that managers are actively doing something to solve these problems.Livery operators, too, could use this material in their own marketing literature to inform perspective clients that the river is being thoughtfully protected and managed.

LAW ENFORCEMENT

In spite of the best intentions to reduce trespass activities and to educate recreationists about landowner rights and concerns, some visitors will not get the message. Consequently, some expansion of law enforcement activities may be necessary. Hopefully the intent of law enforcement can be accomplished through an increased presence of river rangers and others who convey an image of being **"good hosts"** rather than police officers.

Improved craft identification with more visible decals and numbers to identify livery canoes and kayaks might make it easier for landowners and others to report inappropriate boater behavior. Floaters also could be told that improved craft identification is being used to help apprehend inconsiderate and misbehaved guests.

Suspected violators could be reported to a central office and later confronted about their activities by an appointed agent(s), perhaps representing both the National Park Service and the livery from which they rented their equipment. The Minnesota Department of Natural Resources has a somewhat parallel program, **"Turn In Poachers"**, directed at identifying and prosecuting people who violate game laws.

CONCLUSIONS

•Data from a variety of studies, including ours, suggests that riparian landowners and river recreationists often hold differing opinions and points of view concerning problems experienced on a river. Landowners usually rate the number and severity of problems differently than recreationists.

•Most of the serious problems articulated by the landowners, at least in our study, focused on inappropriate behavior of river floaters--litter, people drinking alcohol, people shouting and being generally inconsiderate of others, visitors harassing wildlife, vandalism of private property, etc.

•Talented interpreters with their innovative skills at communication would appear to have much to offer resource management professionals as they grapple with potential conflicts between riparian landowners and river users.

•Known and yet untried methods to better inform and communicate with recreationists to respect landowner rights and concerns need to be implemented. They also need **rigorous testing and evaluation** to determine if they achieve desired goals and objectives. Such testing of communication strategies must not be limited to whether or not the action works but under what **conditions** a given strategy will work.

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PERCEPTIONS AND MISPERCEPTIONS ABOUT HEARING-IMPAIRED STUDENTS: IMPLICATIONS FOR PARK INTERPRETERS

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ABSTRACT: A literature review concerning cognitive and developmental characteristics of hearing-impaired students was conducted to facilitate research and practice of park interpretation for this population. The present state of knowledge suggests that hearing-impaired students possess the same cognitive faculties and utilize them in a manner similar to that of their normally hearing counterparts, however, the mode of information processing is different. Research also suggests that hearing-impaired students do not perform as well as their normally-hearing age mates when tasks or material is language dependent. Three principles of interpretation for hearing-impaired students are proposed.
KEYWORDS: Cognition, hearing-impaired, information processing, outdoor education.

INTRODUCTION

Freeman Tilden (1977) in his work *Interpreting Our Heritage*, provided a functional definition of park interpretation which, for many interpreters, has become axiomatic. Among the salient characteristics of interpretation are: **1)** it is an educational activity, **2)** it incorporates the use of original objects and firsthand experience, and **3)** its goal is to do more than communicate factual information. These characteristics take on added importance in the educational process of hearing-impaired students.

Provision of educational experiences outside of formal classroom settings is a recognized concern among teachers of the hearing impaired. Many such experiential outings involve parks and nature centers and require the services of "park" (as distinguished from sign language) interpreters.

Lewis (1980) pointed out that park interpreters are sometimes apprehensive toward working with special populations. Fear and uncertainty are reasons that special populations are sometimes shunned. Means of overcoming fear and uncertainty include exposure, familiarity, and knowledge of proper or expected behavior (Newcomb et al. 1965).

PURPOSE

The purpose of this paper is to consider park interpretation for hearing-impaired students with an aim toward suggesting implications for practice and research. A few key sociological concerns related to deafness are reviewed because of their implications for information processing and utility in helping interpreters understand "deaf culture" (Higgins 1980, Rodda and Grove 1987,Sanders 1988).

PERCEPTIONS AND MISPERCEPTIONS

Common perceptions and misperceptions concerning hearing-impaired students' cognitive abilities deserve exploration. The first concerns general intelligence. Hearing-impaired children are frequently thought of as less intelligent than their normally hearing counterparts (Moores 1982). Several sources for this belief can be identified. Speech difficulties and limited language skills exhibited by hearing-impaired individuals are often interpreted as indicative of their purported subnormal intelligence (Moores 1982).

EARLY RESEARCH

Early research on comparative intelligence between normally hearing and deaf individuals supported this idea. Typical of this line of work were comparisons between hearing and deaf individuals utilizing standardized intelligence tests (Pintner 1933). Deaf individuals were typically found to score lower on such examinations.

Criticism has been leveled at this intelligence-test-based comparative approach. In a manner analogous to charges of cultural bias in tests comparing blacks and whites, charges of "cultural bias" have been leveled at tests comparing normally hearing and hearing-impaired individuals. Bias in this regard concerns the question of language acquisition and intelligence. Although language skills are a necessary component of successful academic functioning, a number of psychologists hold that language skills should not be equated with total intelligence. In addition, reviews of more recent comparative tests that control for language acquisition and skills show no significant differences between hearing and hearing-impaired populations (Furth 1964, Rosenstein 1961, Vernon 1967).

A second source of the low-intelligence belief is illusory correlation. Illusory correlation is the psychological tendency to notice confirming rather than disconfirming evidence for presently held beliefs. Although the belief that handicapped individuals are less intelligent than nonhandicapped is breaking down, historical evidence shows it has been pervasive. Poor speech, reduced levels of academic achievement and delayed psycho-social development have been interpreted as evidence confirming hearing-impaired individuals' purported subnormal intelligence (Higgins 1980, Moores 1982).

CONCRETE VERSUS ABSTRACT

A second perception regarding the hearing impaired concerns their ability to process concrete versus abstract material. This perception is based on the premise that cognitive processing necessarily involves language and that language limitations confine the hearing impaired to concrete information (Furth 1966; Myklebust 1964).

Implicit in this belief is the notion that intelligence is language based. Although the debate concerning language based intelligence has yet to be definitively resolved, a number of scholars notably William James (1893), Osgood (1963, 1966, 1968), and Piaget (1954, 1968) have argued otherwise. Suppes (1972) in criticizing the language-based necessity for abstract thinking states: "the more developed forms of inference are not primarily auditory in nature but visual; for example, there is very little development of mathematical proofs in purely auditory fashion".

COMPARISION OF SUBJECT GROUPS

Watts (1979) compared three groups of subjects, hearing, hard of hearing, and deaf on conservation, spatial thinking, and social thinking skills. Conservation tasks involve making comparisons of size and weight of the same quantities in different form. For example, is a coiled snake claimed to be longer or the same length when stretched out or coiled? Spatial tasks measured understanding of spatial position and horizontally. Social thinking tasks involved arrangement of pictures to make a story in a comic-strip presentation. Each of these tasks may be interpreted as a form of abstract thinking.

No significant differences were found between groups on spatial and social thinking. Hearing subjects performed better on conservation tasks. Watts concluded that knowledge acquisition in young children, including deaf children, occurs to a great extent through skills active upon and interactive with the environment. Within the fields of environmental interpretation Carson (1965), Cornell (1979), and Tilden (1977) have expressed similar ideas.

Diebold and Waldron (1988) compared the effects of four different media presentations about the water cycle on comprehension and recall of hearing-impaired subjects. Media forms included: **1)** verbatim text from a sixth-grade science textbook; **2)** a simplified version of the science book text in which sentences were placed in subject-verb-object format and as many transformations as possible removed; **3)** a simplified text plus labelled diagrams; and **4)** a set of labelled diagrams.

Media effectiveness was evaluated by comparing pretest and posttest knowledge scores. Results indicated that formats featuring highly visual or pictorial content and simplified language were more effective than media containing less pictorial content and more complex language. Results also suggested that abstract concepts such as water cycles can be comprehended by hearing-impaired students using highly visual media.

SIGN LANGUAGE AS A TRUE LANGUAGE

A third perception concerning educational efforts aimed at the hearing-impaired is based on the claim that sign language is not a "true" language and therefore places limits on cognitive abilities. Several qualities of language relevant to information processing have been isolated. Among these are phonology, syntax, and semantics (Glass, Holyoak, and Santa 1979). Manual languages (e.g. signed languages) have been found to possess each of these properties necessary for effective information processing (Bellugi, Klima and Siple 1975,Newport and Bellugi 1978).

What is perhaps most important for park interpreters in this regard is not whether manual languages are true languages, but the mode in which the hearing-impaired seems to process language. A number of studies utilizing intrusion errors have been conducted to study short-term memory language processing in the hearing impaired. Intrusion error studies typically present subjects with letter or word stimuli at a rapid rate. Subjects are asked to recall those stimuli as best as possible. Inferences about cognitive processing are made based on patterns of errors made by subjects.

For example, letters or words may be presented that either look similar such as KXYZ, or sound similar such as BCT. If a pattern of errors is found for stimuli that sound similar it is concluded that subjects are engaged in auditory processing of those stimuli. Conversely, if visual confusions are made this is indicative of visual processing. Several studies comparing normally hearing subjects with hearing-impaired subjects suggest that the hearing-impaired process language visually whereas normally hearing individuals process language auditorially (Bellugi, Klima, and Siple 1975,Conrad 1970, MacDougall 1979).

SOCIAL DEPRIVATION

A fourth perception concerns social deprivation and its influence on cognitive abilities. Collectively, research on cognitive processing and intelligence of hearing-impaired subjects suggests that hearing-impaired individuals perform as well as hearing subjects on many tests of cognitive processing and intelligence when controlling for language barriers.

Where differences do occur, they often can be traced to environmental and social deprivation. Social isolation, particularly from play circles, and limited parent-child communication in early years delay language acquisition and cognitive and emotional development (Sanders 1988).

When norm referenced against normally hearing age mates hearing-impaired children have been described as egocentric, irritable, impulsive, suggestible (Levine 1956), less socially competent (Evans 1975), immature in caring for others (Myklebust 1960), possessing gross coercive dependency, lacking in empathy, and lacking in thoughtful introspection (Altshuler 1974). These descriptions describe hearing-impaired students as exhibiting delayed psycho-social development and caution us that they will act in ways that can be viewed as immature and selfish when compared to their normally hearing age mates (Delgado 1982).

