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Mississippi's Severance Tax And Forest Resource Development Program

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were recorded for all 200 clumps. Root sprouts were not counted or measured. Measurements were made one and three growing seasons after thinning.

No Gain from Thinning

The clumps selected for thinning had an average of 17 sprouts. The average dominant sprout was 0.4 inch in d.b.h. and 8.3 feet tall. Clumps selected for comparison (controls) averaged 18 sprouts, the dominant one being 0.4 inch in d.b.h. and 8.4 feet tall.

One year later, the thinned clumps had an average of 47 sprouts. The average dominant was 1.3 inches in d.b.h. and 14.4 feet tall. The control clumps had 17 sprouts, with the average dominant 1.3 inches in d.b.h. and 17.2 feet tall. Thinning resulted in more prolific sprouting with a consequent reduction in height growth of the dominant. This effect was probably due to competition for nutrients, water, and food factors, above and beyond that in unthinned clumps (personal communication from George A Schier, Northeastern Forest Experiment Station, USDA Forest Service, Delaware, Ohio).

Many sprouts on all stumps died during the second and third growing seasons. Measurements three years after thinning showed that thinned clumps had an average of 9 sprouts, and the average dominant was 2.5 inches in d.b.h. and 26 feet tall. Control clumps had an average of 10 sprouts, and the average dominant was 2.8 inches in d.b.h. and 30 feet tall. Sprout data are summarized in *table 1*.

Damage to dominant sprouts was also recorded three years after thinning. In thinned clumps, six dominants were cankered, six were dead, and seven had tops broken by wind. Reasons for this damage are a matter of speculation. In the controls, only one dominant was cankered and one had a broken top.

Three-year data were statistically analyzed (0.01 level of significance) by using the t-test for unpaired plots. The analysis showed no significant differences between thinned and control clumps for number of sprouts or diameter of dominants. The dominants in the unthinned

Table 1. Summary of sprout development in 100 thinned and 100 unthinned hybrid poplar clumps.

YEAR	SPROUTS PER CLUMP		D.B.H. OF DOMINANT SPROUT		HEIGHT OF DOMINANT SPROUT	
	Thinned	Unthinned	Thinned	Unthinned	Thinned	Unthinned
	----- Number -----		----- Inches -----		----- Feet -----	
1978 ^a	17	18	0.4	0.4	8.3	8.4
1979	47	17	1.3	1.3	14.4	17.2
1981	9	10	2.5	2.8	25.9 ^b	30.0 ^b

^aMeasurements taken before thinning.

^bDifference significant at the 0.01 level.

clumps, however, were taller than those on the thinned clumps.

The hybrid poplar sprout clumps responded to thinning much the same as do clumps of yellow-poplar (*Liriodendron tulipifera*). Beck (1977) found that thinning yellow-poplar to one stem per clump at 6 years did not affect either height or diameter growth over the following 18 years. Wendel (1975) reported that average number of stems per clump dropped from 42 at age 1 to 5 at age 10. He suggested waiting until dominance within the clump is permanently expressed and the weaker sprouts have died before selecting one or two sprouts per clump to be treated as crop trees. The rotation for hybrid poplars is much shorter than for other hardwood species. Therefore, I recommend not thinning clumps of hybrid poplar sprouts. Natural thinning will result in larger, healthier stems for the future crop. ■

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Mississippi's Severance Tax And Forest Resource Development Program

G. H. Weaver and Steven H. Bullard

ABSTRACT—Mississippi's Forest Resource Development Program was the second state-sponsored forestry assistance program in the United States. It was authorized by the legislature in 1974 in response to concerns over long-term availability of softwood timber. It is funded by a severance tax levied at the point of first processing. Since inception, 152,295 acres have been treated under the program. Severance tax rates were established in 1974 and remained constant until 1981. Costs rose rapidly during these years, and the only way to increase funds for the program was to cut more timber or raise the fixed tax rates, as was done in 1981. Such problems would be avoided if severance taxes were levied on the basis of current product value.

In Mississippi, timber is the leading source of income, ranking ahead of cotton and soybeans. During 1980, for example, the value of the timber delivered to the point of first processing exceeded one-half billion dollars. Additional benefits accrue from primary and secondary manufacture; forest industry accounts for 20 percent of the state's manufacturing employment (Porterfield et al. 1978).

About two-thirds of the timber removed commercially is southern pine from either natural stands or plantations. A prime concern in the state, as well as through-

out the South, is providing for pine regeneration after harvest.

Forest Resource Development Program

Recognizing the importance of developing the forests in the state, the Mississippi legislature initiated the Forest Resource Development Program (FRDP) in 1974. An existing severance tax on timber and timber products was doubled on July 1, 1974, with the additional revenues allocated to fund FRDP. The other half of tax receipts was divided between the state general fund and the county from which the timber is harvested.

The major goal of FRDP is to assist owners of private nonindustrial timberland with the costs of forestry practices. From program inception through 1981, cost-share assistance of up to 75 percent was provided for investments ranging from tree planting and seeding to fire-break construction. Effective July 1, 1982, however, the legislature lowered the cost-share rate to 50 percent on approved practices, and restructured the tax rates (*table 1*) and distribution of receipts. Essentially 80 percent of the receipts will be used to fund FRDP in the 1984 fiscal year and thereafter. Counties will receive 20 percent of the receipts (Mississippi Code of 1981, chapter 25, 27-25-1 and 27-25-11, p. 77-79).