A number of factors have been described as contributing to delayed psycho-social development including: communication deprivation (Altshuler 1974), mothers' feelings of guilt, sorrow, mourning or anger at her child's hearing impairment and consequent interference with developing a warm stable relationship, overprotective parents (Schlesinger and Meadow 1972), and inability to express exuberance but through action (Katan 1961).

IMPLICATIONS

A review of literature concerning hearing-impaired students cognitive abilities suggest that a number of common perceptions are, in fact, misperceptions. Perhaps the greatest challenge park interpreters face in programming for hearing-impaired students is overcoming communications barriers and "relating to" (to use Tilden's language) their information-processing modalities. Park interpreters possess a lifetime of experience with verbal-sequential language encoding and may find it difficult to understand visual-spatial encoding systems.

Knowledge of sign language by park interpreters admittedly would be useful. However, it is assumed here that such a requirement is often impractical. Further, hearing-impaired students visiting park and nature center areas are generally accompanied by sign-language interpreters (usually their teachers), who can facilitate communication. Yet, based on what is presently known about cognitive processing in hearing-impaired individuals, we can tentatively propose two principles for park interpretation directed toward hearing-impaired students.

VISUAL MEDIA

First, interpretation for hearing-impaired students should be highly visual. Several studies suggest that the hearing-impaired rely on, in Kretschmer and Kretschmer's (1978) words, visual-spatial processing. Visual media is necessary to take advantage of these processing needs. For example, teachers of the hearing-impaired report that visual media is important to conveying sequential information. They note that time concepts (such as "then" and "next") are difficult for hearing-impaired children to understand when presented through language (including signed language) but are more readily understood when presented visually.

Second, interpretation for hearing-impaired students should involve direct interaction with environments, processes, and objects being described. Direct involvement can communicate not only concrete information, but may be an important source of acquiring abstract concepts.

Teachers possess in-depth knowledge of their students which facilitates learning experiences. However, traditional sender-receiver models of communications must be modified to take into account a mediator who translates spoken English into signed language. One implication of mediated communications concerns to whom park interpreters should address their comments. The information-processing model highlights the need for attention in message encoding.

This is of particular concern when communicating with hearing-impaired students because of the park interpreter's need to orally communicate with a language translator (teacher) coupled with the students' need for a high degree of concentration for reception of manual communication (Sanders 1988). Implicit in this dilemma is the potential for divided attention. As a park interpreter, to whom do you direct your message? How animated and/or expressive do you get with your body language?

TECHNIQUES

Techniques such as alternating brief periods of spoken communication and modeling are reported to be of value. Role playing such as pretending to be animals, trees, stars, the sun, the wind, hot or cold and acting out processes may also be useful. However, research directed toward developing new techniques and evaluation are needed.

Hearing-impaired children possess limited syntactical abilities for English (Rodda and Grove 1987). Park interpreters should structure their communications to fit the syntactical abilities of hearing-impaired students and ease the translation burden from spoken English to signed language. Simplified subject-verb-object sentence structure and limited use of transformations can be helpful in this regard (Diebold and Waldron 1988). Hearing-impaired students also exhibit delayed acquisition of verb forms (Ivimey 1981). Structuring messages to place verb forms into clusters of similar form may facilitate translation and message comprehension.

Park interpreters often use question and answer techniques to involve students and elaborate upon concepts. However, certain question forms such as "WH" questions (who, what, when, where, why, and how) tag questions (a declarative sentence followed by a partial question such as "Johnny pulled the cat's tail, didn't he"?) (Quigley, Wilbur, and Montanelli 1974) and incomplete statement format questions (LaSasso 1979) are particularly difficult for hearing-impaired students to understand. These difficulties are inherent in the syntax of the questions themselves rather than comprehension of topical material upon which such questions could be formulated.

TEACHERS OF THE HEARING-IMPAIRED

Teachers of the hearing-impaired suggest that question and answer sessions involving these question forms should be avoided because students find them difficult and frustrating. Alternative involvement and elaboration techniques might include: limiting questions to yes-no or other multiple choice format, and adding items to a list or sequence of events. These and other issues relating to syntactical abilities and their implications for park interpreters need further research.

Our behaviors toward others are often guided by our beliefs about them. Previous to an encounter with hearing-impaired students, park interpreters should make an honest examination of their beliefs, perceptions and feelings concerning the hearing impaired. Honest communication about those beliefs with the group's teacher prior to the interpretive encounter can help in program preparation and delivery. The interpreter may find that he or she has given too much or too little credit to the group's abilities. Honest communication can facilitate finding the right mix.

A MESSAGE OF SPECIAL CONCERN

In a related vein, Sanders (1988) has noted that hearing-impaired children typically have low levels of self esteem. Significant sources of low self esteem in hearing-impaired children include conscious and unconscious messages sent by parents and others. A message of special concern is that hearing-impaired children will be accepted only if they act like hearing children—an unduly burdensome task. Teachers of the hearing impaired have learned that esteem enhancement is one of their key activities.

Park interpreters can aid in this process by structuring programs in such as way as to provide success-related feedback. Role-playing games and other activities fostering creative thinking can provide learning experiences without the potentially esteem-damaging consequences of being faced with right and wrong answers.

Park interpreters should be aware of and mentally prepared to handle unexpected behaviors that hearing-impaired students may exhibit. Hearing impaired students disproportionately exhibit nonnormative (particularly of an impulsive and egocentric nature) behaviors associated with delayed psycho-social development. Based on this tendency we propose a third principle of interpreting for hearing-impaired students: avoid norm referencing hearing-impaired student's behavior with that of their normally-hearing age mates.

Delayed psycho-social development exhibited by hearing-impaired students may be suggestive of needed interpretive content. Park visitors sometimes engage in destructive behaviors because they are unaware of park rules or the consequences of their actions to park environments (Gramann and Vander Stoep 1987, Vander Stoep and Gramann 1987). This may be true for hearing-impaired students who may have been denied access to information regarding proper behavior in parks. Interpretive content regarding the most basic environmental ethics should be considered.

SUMMARY

Lewis (1980) noted that park interpreters are sometimes apprehensive toward working with special populations. Fear and uncertainty were cited as contributors to such apprehension. This paper has sought to consider park interpretation for hearing-impaired students within a theoretical framework of cognition and deafness and suggest implications for practice and research. The present state of knowledge suggests that hearing-impaired students utilize the same cognitive faculties in a manner similar to that of their normally hearing counterparts but the *mode* of processing is highly visual and environmentally interactive.

Research also suggests that hearing-impaired students will not perform as well as their normally-hearing age mates when tasks or material is language dependent. Hearing-impaired students may exhibit behavior characteristic of delayed psycho-social development.

On these bases three principles of park interpretation were proposed. **First**, interpretation for hearing-impaired students should be highly visual. **Second**, interpretation for hearing-impaired students should involve direct interaction with environments, processes, and objects being described. **Finally**, interpretation for hearing-impaired students should avoid norm referencing of their behaviors with those of their normally-hearing age mates.

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VISITOR EVALUATIONS OF AN HISTORIC SITE EXPERIENCE

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ABSTRACT: A study of visitors to an historic site was conducted using a self-administered visitor survey. Information was collected on visitor characteristics, satisfaction with the trip and satisfaction with interpretive talks. Results indicate that most visitors were with family groups and had an historical orientation. They viewed an historic site visit as very important to their trip. They were also very satisfied with the overall trip and interpretive programs.
KEYWORDS: interpretation, historic sites, interpretive evaluation, historic attractions.

INTRODUCTION

Many visitor attractions depend on cultural resource characteristics, including historic buildings and sites, archaeological sites, and man-made institutions such as universities and convention centers, to help attract visitors. Gunn (1988) defines cultural resource assets as "historic sites, shrines, historic buildings, ethnic areas, and archaeological sites". Historic sites constitute a major component of cultural resources.

In the United States, although history has been an important topic for interpretation, in the U.S. National Park Service little interest was shown in cultural attractions until the 1960s. The focus of U.S. tourism had been natural resource attractions (Gunn 1988).

In recent years there has been a growth in public interest and activity in historic preservation in the U.S. (Wiener 1980). This has resulted in a great increase in the value of cultural resources to visitors. Resource bases such as historic buildings and sites are becoming quite important as attractions (Gunn 1985). Attendance at historic sites appears to be increasing due to an increased interest in history and historic preservation (Tighe 1985). For example, the National Trust for Historic Preservation reported a 25 to 30 percent attendance growth per year at their historic houses in the U.S. from 1982 to 1984 (Mawson 1984). A study by Makens (1987), although limited, concluded that U.S. historic sites host more than 100 million visitors a year and rank as primary visitor attractions. Finally, Andereck (1990) concludes that visitation to historic areas has substantially increased since 1960, and such sites have maintained their significance as visitor attractions.

HISTORIC SITES

National parks, monuments, and historic sites have been major attractions since 1916 when the National Park Service was established (Gunn 1988). National park areas attract millions of Americans every year, often being primary destinations. Additionally, National Park Service sites are often major destinations for international visitors (Andereck et al. 1989). At least 10 percent of all overseas travellers to the United States visit a national park (Baker 1986).

Intuitively it would seem that historically oriented National Park Service (NPS) sites are important as visitor attractions. Few studies, however, have focused specifically on visitor evaluations of historic site visits. The purpose of this paper is to look at visitor satisfaction with various aspects of a visit to one specific national monument.

FORT SUMTER

Fort Sumter National Monument was selected as the site for the study. Visitors take a half hour boat ride to the Fort located in Charleston Harbor. After departing from the boat, visitors gather inside the fort for an interpretive talk that provides a brief history of the fort and are then free to walk around the fort and visit the museum. Total time spent at the fort is one hour. Visitors then reboard the boat and return to the mainland.

METHODS

The population of the study consisted of visitors over 14 years old from June 13, 1987 to August 16, 1987. The minimum age was chosen because of the complexity of the questionnaire. IA random sample of individuals from this population was taken on the tour boat following a visit to the fort. In order to take a random sample, seats or specific areas in standing sections of the boats were pre-selected as sampling points.

The points were selected to represent a cross-section of boat areas from front to back and side to side. Visitors were approached by the researcher and asked to complete a questionnaire. Questionnaires were then picked up by the researcher. The researcher was available for questions. From 10 to 13 visitors were selected from each surveyed boat trip. Some additional data were collected by the researcher, such as time of day, number of visitors and length of interpretive talks.

Three or four boats a day were sampled. A rotating schedule was developed that attempted to represent proportions of visitors from the three boats and days of the week as accurately as possible. Logistical considerations did limit scheduling to some extent. A total of 151 boat trips to Fort Sumter were surveyed. During the data collection period 1,687 questionnaires were completed by visitors. The response rate for the survey was 96 percent.

RESULTS

VISITOR CHARACTERISTICS

Most visitors to Fort Sumter during the summer of 1987 travelled in family groups with children (49.5%), with a spouse only (19.3%), in family groups without children (10.6%), or with friends (10.4%). The majority were in groups of two to five people (81.0%).

Table 1. Historical orientation of visitors to Fort Sumter.

Historical orientation	Frequency	Percent
Reasons for visiting Fort Sumter (n=1,686)		
Historical significance	1,399	83.0
Boat ride	518	30.7
Family wanted to visit	482	28.6
Friend suggested	330	19.6
Advertising	138	8.2
Other	148	8.8
Frequency of visits to historic areas (n=1,666)		
Very often	203	12.2
Often	377	22.6
Occasionally	826	49.6
Rarely	193	11.6
First time	68	4.1
Number of previous visits to Fort Sumter (n=1,675)		
0	1,521	90.8
1	33	2.0
2	87	5.2
3	23	1.4
4 or more	11	0.7
Civil War as a hobby or special interest (n=1,684)		
Yes	909	54.0
No	775	46.0

Visitors from every state in the U.S. except Idaho, Wyoming and Vermont visited Fort Sumter in the summer of 1987. The states with the highest representation were South Carolina (14.8%), North Carolina (11.6%), Georgia (8.9%), Florida (7.0%) and Ohio (6.8%). In addition, visitors from 19 other countries were represented, making up 2.1 percent of the sample population.

Some past research has found that the main motivation for visiting historic houses is for the "atmosphere" of the place (Tighe 1985; Mawson 1984). This does not appear to be the case at Fort Sumter. A majority of respondents (83.0%) indicated that the historical significance of the site is their main motivation (Table 1).

Almost 50 percent of the respondents said that they visit historic areas occasionally. Substantial numbers reported that they visit such sites often or very often (34.8%), although few (9.3%) have previously visited Fort Sumter. Also, quite a large number of visitors indicated that Civil War history, the focus of interpretation at Fort Sumter, is a hobby or special interest (Table 1).

FORT SUMTER VISIT

Nearly half of the fort visitors (45.4%) responded that the Fort Sumter visit was a very important aspect of their trip to Charleston. Another 30.2 percent said that the visit was somewhat important. About one fifth (20.4%) indicated that the visit to the fort was the major reason for their visit to Charleston. Most visitors (65.7%) planned the Fort Sumter trip before they came to Charleston (Table 2).

Table 2. Visitor perceptions of importance of a visit to Fort Sumter.

Importance	Frequency	Percent
Importance of visit to Fort Sumter (n=1,549)		
Very important	703	45.4
Somewhat important	468	30.2
Not a major reason	378	24.4
Fort Sumter was the major reason for trip to Charleston (n=1,549)		
Yes	316	20.4
No	1,233	79.6
When decision was made to visit Fort Sumter (n=1,657)		
When planned Charleston trip	1,089	65.7
After arrived in Charleston	537	32.4
Other	31	1.9

GENERAL VISITOR EVALUATIONS

Conducting visitor evaluations of trips to attractions is very helpful in determining management changes that may be necessary. As part of this study, visitors were asked several questions pertaining to their satisfaction with the trip. Well over half of the respondents (58.2%) were mostly satisfied while over one third (36.6%) were delighted (Table 3).

When asked if the trip to Fort Sumter was worth the time spent, almost all of the respondents (89.2%) reported that it was worth the time (Table 3). Many respondents also felt that the trip was worth the money (43.7%), at the time $7.00 for an adult (Table 3). Finally, when asked what aspect of the trip they liked the best, visitors indicated that free time to walk around (32.5%), the interpretive talk (29.6%), and museum exhibits (24.6%) tended to be the parts of the visit they liked the best (Table 3).

INTERPRETIVE EVALUATION

The interpreter's talk was another aspect evaluated by respondents. The length of the interpretive talk given by the rangers at Fort Sumter ranged from 5 minutes to 13 minutes. The median talk length was 8 minutes while the average was 8.6 minutes. Most talks were held in the sally port at the entrance to the fort, a small enclosed area in the casemates. A few talks for especially large groups were held on the open parade ground.

Generally, visitors' evaluations of the interpretive talk were positive. The talk was evaluated on the following points: the welcome by the ranger, the length of announcements, ranger's enthusiasm, speaking style, length of talk, attention holding ability, ranger's ability to personally relate to the visitor, grammar, and visitors' ability to hear the talk. Each item was ranked on a five point scale with 1 being not satisfied and 5 being very satisfied. On each of the items, over half of the respondents rated the talk a 5. Figure 1 summarizes the evaluations of the interpretive talk.

Table 3. Satisfaction with trip to Fort Sumter.

Satisfaction	Frequency	Percent
Overall satisfaction (n=1,668)		
Delighted	604	36.2
Mostly satisfied	971	58.2
Mixed feelings	88	5.3
Mostly dissatisfied	5	0.3
Terrible	0	0.0
Time spent on visit (n=1,637)		
1 - Worth the time	1,139	69.6
2	321	19.6
3 - Average	161	9.8
4	13	0.8
5 - Waste of time	3	0.2
Cost of the trip (n=1,624)		
1 - Costs too much	127	7.8
2	218	13.4
3 - Average	569	35.0
4	122	7.5
5 - Worth the money	588	36.2
Part of visit liked best (n=1,619)		
Free time	526	32.5
Interpretive talk	480	29.6
Museum exhibits	398	24.6
View from fort	136	8.4
Other	79	4.9

Table 4. Analysis of variance for two characteristics of interpretive talk.

	Ability to Hear		Length of talk	
Visitor satisfaction with talk length	Mean visitor group size[1]	n	Mean talk length[2]	n
1 (not satisfied)	189.21 A	62	8.10 A	29
2	177.21 AB	82	8.00 A	49
3	166.63 B	254	8.41 A	195
4	155.43 C	418	8.48 A	381
5 (very satisfied)	152.65 D	846	8.86 B	711

[1]F = 12.16; Significance = 0.000; n = 1,662

[2]F = 9.10; Significance = 0.000; n = 1,365.

Note: means with the same letter are not significantly different at the .05 level.

Ability to hear the ranger was the point on which evaluations were the lowest. Analysis of variance (ANOVA) indicates that ability to hear was strongly related to the number of people in the group (Table 4). As group size increased, satisfaction with ability to hear decreased. The average size of visitor groups during the summer of 1987 was 155 people. The ANOVA suggests that average sized groups were satisfied with their ability to hear the ranger, but as group sizes increased into the upper one hundreds (175 and above), ability to hear decreased. This finding is not surprising since larger groups result in more visitors being farther away from the ranger. Also, there often is a higher level of peripheral noise with larger groups.

A second evaluation point on which some improvement is indicated is the length of the talk. The interpretive talks at the fort ranged in length from 5 to 13 minutes, with an average of 8.6 minutes. Analysis of variance on length of interpretive talks suggested that visitors preferred talks of average length or *longer* (Table 4).

A final point that was evaluated lower than other points was the ability of the ranger to personally relate to the visitor. This was included in the evaluation to attempt to determine how well interpreters were addressing Tilden's (1977) principle of interpretation that states: "Any interpretation that does not somehow relate to something within the personality or experience of the visitor will be sterile " (p. 11). Evaluations indicate that interpreters at Fort Sumter needed to work on this point.

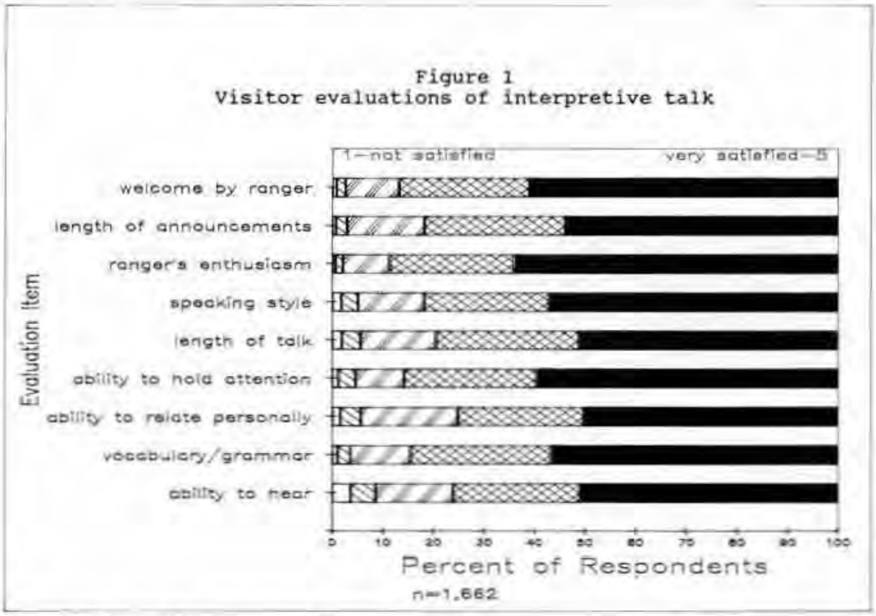

Fig. 1. Ranger Evaluations of Interpretation

DISCUSSION AND CONCLUSIONS

Families are the predominant social group visiting Fort Sumter National Monument during the summer months. The strong family orientation evident among summer visitors suggests that interpretation be targeted toward the family. Provision of interpretation specifically for children might also be desirable considering the large number of family groups with children.

Although visitors from all over the U.S., as well as some international visitors go to the fort, the site tends to be a regional park resource attracting visitors mainly from the southeastern and mid-eastern states. This may suggest that a majority of visitors have a higher interest in Civil War parks and history than individuals from other regions. The possibility of higher interest levels is also supported by the historical orientation of many fort visitors. Many respondents reported that they have an interest in history, especially the Civil War period. Interpretation at this time focuses heavily on the Civil War period, and this is apparently appropriate to the interests of many visitors.

Most of the people at Fort Sumter are first time visitors, although they are experienced historic site users. It thus seems that extensive exhibit and talk alterations are not a necessity unless attracting repeat visitors is a desirable goal.

Respondents suggest that, to them, Fort Sumter is a significant cultural resource base in the Charleston area. Visiting the site is at least somewhat important to most of the visitors that go to the fort. Also, the significance of one fifth of the visitors reporting that a visit to the fort is the main reason for their trip to Charleston cannot be overlooked. Assuming that this figure holds true for the entire year, about 40,000 people in 1987 visited Charleston mainly to visit Fort Sumter. The large number of people that planned to visit the fort before arriving in Charleston again suggests that Fort Sumter is a major attraction. The importance that visitors place on interpretive talks and museum exhibits at the fort points to the necessity of high quality interpretation.

People are mainly interested in the historical significance of the fort, presumably the role it played during the Civil War. Providing them with this information in an interesting and effective way is critical to maintaining visitor satisfaction. At the time of the study, visitors tended to be satisfied with their trip. Interpretation undoubtedly played a major role in the high levels of satisfaction. The maintenance of high quality interpretation is, obviously, a necessity for continued visitor satisfaction.

POSITIVE EVALUATIONS

The positive evaluations of interpretive talks indicate that few changes need to be made in the delivery of talks. Three specific items that were rated lower than others were length of the talk, ability to relate personally, and ability to hear.

Additional analysis for ability to hear indicates that this was more of a problem for larger groups. It is apparent that when addressing larger groups, measures to improve ability of visitors to hear need to be made. Although this seems intuitive and is most likely true for any interpretive presentation, the study documents the effect ability to hear has on satisfaction. Based on this study, the point at which the group begins to get too large for all members to hear well is about 155 people.

Findings on talk length suggest that there may be an ideal length for an interpretive presentation. Presentations that are too short, particularly for groups with a special interest as is the case with many fort visitors, may not be detailed enough to satisfy many visitors. Alternatively, talks that are too long are also undesirable, probably because visitors' attention waivers, children get restless, and less free time is available to walk around the fort and visit the museum. Interpreters that conduct talks may wish to evaluate the timing of talks to determine the optimum length.

Finally, it appears that interpreters at Fort Sumter need to improve their ability to relate to visitors personally. This is a difficult task in light of the large number of varied people visiting the fort. It is hoped that the demographic information collected in this study is helpful with this point.

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A MARKETING ANALYSIS OF INTERPRETIVE PROGRAMS AND FACILITIES AT EMPIRE FARM, LAND BETWEEN THE LAKES, KENTUCKY

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ABSTRACT: The study utilized a personal interview questionnaire and market segmentation procedure in analysis of the Empire Farm interpretation facility. Empire farm by design was a demonstration in self-sufficient living, yet study results indicated that many visitors were attracted to the farm by its live animal component. Also, visitors expressed a need for more programs, activities, and things to do. Five target segments were identified through hierarchical cluster analysis. These segments were characterized as "young professionals," "highly active," "animal appeal," "looking for more," and "northern-half visitors," respectively.
KEYWORDS: segmentation, target segments, cluster analysis, self-sufficiency, marketing, media.

INTRODUCTION

Marketing is the process of determining customer wants and using that information to create products that satisfy the targeted customers (Levitt et al., 1983). The concept of marketing is just as important to interpretive services as it is to the business community. The importance of marketing as a field of study was broadened beyond business applications to include all organizations during the 1960's (Kotler and Levy 1969).

Recreation enterprises in both public and private sectors are experiencing increased competition for recreation consumers. As the number of recreation enterprises has grown, attracting customers and developing repeat customers has become increasingly difficult. Visitor interest and demand for activities change over time and the recreation manager must be prepared to meet these changing needs. Through an understanding of the outdoor recreation user, managers can be more effective in the delivery of interpretive programs and services to satisfy users (Brown et al., 1973).

Tennessee Valley Authority's (TVA) Empire Farm, located in Land Between the Lakes (LBL), Kentucky, was designed to demonstrate and interpret self-sufficient living methods. Empire Farm visitation peaked in 1976 with 70,469 annual visits and then declined to 35,287 by 1987. This marketing analysis was undertaken to determine if decreasing visitation reflected visitor dissatisfaction, to determine market segments utilizing the facility, and to identify Empire Farm visitor characteristics for program planning purposes.

METHODS

DATA COLLECTION

Personal interviews of Empire Farm visitors provided the major source of data for this study. The time period for interviewing was Empire Farm's summer season, mid-May to September 1. Interviews were obtained during the facility's normal hours of operation, 9 am to 5pm daily. The total number of interviews recorded was the maximum number attainable where sample size ultimately depended on visitation levels and length of time required to complete each interview.

The interview questionnaire consisted of two separate portions: a series of demographic and socioeconomic descriptions, and a series of questions revealing previous visitation habits, marketing information, and importance placed on activities.

As an individual or group completed a tour of the facility, they were approached for a possible interview. Principal adults from within groups and families served as primary responders to the interview questions. Respondents were selected on the basis of their

Table 1. Segments formed through hierarchical cluster analysis of respondent socioeconomic characteristics.

	Segment						
Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Employed	105	24	24	0	24	5	0
Unemployed	25	5	11	1	9	19	1
Blue Collar	49	9	21	1	12	11	1
White Collar	81	20	14	0	21	13	0
Non College	51	19	19	1	18	16	1
College	79	10	16	0	15	8	0
Average Age	34.4	44.6	22.9	83	53.2	64	10
Race[a]	6-A 1-B 123-C	29-C	35-C	1-C	32-C 1-D	24-C	1-C
Average Income[b]	4.0	3.8	2.2	4.0	4.6	2.9	2.0
Segment Size	130	29	35	1	33	24	1

[a] **A-Native American, B-Black, C-White, D-Other**

[b] **2.0-2.9 $10,000-19,999**
3.0-3.9 $20,000-29,999
4.0-4.9 $30,000-39,999

willingness to participate, regardless of sex, age, or race. Upon completion of an interview, the next individual or group to exit the facility was approached for a possible interview.

MARKET SEGMENTATION

Proper planning and management of any recreation enterprise requires accurate knowledge of the customer, or visitor. An integral component of marketing which reveals this kind of information is known as "market segmentation" (Mason and Ezell 1987). By dividing a market (interpretive service customers) into fairly homogeneous submarkets having similar needs (segments), the attributes of a product or service can be designed to meet those specific needs.

In addition to determining market segments utilizing Empire Farm, target segments for future marketing strategies were also identified. Crompton (1983) called the selection of target segments a key marketing decision. It is essential that attention be focused on appropriate market segments, otherwise efforts will be wasted on people who have little likelihood of becoming customers (Crossley and Jamieson 1988).

Frequencies of responses were compiled from the questionnaires and used as a data base from which clusters of respondents with similar characteristics (segments) could be formed. Hierarchical cluster analysis was applied to response variables assembled into question subject areas describing socioeconomic characteristics, importance of programs, aspects of Empire Farm which brought the visitor, aspects of Empire Farm disliked, and visitation of other LBL facilities. From the total number of segments developed for each questioning area, a target segment was chosen based upon size, reachability, and Empire Farm program objectives and characteristics.

RESULTS

THE SAMPLE

In the summer of 1988, 253 personal interviews representing 879 Empire Farm visitors were completed. For the interview time period, May 27 to July 17, 8.4% of the general visitation population was sampled.

Respondents were generally well educated; over 90% were high school graduates and over 50% had additional education. Most respondents were employed full-time, homemakers, or

Table 2. Hierarchical cluster analysis of repsondent ratings of activities available at Empire Farm.

Activity	Segments[a] 1	2	3	4
Watching Animals	4.5	2.9	4.9	4.6
Petting Animals	4.5	3.0	4.7	4.6
Attending Programs	4.1	2.7	2.0	2.0
Visiting with Staff	3.8	2.9	2.6	3.1
Walking Around Farm	3.7	3.0	3.7	4.8
Taking Pictures	4.2	1.9	1.8	5.0
Learning About Animals	3.8	3.0	3.1	3.3
Looking at Displays	3.8	3.1	3.5	3.8
Looking at Scenery	3.9	2.9	3.8	4.2
Watching Children Play	3.4	2.5	2.8	2.7
Segment Size	139	60	26	28

[a]Values within segments are means. Ratings coded as very important-5.0, important-3.0, not important-1.0.

retired. Nearly 60% of those employed worked in white collar positions such as managers or administrators. Respondents earned on average between $20,000 and $30,000 annually. Additionally, of the 253 interviews recorded, 55% of the groups included children and 68% had never visited the facility before. Most survey respondents came from 3 states: Kentucky, Tennessee, and Illinois.

MARKET SEGMENTS SEGMENTS—SOCIOECONOMIC.

Market segmentation results provided a well defined picture of the Empire Farm visitor which suggested specific groups for targeting in future marketing strategies. Variables utilized from the survey for formation of socioeconomic segments included employment, occupation, education, age, race, and income. The sample was divided into groups or segments with one segment substantially larger (Table 1). Segments are most easily distinguished from one another by average age.

From a marketing position, segment 1 represented the greatest feasibility for selection as a target segment and was named "young professionals." In general, members of this large segment were young, white collar workers who had attended college and had relatively high incomes. Additionally, 71% of this segment brought children to the farm.

SEGMENT ACTIVITY IMPORTANCE.

Respondents were presented with a list of activities available at Empire Farm and asked to rate the importance of each. Activities receiving the highest concentrations of "very important" ratings were petting animals, watching animals, and taking pictures.

Hierarchical cluster analysis of respondent activity ratings revealed a sizeable segment (segment 1) which viewed all activities as important and rated activities associated with animals, attending programs, and taking pictures highest (Table 2). This segment was selected for targeting in future marketing strategies and was named "highly active." All segments produced were similar in many respects except segment 2 which rated activities much lower overall than the other segments.

SEGMENT—ASPECTS WHICH BROUGHT VISITORS TO EMPIRE FARM.

From a provided list of options, respondents were asked to rank the 3 most important aspects of Empire Farm which brought them to the facility as 1, 2, or 3; 1 being the top choice. "Live animals" by far received the highest number of top rankings while "never been to Empire Farm before" ranked a distant second. "Educational theme," "variety of things to do," and "live animals" received the most second rankings.

Eight segments or groups of visitors were produced by hierarchical cluster analysis of respondent rankings (Table 3). Segment 1 visitors, by far the largest segment, were brought to the farm primarily by live animals. Other contributing aspects included "educational theme," "variety of things to do," and "never been to Empire Farm before." This selected target segment was named "animal appeal."

A supplementary question asked of 201 respondents and not included in cluster analysis was: "Why did you come to Empire Farm today?" The primary responses (26.9%) was "brought kids to see the animals." Interestingly, crafts, farming, self-sufficiency, and education, major thrusts of Empire Farm's programming, received just 7.5% of responses.

SEGMENT—ASPECTS OF EMPIRE FARM DISLIKED

Respondents of the Empire Farm survey were provided with a list of options and asked to rank the top 3 they disliked most. The primary response was a dislike for the "variety of things to do," followed closely by "special program offerings" and "facility's visual theme." The dislike of these responses indicated a dissatisfaction with the limited variety of activities and special programs.

Hierarchical cluster analysis of the dislike options revealed a sizeable segment (segment 1—62% of respondents) which had few complaint areas (Table 4). Those areas most disliked included once again "variety of things to do" and "special program offerings. This group also expressed dissatisfaction with the extent of the farm animal collection and suggested acquiring more live animals, a petting area, interpretive programs involving the animals and improved cage conditions for some animals.

SEGMENT—VISITATION. The possibility exists that there are types of Empire Farm visitors which characteristically frequent specific LBL locations. Identifying these locations can help direct marketing strategy for promotion of Empire Farm within LBL.

Hierarchical cluster analysis of visitation data resulted in the formation of 7 segments. The largest segment with 43% of the visitors typically visited very few facilities other than Golden Pond Visitor Center. The second group selected for targeting was named "northern-half visitors," whose members frequented several locations in the northern half of LBL.

MARKETING PROFILE

Most respondents found out about Empire Farm through LBL information stations (39.3%) or by word of mouth (14.6%). Respondents were asked if they had ever seen or heard information about Empire Farm. Responses indicated that 25% had previous access to information about Empire Farm with most seeing information in newspaper (9.9%), LBL publications (6.7%), or television (2.8%).

The sign system leading to Empire Farm received "good" or "excellent" ratings from nearly 90% of the respondents. Those who had trouble with the signs indicated that some signs were confusing, crowded, or inappropriately placed.

The 20 respondents who attended a program at Empire Farm found out about the program at LBL information stations (40%), newspapers (25%), or in an LBL campground (15%). Most respondents felt that the quality of these programs was good with only a few exceptions.

CONCLUSIONS

Many visitors came to the facility to provide their children with activity, learning, and entertainment. Many also came because they visited when young, or they had never been before. Overall, visitors showed a high interest in animals, but felt Empire Farm needed more to do and see.

These characteristics begin to explain the decreasing visitation trend as well as low repeat visitations at Empire Farm. The theme and interpretive emphasis at Empire Farm focuses on self-sufficiency. While self-sufficiency is important to some visitors, it is certainly not the main reason they visit. During the study , Empire farm had only one staff interpreter who was also the facility manager. Self-sufficiency could be a very interesting topic if activities and programs were scheduled frequently. Unfortunately, as survey respondents suggest, activity level at the farm was very low due to personnel needs. As simply a museum on self-sufficiency, the program has a limited future.

Effective marketing media for Empire Farm should include newspaper and radio with a promotional strategy developed around all the facilities in LBL's northern half. First and foremost, the Empire Farm brochure should reflect what a visitor's experience at the facility will be. Many of the programs advertised occur only infrequently.

Market segmentation points directly at live animals as a drawing force. Concentrating programs in this area would certainly be of interest to visitors.

Lastly, while pure interest in self-sufficiency was not gauged to any degree in this study, it was apparent that interest was rather low. A possibility for Empire Farm is to shift themes toward resource renewal, recycling, etc. for programming. At the present time, interest is high in this subject, and Empire Farm may need to shift themes periodically to keep pace with changing interests.

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SIGNS, TRAILS, AND WAYSIDE EXHIBITS: FUTURE RESEARCH NEEDS

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ABSTRACT: Professionals developing interpretive signs, trails, and wayside exhibits need to understand and apply research to improve media effectiveness. According to Moore (1989), most research does not answer practitioner's questions or suggest ways to apply research findings. Applied research addressing specific questions is needed.This study identifies and prioritizes applied research questions. A literature review and telephone interviews with interpretive professionals who create interpretive signs, trails, and wayside exhibits produced a list of research questions. Ninety-eight research questions were ranked on a Likert scale as to their importance for immediate research. (A paper describing the study and prioritized research questions will be provided in this session).
KEYWORDS: sign, trail, wayside exhibit, future research, research priorities.

URBAN NATURE CENTERS: WHAT DO OUR CONSTITUENTS WANT AND HOW CAN WE GIVE IT TO THEM?

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ABSTRACT: A mail survey was conducted in 1989 of urbanites in seven of Missouri's metro areas. Items were included to assess current use of and expectations for interpretive facilities. Respondents were presented a list of eight outdoor opportunities or facilities , and asked whether a need existed for more of these within 20 minutes of their homes. The top-ranking need from this list was "a nature center." Respondents were asked to express their preferences for 12 nature center services or activities, ranging from "being alone with nature" to "buying food at a snack bar." Two focus groups were conducted to provide insights into survey findings in black involvement in outdoor recreation. Results confirmed that urbanites' expectations for nature center experiences are diverse, and warrant programs tailored for specific clienteles.
KEYWORDS: focus group, markets, nature center, planning, survey

INTRODUCTION

Studies have evaluated what people do while visiting interpretive centers and whether or not they are satisfied with interpretive center offerings (Lime 1988, Missouri Department of Conservation 1989). Other studies have focused on the types of programming that interpretive centers offer to groups and to the public (Rakow and Lehtonen 1988). To our knowledge, however, no one has asked a randomly selected group of people, who may or may not have ever visited a nature center, about their feelings regarding nature centers or specific nature center features.

MISSOURI DEPARTMENT OF CONSERVATION

The Missouri Department of Conservation is charged with management of the state's fish, forests, and wildlife. Hunting and fishing licenses sales provided most of the Department's operating budget until 1976 when Missouri voters approved a constitutional amendment adding one-eighth cent to the sales tax to provide funding for an expanded conservation program (Brohn 1977). Urban residents voted most strongly for the amendment.

Because of the strong urban support, MDC was interested in learning how fish, forests and wildlife fit into urbanites' lifestyles, and how, as an agency, we might enhance their opportunities for outdoor experiences. To help answer these questions, urbanites in seven Missouri cities were interviewed by mail in a major study of their attitudes toward fish, forests and wildlife, and MDC's performance in managing those resources. Because one of the expanded programs promised with the sales tax amendment was the development of "a system of Conservation Interpretive Centers. [with] informed personnel to interpret for visitors" (*Missouri Conservationist* 1975), questions about nature centers were included in the survey.

METHODS

In late summer, 1989, about 7,800 questionnaires were sent by mail to a random sample of adults in seven Missouri cities: St. Louis, Kansas City, Springfield, Columbia, St. Joseph, Joplin, and Cape Girardeau. Black neighborhoods in St. Louis and Kansas City were oversampled to ensure response allowing generalizations to the black citizenry. Of the

7,800 questionnaires mailed, 6,367 were deliverable.

After three mailings, 3,427 completed questionnaires were returned (53.8% response). Response varied by city from 54.2% in St. Joseph to 66.6% in Columbia. However, particularly low response rates were obtained in black neighborhoods in St. Louis (27.3%) and Kansas City (31.5%). Overall response was comparable to other similar surveys (Petchenik and Morrow 1989). No follow-up study of non-respondents was conducted, so we can offer little objective appraisal of non-response bias.

Because of low black response to the survey, and because of our special interest in understanding the recreational interests of minority populations, two focus groups in St. Louis were conducted to provide insights into the survey findings on black involvement in outdoor recreation. Each focus group was composed of 14 middle-income, black adults who were asked recreation-oriented questions developed by MDC in consultation with Fleishman-Hillard.

RESULTS AND DISCUSSION

Survey responses were weighted to produce estimates for the seven-city area, each city, and each demographic variable by which comparisons were made.

CURRENT USE OF EXISTING FACILITIES The Department of Conservation currently operates nature centers in two of the cities surveyed: Burr Oak Woods Nature Center, which is located about 18 miles east of downtown Kansas City in Blue Springs, and the Springfield Nature Center in Springfield, MO. In 1989, Burr Oak Woods Nature Center hosted 104,536 visitors and the Springfield Nature Center hosted 113,632. Numbers alone would seem to indicate that both centers are about equally popular with area residents. However, when asked which of these centers a family member had visited in the 12 months prior to the survey, only 13.6% of respondents in Kansas City had a household member visit the Burr Oak Woods Nature Center. In contrast, 52.2% of Springfield respondents indicated that a household member had visited the Springfield Nature Center during the same time period. Both centers offer the same opportunities to visitors, including hiking trails, exhibits, interpretive programming for organized groups and the public, and naturalist staff.

COMMUNITY AWARENESS

The difference in community awareness between the Springfield and Burr Oak Woods nature centers may be due in part to their locations. Springfield, about one-fifth the size of Kansas City, is a well-defined community small enough to maintain a "hometown" atmosphere, and the nature center is within a 25 minute drive of virtually all residents. As a result, residents there have readily identified the nature center as a community facility; it is "their" nature center.

Kansas City, by contrast, is not a single community, but rather a large center city and outlying communities. With its location in Blue Springs, Burr Oak Woods does not "belong" to Kansas City residents, nor to the residents of many of the other communities. In addition, while Burr Oak Woods is only 18 miles from downtown Kansas City, it is more than a 20 minute drive from much of the Kansas City metropolitan area. It appears, then, that our constituents want a nature center that is within about a 25 minute drive of their homes, and is part of their local community.

DESIRED FACILITIES

Survey respondents were asked whether a need existed for more of each of the following within 20 minutes of their home: fishing, bird-watching, camping, hunting, picnicking, sightseeing, hiking, and a nature center. The top-ranking desire for the combined data set was for a nature center, with 61.3% of the respondents indicating a need, followed by fishing (58.8%), hiking (57.3%), sightseeing (57.2%), camping (56.0%), picnicking (55.9%), bird-watching (44.8%), and hunting (38.7%). Nature center need varied by community with St. Joseph indicating the highest need (70.3%), followed by Kansas City (67.1%), Joplin (67.0%), Columbia (64.1%), Cape Girardeau (64.0%), and St. Louis (60.1%). Springfield respondents indicated the least need (49.9%), which may reflect in part the opening of the Springfield Nature Center in October of 1988.

By 1991, MDC will be operating nature centers in three of the seven communities identifying a need for a center. The need indicated by more than 64.0% of the respondents in each of the remaining four cities confirms public interest in nature center development in those areas.

DESIRED SERVICES

Survey respondents were presented with a list of 12 selected experiences and opportunities that might be provided at a nature center, and asked whether they would like to do each one. Asking potential visitors what they would like to do at a nature center can assist managers in tailoring nature center programming and exhibits to specific constituencies. Analysis of the data by selected social and economic variables revealed opportunities to do just that (Table 1). Of particular interest to MDC were responses of blacks, senior citizens, and families, because we consider these groups high priority as potential visitors. Single parents were separated from married parents due to possible differences in their activity preferences.

Perhaps not surprisingly, the two most popular opportunities were "see nature exhibits" and "have nature information presented in entertaining ways," ranking in the top three preferences for all five groups. Viewing exhibits is something many interpretive center visitors spend time doing (Lime 1988, Missouri Department of Conservation 1989), and having nature information presented in entertaining ways is not a new concept to most interpreters who use a variety of methods, including storytelling, music and songs, games, props, live animals and other means to "entertain visitors with information" (Christensen 1990). In comparison, a standard interpretive offering—lectures on nature topics—ranked in the bottom seven choices of all groups, except those respondents 55 years old or older.

Table 1. Percentages (and preference ranks) of Missouri urbanites desiring selected experiences and opportunities at a nature center

Opportunity	All Respondents (N=3427)	Non-white (N-325)	Elders > 54 (N=1617)	Single Parents (N=116)	Married Parents (N=726)
See nature exhibits	75.6(1)	69.0(1)	62.4(2)	80.9(2)	81.9(1)
Be alone and experience nature	72.7(2)	53.3(6)	58.6(4)	62.6(6	78.0(2)
Have nature information presented in entertaining ways	70.3(3)	68.8(2)	58.8(3)	82.8(1)	77.0(3)
See nature film	60.2(4)	57.0(3)	62.6(1)	69.3(3)	57.5(6)
Ask questions of a trained naturalist	59.8(5)	55.1(5)	45.0(6)	67.0(4)	66.1(5)
Hike without guide	59.7(6)	30.5(11)	35.6(7)	53.2(8)	70.6(4)
Hear lectures on nature topics	47.1(7)	43.2(10)	45.3(5)	52.2(10)	47.5(9)
Buy fishing or hunting permits	46.7(8)	49.8(8)	31.5(10)	65.4(5)	52.0(7)
Be led on a group nature walk	45.5(9)	51.0(7)	34.1(8)	62.4(7)	48.5(8)
Buy nature books	38.9(10)	29.9(12)	28.5(11)	50.6(11)	45.3(10)
Buy food at a snack bar	38.4(11)	55.5(4)	32.5(9)	52.9(9)	41.3(11)
Buy souvenirs	29.8(12)	48.2(9)	23.5(12)	40.7(12)	35.9(12)

Viewing nature films was also a popular activity, ranking in the top five with all but married parents, where it ranked sixth. Being able to ask questions of a trained naturalist ranked in the top five for all groups, except those over 55, where it ranked sixth (45.0%).

Other activities seemed more popular with some respondent groups than with others. For instance, "be alone and experience nature" was in the top four preferences of those over 55 **(#4)**, all respondents **(#2)**, and married parents **(#2)**, but was the sixth-ranking choice for both blacks and single parents. Hiking without a guide was the fourth-ranked choice of married parents (70.6%), the sixth-ranked choice for all respondents, but the seventh ana eighth-ranked choice for elders and single parents respectively, and the eleventh-ranked for blacks (30.5%).

Of the twelve activities or opportunities, several lacked general support. Being led on a group nature walk ranked seventh or lower for all five groups, and captured less than 50% of the interest of all except blacks (51.0%) and single parents (62.4%). Less than fifty percent of all groups indicated they wanted to be able to buy souvenirs, and being able to buy nature books also ranked low with all groups, though 50.6% of single parents indicated an interest in doing so.

Being able to buy food at a snack bar appealed to less than 42% of the general population, senior citizens and married parents. However that activity ranked fourth for blacks (55.5%) and was also desired by 52.9% of single parents. It is possible that simply providing vending machines would meet most of the needs for these two groups. However, information from the focus groups suggests that perhaps for blacks, the snack bar may fill as much a need for social opportunity as a desire for food.

Buying hunting and fishing permits was of moderate interest for most groups, but ranked fifth for single parents, with 65.4% indicating a desire to purchase fishing or hunting permits at a nature center.

Survey respondents over age 54 did not appear particularly interested in many of the nature center offerings; only four of the 12 potential nature center services listed in the questionnaire received interest from 50% or more of elders. The number one interest of this group was seeing a nature film, followed by seeing nature exhibits, having nature information presented in entertaining ways, and being alone to experience nature.

Perhaps older adults can be encouraged to visit nature centers and to walk the nature trails by providing short, paved loop trails with benches for resting, and marketing the presence of those trails to elders.

Single parents seemed to have somewhat different desires for nature center services than married parents. Married parents were more interested than single parents in being alone with nature (X^2=19.7, df=1, p<0.0001) and hiking without a guide (X^2=21.4, df=1, p<0.0001), both activities enabling them to interact with their children. Single parents, however, were more interested in seeing a film (X^2=8.7, df=1, p=0.0033). In addition, if single parents were to go on a nature walk, they expressed preference for a guided walk where a naturalist can interact with them and their children (X^2=11.7, df=1, p=0.0006). These activities can entertain or engage the children with or without parent involvement, giving the single parent a respite from constant interaction with the children while still enabling the family to share an outing. There were no significant differences in preferences (p>.05) between married and single parents for seeing exhibits and having nature information presented in interesting ways, with both activities highly preferred.

FOCUS GROUP INSIGHTS

Two focus groups of 14 black adults each were interviewed for two hours to gain insights into their recreational pursuits in general and outdoor recreation in particular. The focus group participants had much less interest in nature-oriented recreation than in community or group-oriented activities such as league sports, family picnicking, or social clubs, preferences that are consistent with the findings of others (Meeker et.al 1973, Schroeder 1990).

Fear was one explanation given for their lack of interest in outdoor recreation. Many were afraid of wildlife, including snakes, bears, foxes, skunks, etc, that they felt likely to encounter in the out-of-doors. Fear of racial intimidation was also expressed as a factor. Several participants indicated they didn't camp because "it's not safe for us," or expressed reluctance of "going where we're not in [the] majority." In addition, focus group participants feared random violence. They wanted a safe place to take the family "without all these teenagers around acting crazy."

Security was an important issue for focus group participants. They preferred areas that were well-lighted and where authorities kept track of who went in and out. Generally, they expressed preferences for areas affording opportunities for group interaction and social exchange, where they would feel welcome. They also expressed interest in outdoor settings in which nature, as well as humans, could be controlled.

While hiking without a guide ranked 11th with non-white survey respondents (30.5%), many of the focus group participants indicated they would prefer to hike nature trails without a guide, *providing* certain conditions were met. They felt comfortable hiking alone with their families as long as they had a map to take with them, and as long as someone knew where they were and would look for them if they didn't return when they should.

Many of the participants expressed interest in visiting nature centers and in what nature centers might offer. They were very interested in interactive exhibits, wanting hands-on experiences: "let me touch it or feel it," "get me involved in it,...let me do something." In addition, they were particularly interested in what nature centers and nature center staff could offer their children. Several participants suggested that young black adults might be employed and trained to teach younger black children coming to the nature center. Participants stressed that our best chance of getting parents interested in nature and nature centers was through the children.

Nature centers would seem to provide the safe, family oriented setting that focus group participants indicated they would prefer for outdoor recreation. They offer an outdoor setting in or near the city limits where visitors can learn from indoor exhibits, and can walk paved trails that are clearly mapped and signed and regularly patrolled by staff.

However, though they agreed that nature centers would have a lot to offer to them, focus group participants indicated that they would be unlikely to just visit a site; their participation would need to be invited. Several said that they wouldn't visit an area without some indication that they were welcome there or that it was a safe place to take their families.

They would visit an area if given a special coupon or invitation or if someone they know had been there and recommended it. In addition, they indicated they would feel more welcome if black staff were visible on the area. Based on the focus group interviews, ways that nature centers might encourage minority visitation could include issuing special invitations to church or other social groups, hiring minority staff and actively recruiting minority volunteers.

CONCLUSION

The seven-city survey provides important insights to the services and opportunities that the urban public might want from a nature center. It provides information that can assist managers in developing program and visitation objectives for target audiences. Our results apply only to Missouri, however, and may reflect a midwest bias. Similar surveys should be conducted in other parts of the country.

Even though the survey findings apply only to Missouri urbanites, we feel they do provide useful generalizations for other urban areas as well. Knowing the area from which visitation is most likely to occur can help managers to focus their programming and fundraising or membership efforts. In addition, the survey points out that what we often call the "public" is really many diverse publics, each with different interests and expectations. While most of us intuitively realize this, surveying the general public will identify those publics and provide insights about how to reach them.

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FACTORS AFFECTING CRITICAL RESOURCES ISSUES INTERPRETATION IN U.S. NATIONAL PARKS

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ABSTRACT: The U.S. National Park Service established an interpretive goal of addressing threats to biological diversity. NPS set goals and directions for that initiative. A primary directive was to assess needs, desires, attitudes and perceptions of interpretive managers before planning any specific strategies. A survey questionnaire was mailed to 301 NPS sites. Two hundred and twenty-five responses were received. Data gathered provide an extensive picture of current biological diversity interpretation and projected needs. Also provided were insights into potential barriers to implementing a NPS biological diversity initiative.
KEYWORDS: Biological diversity, interpretation, needs assessment, barriers to change, National Park Service

INTRODUCTION

Most resource management agencies find themselves addressing critical resource issues such as acidic deposition, loss of biological diversity and the potential impacts of global change. In some cases these threats result in deterioration of historical stone monuments or reduced visibility at scenic vistas. Some are more indirect such as the threats to migrating bird populations from destruction of habitats used during tropical wintering. And some are even more perplexing—what will this park look like fifty years from now if massive global climate change occurs?

All of the vexing issues lead to questions from visitors, professional resource managers and interpreters about how to respond to these threats. This paper reports one agency's response. Biological diversity issues are the focus. Although the data and experiences presented are based on U.S. National Park Service (NPS) responses, the lessons learned may be applicable to many interpretive settings.

NEED FOR THE STUDY

Based upon the legislated mandates and the unique characteristics of the National Park Service, national parks should protect biological diversity and underlying processes that maintain and generate natural biological diversity according to the 1987 Director's Task Force on Biological Diversity. The Task Force indicated that national parks are increasingly unique and must be treated as relatively undisturbed areas embedded in grossly disturbed systems. These heavily impacted areas can contribute to the loss of natural biological diversity of national parks and the nation.

According to this Task Force, national parks, as they are currently organized and managed, are destined to diminish in biological diversity. The Task Force points out that NPS must use science, cooperation, training, new management methods and interpretation/public education to protect biological diversity within parks. NPS recognizes the potential of interpretation as a resource management tool and proposed a service-wide interpretive initiative to inform the public of critical issues affecting the national parks.

INTERPRETATION

Interpretation has traditionally been defined by NPS as an educational activity. Research over the past several years has addressed the practical application of interpretation as a management tool. Interpretation is commonly believed to be useful in helping gain visitor support for park policies and management practices. In the case of loss of biological diversity, the immediate visual evidence is not always present and NPS policy is evolving as research scientists gather new data and make recommendations. Perhaps of greater importance to the issue is that most of the loss of biological diversity is outside park boundaries where park regulatory policy can have minimal impact on influencing regional, national and global decisions to protect biological diversity.

Thus in 1988 NPS crafted an interpretation/public education response entitled "Interpreting Biological Diversity in the National Park System—An NPS Interpretive Initiative Plan". Richard Cunningham, Chief of Interpretation, NPS Western Region Office, directed the initiative. A basis for this initiative was the assessment of biological diversity interpretation as reported by field interpretive managers. The following objectives guided that assessment and are the basis for this article:

1) current status of biological diversity interpretation at NPS sites;
2) interest of interpreters in new programs, exhibits and other materials about biological diversity;
3) attitudes of interpretive managers towards biological diversity and
4) barriers to interpretation of biological diversity.

METHOD

An eight-page questionnaire was designed by project cooperators at The Ohio State University. Input was provided by the Biological Diversity Interpretive Initiative Task Group, NPS Division of Wildlife and Vegetation, and the NPS Division of Interpretation. The final questionnaire was completed, pilot-tested and approved in February 1988, and mailed to 301 NPS sites. A total of 225 responses were received by May 1988 for a 74.8% response rate.

Each park received a cover letter signed by the Assistant Director for Interpretation, an eight-page questionnaire, a paper entitled "Some Thoughts on Biological Diversity" by Richard Cunningham and a sample biological diversity program sheet entitled "Nature's Medicine Cabinet" by Kim Palmer.

RESULTS

Respondents were asked to indicate all interpretive technologies being used in their parks to interpret biological diversity. Table 1 shows the percentage of parks under each biological diversity major heading/technology. Species diversity is the most interpreted topic at NPS sites; personal services is the technology most often employed.

When asked what technologies they would prefer if available personal services was the most desired item, followed by non-personal services, outreach programs, community/environmental education programs and exhibits. Additional assistance in interpreting species diversity followed by genetic diversity, ecosystem diversity and community diversity were the order of preference by the 225 respondents for new topical information.

To probe training or material needs, participants were asked what assistance they needed for their biological diversity initiative. Table 2 presents those data. Packets of materials was the most desired item.

INTERPRETING BIOLOGICAL DIVERSITY

Respondents were asked to list the 1st, 2nd and 3rd most useful aid in interpreting biological diversity. All levels were collapsed to provide a rank ordering of the most desired aid. The order from most preferred to least preferred was: resource materials, training, funding, audiovisual materials, handouts and brochures, traveling exhibits, support and clarity of objectives from Washington, D.C. and resource information specifically for cultural areas.

In an attempt to assess barriers to implementing the interpretive initiative, respondents were asked to provide the answer that most accurately reflects the staff's attitude. Table 3 shows that most respondents tended to agree with all statements except the one concerning a new initiative each year. Most tended to be neutral or disagree with the concept of an annual interpretative initiative. Choices for answers were: Strongly Agree **1**), Agree **2**), Neutral **3**), Disagree **4**), or Strongly Disagree **5**). The mean or arithmetic averages for each question are presented in Table 3.

To provide insights into the respondents' perceptions of the initiative they were asked to provide the answers that most accurately reflected their attitude to a list of statements. The mean or arithmetic average was calculated for each question. Means are presented in Table 4. Choices for answers were: Strongly Agree **1**), Agree **2**), Neutral **3**), Disagree **4**), or Strongly Disagree **5**). Attitudes reflected in mean scores in Table 4 point to potential barriers to the new initiative.

Table 1. Percentage of parks implementing biological diversity programs using specific media and topics.

	Personal Services	Community Environmental Education Programs	Non-Personal Services	Exhibits	Outreach Programs
Geometric Diversity	66.2	45.8	46.2	41.3	31.1
Species Diversity	88.9	68.0	68.0	48.0	47.6
Community Diversity	52.4	13.3	34.7	23.6	17.3
Ecosystem Diversity	64.4	49.8	64.4	25.3	30.7

n=225

Table 2: Percent of parks that requested training or materials.

Training Needs	Percent of Parks	Rank Order
Packets of materials	80.0	1
Self-Study courses	57.8	2
In-park staff training	50.7	3
Regional training team courses	46.2	4
Training courses offered at NPS National Training Centers	32.4	5
Videotape	6.7	6
No additional training needed	4.0	7

n=225

Table 3: Manager's perception of staff's attitude toward biological diversity initiative.

Question	Mean Score
The biological diversity initiative is appropriate for fulfilling the NPS Mission.	1.8
The biological diversity initiative is useful in fulfilling the NPS mission.	1.9
A new initiative should continue to be proposed each year.	3.3
If such initiatives are to be proposed, they should be developed by special committees composed of a cross section of NPS experts.	2.1
If such initiatives are developed, special materials and program support should be coordinated by the Washington and regional offices.	1.7

n=220

Table 4: Manager's perception of the biological diversity initiative.

Question	Mean Score
I feel my staff has time to develop biological diversity programs.	3.6
I feel my staff is large enough to effectively implement biological diversity programming.	3.7
I feel my staff has enough to do already.	2.1
I feel my staff should be interpreting biological diversity.	2.3
I feel my staff already adequately interprets biological diversity.	3.3
I feel my staff has access to current research on biological diversity within my park.	3.5
I feel researchers investigating biological diversity issues are unwilling to share findings with my staff	2.5
I feel research findings available to my staff are outdated.	2.9
I feel my staff is uninformed about current biological diversity issues and research within my park.	2.9
I feel biological diversity is too complex for visitors in my park to understand.	3.8
feel visitors to my park do not care about biological diversity.	3.0
I feel visitors should become aware of biological diversity.	1.9
I feel the biological diversity initiative is a valuable program area for my park.	2.6
I feel biological diversity is not applicable to my park.	3.6
I feel the biological diversity initiative is appropriate for fulfilling the NPS mission.	1.9
I feel that appropriate funding is not available.	2.1

n=220

DISCUSSION OF RESULTS

The data found herein should be viewed in terms of relationships and rank ordering. Asking persons to recall specific numbers by topic, over time, is subject to some level of error as is all research that asks respondents to recall events over a relatively long period of time. The value in these data, however, is to help all persons involved in interpretation gain a better understanding of how their NPS colleagues perceive the situation and what their perceived needs are.

The data provided by respondents serve as a basis for the following discussion. From the extent of programming reported it is evident that NPS is actively engaged in biological diversity interpretation. All four major categories are included in programming as they should be. More detailed assessment found in the full NPS report on this study indicates that even though overall numbers of interpreting genetic diversity are similar to the other three categories, genetic diversity is not interpreted as extensively as are the other categories.

Even though genetic diversity is complex to understand and even more complex to interpret, the topic does serve as the basis for helping the visitor understand biological diversity. As a subcategory within the data, the global concept of biological diversity scored low (subcategory data are reported in the overall NPS report on this survey). Given the linkages that most parks have to global issues such as migrating birds, global concerns could be expected to be more prominent in NPS programming. Migrating birds and our personal consumption of certain imported products at the expense of biological diversity can serve as links for interpreting global issues.

The needs assessment portion of the study indicated assistance in delivering personal services and packets of resource materials are the most needed items. NPS has diligently sought to provide as much material and training as possible in accordance with the preferences reflected by this survey. Among the support provided are local and national biological diversity training programs, an extensive biological diversity communicators handbook, a curriculum guide and a videotape for the public.

RESOURCE MATERIALS

Resource materials were identified as the first priority need; training and funding were second. Both of these may require an outlay of funds beyond those immediately available. The lack of funds make the needs no less important. Of interest in this question is the request for support and clarity from the Washington, D.C. office; increased communication among the Washington, D.C. office, regional offices, and the field is desired. Also of interest is the least desired item, resource information specifically for cultural areas. A greater interest was expected given that out of the 225 respondents 113 were from parks with primary themes of history and culture.

ATTITUDES

Attitudes of the staff and the interpretive manager concerning the initiative are most important. The staff's attitude was a perception of the manager. The results indicated that the majority of the park staffs agreed that the biological diversity initiative was both appropriate and useful for fulfilling the NPS mission.

Most also agreed that if initiatives are proposed, they should be developed by special committees composed of a cross-section of NPS experts and that special materials and support should be coordinated by the Washington, D.C. and regional offices. Concerning a new initiative each year, 23% of the respondents were in agreement that a new initiative should be proposed annually; 32% were neutral, and 45% opposed the idea.

The managers' attitude questions were categorized into four groups: perceptions of staff interest and needs, perceptions of availability of resource information, perceptions of visitors' interests and needs, and perceptions of managers toward the biological diversity initiative.

Sixty-five percent of these respondents agreed that their park staff should be interpreting biological diversity; only 15% felt their staff should not be interpreting biological diversity. Only 25% felt that their staffs had enough time to develop biological diversity programs, and only 20% of the respondents felt that their staff was large enough to effectively implement the initiative.

Likewise, in their perceptions of the availability of resource information, only 22% of the respondents felt that their staff had access to current research on biological diversity within their parks. Over 70% of the respondents agreed that biological diversity was not too complex for the visitors to understand. Nearly one-half of the respondents felt that visitors do care about biological diversity.

Fifty-one percent of the respondents felt that the biological diversity initiative is a valuable program area for their park; 24% of the respondents felt that it was not a valuable program area for their park, and 25% were neutral. While 85% of the respondents agreed that the initiative is appropriate to fulfill the NPS mission, 67% felt that appropriate funding was not available to implement the program, and 27% were unsure about the status of funding.

The need for and interest in interpreting biological diversity is present among NPS interpreters; what is lacking is personnel, funding and appropriate information.

CONCLUSIONS

A number of conclusions can be drawn from the data:

- The National Park Service has numerous interpretive programs and materials that touch upon biological diversity issues. These programs and materials provide a basis for expanding the interpretation of biological diversity.
- Parks make extensive use of both personal services and media/materials to convey interpretive messages.
- Parks can make use of and desire a full range of programs, media and materials to support their efforts to interpret biological diversity issues. Materials to assist with personal programs were in greatest demand, followed by non-personal services materials and media, and outreach program materials. Community/ environmental education programming materials and exhibits were desired least.
- Packets of materials, followed by self-study courses and in-park staff training, are the primary modes of desired personnel training.
- The lack of interest of parks in resource materials specifically for cultural parks indicate that some cultural areas see little relevance of biological diversity to their themes, goals and objectives.
- Resource materials were considered the most useful support item, followed by training and funding, respectively.
- A new initiative each year is not desired.
- Initiatives should be developed by special committees with a cross-section of NPS expertise, and the field should be supported by

regions and the Washington, D.C. office in the form of specially designed programs and materials.

•A majority of park managers feel they do not have the time, funding, or staff to institute a special initiative.

•A majority of park managers feel that biological diversity should be interpreted in their park.

•The consensus was that park personnel do not know as much about biological diversity as they need to and do not have ready access to materials and data.

•According to park managers, park visitors can comprehend biological diversity concepts, are interested in the topic, and should become more aware of the topic.

•The extent to which biological diversity is addressed was perceived as a park-specific prerogative in which each park should participate at the level it deems appropriate to its goals, objectives, and themes.

•Biological diversity interpretation is viewed as appropriate and useful in fulfilling the NPS mission.

RECOMMENDATIONS

Recommendations made are based on the data found in this report, other NPS reports on this topic, personal interviews, NPS reviewers' feedback and experience with the Acidic Deposition/Air Quality Interpretive Initiative of 1987-88.

Although the National Park Service is engaged in interpretation of biological diversity issues, the service's effort is limited given the gravity of the problem—the loss of biological diversity nationally and globally. Greater emphasis, coordination, and support for a long-term biological diversity interpretive initiative should be considered.

Parks are functioning on a short-term basis, concerning themselves with funds, personnel, and immediate tasks as opposed to looking at the future and the larger issues and threats to the parks. Biological diversity is rated as an important issue but the pressure of day-to-day issues results in the "we just do not have time to add this new initiative" position.

The recognition of the importance of the topic is there; all levels of management and field personnel must plan and work together to address the real issues and threats to parks in a timely manner.

PERSONAL PROGRAMMING

Personal programming is the primary mechanism for visitor contact. More personnel must be trained and accessible to the public if NPS is to have a significant impact. To fulfill the objectives of the biological diversity initiative, field personnel need materials and in-park training in a timely manner. Materials and training beyond those available must be provided.

Confusion seems to exists over a new initiative each year. NPS should consider simply promoting a new professional education topic as appropriate but not limiting the thrusts to any time span.

Greater emphasis and coordination at the Washington, D.C. and regional office levels for the professional education topics are needed. Additional personnel or reallocation of time may be necessary in those offices.

NPS must place additional emphasis on support for increasing the knowledge and capabilities of NPS communicators to more effectively interpret critical resource issues.

Special effort is needed in the Washington, D.C. and regional offices to help recreational, historical, and cultural resources areas more clearly identify their roles in the biological diversity interpretive initiative.

The level and format of biological diversity programming should be a park-level decision; standards by which parks are evaluated should assess whether efforts made by the park to interpret the new concepts are adequate given the park's themes, goals, objectives and resources.

Summative evaluation is needed to compare inputs into the initiative, perceived barriers and actual outcomes.

NPS MANDATE

NPS has the mandate and biological resources with which to address biological diversity interpretation. With increased training and support the agency can develop the capabilities to mount a major long-term, sustained interpretive thrust in biological diversity. A parallel program in research, protection, maintenance and restoration of biological diversity is also required. The tasks are complex; it cannot be an issue for interpreters alone. To truly succeed all NPS units and all levels of NPS management must accept the loss of biological diversity as a paramount problem.

A short-term thrust will not solve the problem nor will it significantly change public or political attitudes about global deterioration of biological diversity. Only an effort mounted over many years with both external and internal biological diversity information transfer will make a difference.

Just as the Yellowstone fires and Mt. St. Helens' volcanic activity reawakened a nation to impacts of natural processes, we as interpretive professionals can utilize current events to demonstrate the importance of ecological processes and their relationship to maintenance of diversity in nature. Only when society understands the interrelationships between polluted air and water, declining forests, loss of biological diversity and an eroding quality of life and takes action can all biological diversity initiatives be brought to an end.

NPS is in the unique position as one of the world's leading conservation agencies to set a precedent of addressing critical resource management issues, publicly and in a forthright manner. The service has the land resources, mission and professional ethic—the greater world society can afford nothing less than our best effort.

APPLICATIONS

NPS began an extensive interpretive effort in 1987-1988 to address acidic deposition and air quality issues and followed that with a 1989-90 initiative in biological diversity. Both efforts first asked field-level interpretive managers about needs, desires, attitudes and perceptions. By understanding those who are to provide the services, NPS administrators could better decide how to allocate the limited resources available to address the threats to critical resources.

These modified needs assessments recognized the importance of gathering background data from within the organization before moving forward. The results of the biological diversity initiative have been the production of one NPS communicator's handbook, one curriculum guide, one slide-tape/video production, a variety of NPS employee training sessions and numerous NPS public programs. More activities are planned.

This effort serves as one model for:

1) the use of interpretation to address critical resource issues;

2) conducting a needs assessment within an organization before beginning major new initiatives;

3) the production of quality materials and services through the coordinated efforts of administrators, interpreters, research scientists, consultants and university researchers.

Given that we may share the earth with up to 30 million species, most of which have yet to be identified, and that their extinction, extirpation and life processes disruption rates are rapidly increasing, interpretation must become more systematic in addressing these issues. To be systematic entails research and evaluation of our efforts.

CONCLUSION

Each agency or organization is not a NPS and certainly is not expected to emulate their efforts. Conversely, interpretation cannot turn a blind eye to ecological threats such as loss of biological diversity or cultural heritage threats such as illegal trade in antiquities.

In the 1970's, interpretation and environmental education moved apart philosophically; perhaps the two are moving closer again as interpreters attempt to provoke social actions to protect biological diversity both locally and globally.

Whether at your county nature center or in a pristine biosphere reserve such as the Greater Yellowstone Basin, each interpreter must not fail to weave together traditional themes with the threats that belie the very resource we seek to interpret.

OUR LEGACY OUR FUTURE

DR. MIKE LEGG
DR. DAVE KULHAVY

Perhaps, interpretation is coming of age. We have grown out of an age of naivety and are maturing into an age of *"loss of innocence."* In the past we interpreted because it was good and should be done. We cut our teeth in the environmental movement of the sixties and seventies and were firmly convinced that only through education and awareness could our environmental and cultural heritage be saved.

We all read ***Tilden, Leopold, Muir and Thoreau***; and we believed, so we interpreted. We inspired, educated, evoked, provocated and informed because it was what we should be doing. We have a heritage of techniques and good lofty ideas which should not and will not be lost. Hopefully, the Proverbial admonition that "as the twig is bent, the tree will grow" will hold true for interpretation. The profession has always been altruistic, working for pauper's wages and basking in the warm glow of the applause of our audiences. We are proud to be interpreters.

Recently, we have begun to see interpretation in another light. We now demand recognition as a profession, and want our justifiable role as a part of management. A large number of papers in this proceedings point to this. Interpretation as a tool of management is the buzz word of the 1990 Workshop. However, we hate to see us stop at the point of being seen as a tool of management; we must be (if we are to continue to exist) be a part of not a tool of management. Interpretation is no longer seen as a public service to visitors, agency heads see interpreters as spokes-people for the agency.

No longer can we assume we have done a good job of interpreting when the audience applauds. Now we know we have done a good job of interpreting when both the audience and the boss applaud. We are rapidly becoming the believable voice of management as it meets and deals with issues involving the public. This role demands that interpretation plays a valid role in decision making if we are expected to defend those decisions.The public wants and needs to be involved in making decisions concerning management of both cultural and natural resources. We can expect an even greater demand for involvement in the future as more and more public groups realize the power of collective bargaining.

We are beginning to learn the tools and tricks of marketing experts to segment our existing and potential audiences into homogeneous groups. We recognize the importance of good market planning to determine the appropriate marketing mix for each segment. Recently some have even dared to use the word ***price*** when talking about interpretive programs.

Part of coming of age is being accountable for your actions, and interpreters are becoming increasingly aware of and interested in evaluation. We are trying to learn how to evaluate not only the quality of presentation, but the benefits we provide to the consumer (once called visitors) and to management. Interpretation must be creative and effective. It is only logical that management would eventually perceive the importance of having a voice that is in daily contact with the active public. Thus we are being included in the management team, helping make the decisions that in the past only affected us. With the increased management role came increased accountability. Essentially, we have to be able to prove that we are worth the money being spent on interpretation, and if we cannot we will soon be forced back to our old role of doing *"what is nice"* instead of *"what is needed."*

Further proof of a maturing profession is the growth of an active research arm. Research indicates concern about the future. It also indicates that we are not satisfied with the status quo, but are looking for new and better ways of doing things. Research marks the birth of a true profession. Until a job merits research it is only a trade.

We are living in an age of communication that has just experienced a rekindling of environmental and historic interest. The profession is being recognized and its value as a part of the management team working to accomplish management goals and objectives is becoming accepted. Surely with our strong legacy of techniques and principles, the future of interpretation is bright.

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