The Mississippi Forestry Commission administers FRDP but cannot use the receipts for anything but approved practices. While the vast majority of FRDP funding is allocated to pine regeneration, some goes each year to hardwood management. FRDP aid is not authorized on practices or areas where payments are made under the federal Forestry Incentives Program. All FRDP accomplishments are therefore in addition to results from other programs. During 1981, 400 applications for cost-share assistance, totaling \$1.2 million, remained unprocessed for lack of funds (Mississippi Forestry Commission 1982). This backlog indicates high interest on the part of nonindustrial landowners.

Accomplishments of FRDP are presented in *table 2*.

Approximately 20,000 acres per year have been treated. The average FRDP investment per acre treated is shown in *table 3*. During a time of significant inflation, the Forestry Commission sustained a high level of accomplishment with relatively constant funding. From 1976 to 1980, program funding increased only as timber harvests increased (about a 3-percent compound rate). The costs of forestry practices, as well as harvesting and site preparation equipment, however, rose at a rate in excess of the general inflation (Moak 1979, Moak et al. 1980, Tufts et al. 1981). Thus, during a time of double-digit inflation, the fund was operating with a net loss in purchasing power.

Funding the Program

Mississippi law requires that a privilege tax be imposed on the severer of timber or the producer of timber products. Past and present severance tax structures for the state

are presented in *table 1*. The tax on poles, piling, and posts is presently the only Mississippi timber severance tax levied as a percent of harvest value. All others are applied as a fixed rate per unit of quantity harvested. The nominal value of Mississippi's timber resource increases annually, but with tax rates applied on the basis of per unit output, the total tax revenues do not reflect changing product values. As product values increase, the effective tax rate, as a percent of value, declines (Bullard and Weaver 1981). Revenues do not keep pace with inflation.

The effective rate of the severance tax on pine sawlogs in Mississippi during a recent period is illustrated in *figure 1*. While the rate on pine sawlogs during 1975-1980 was fixed at \$0.80 per MBF Doyle, the effective rate fell from 0.95 percent of value to 0.42 percent of value. The increases in stumpage prices during the period lowered the relative burden of the severance tax by reducing the effective rate by more than 50 percent. Establishing all timber severance tax rates on a percent of product value basis, rather than on a per unit output basis, would stabilize the effective

Table 1. Mississippi's timber severance tax rates.

Product	TAX RATE		Unit
	1980	1982	
--- Dollars ---			
Pine sawlogs	0.80	1.00	MBF (Doyle)
Hardwood sawlogs	.60	.75	MBF (Doyle)
Lumber, all species	.60	.75	MBF (actual measure)
Pine pulpwood	.24	.30	Cord
Other pulpwood	.18	.225	Cord
Stumpwood	.20	.25	Ton
Turpentine gum	.24	.30	Barrel
All other	.60	.75	MBF (Doyle)
	.30	.375	Cord
Percent of harvest value			
Poles, piling, posts	2	2.5	

SOURCES: Mississippi State Tax Commission (1980), and Mississippi Code 1981.

Table 2. Annual accomplishments of the Mississippi Forest Resource Development Program, fiscal years 1975-1981.

Treatment	1975	1976	1977	1978	1979	1980	1981
----- Acres -----							
Planting	9,118	10,301	15,920	15,005	16,478	19,511	12,031
Direct seeding	252	—	1,050	590	3,736	1,907	2,898
Release	9,702	4,965	6,232	6,782	6,367	2,482	2,715
Site preparation for natural regeneration	465	642	677	925	954	367	223
TOTAL	19,537	15,908	23,879	23,302	27,535	24,267	17,867

SOURCE: Mississippi Forestry Commission 1982.

Table 3. Areas treated and costs, fiscal years 1976-1981.

Item	1976	1977	1978	1979	1980	1981
----- Acres -----						
Total treated	15,908	23,879	23,302	27,535	24,267	17,867
----- Dollars -----						
FRDP ^a	971,275	974,549	1,065,658	1,123,595	1,122,158	1,389,808
FRDP treated acre	61.06	40.81	45.73	40.81	46.24	77.79
Stumpage prices per MBF ^b	101	120	156	211	189	185

^a SOURCE: Mississippi Forestry Commission (1982).

^b SOURCE: Clephane and Carroll (1982).

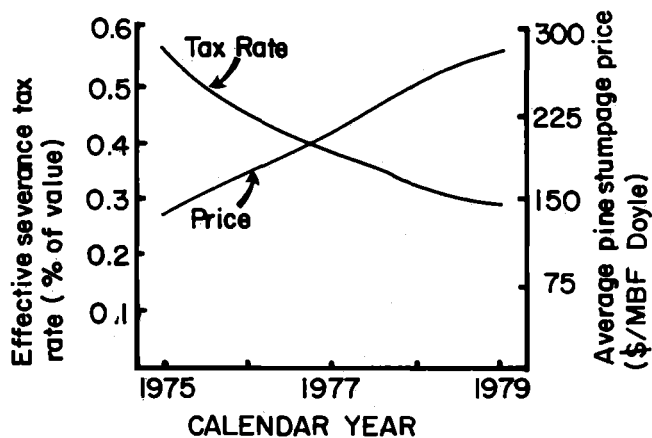


Figure 1. Mississippi's severance tax on pine sawlogs as a percent of value and average pine sawtimber stumpage prices, 1975-1979.

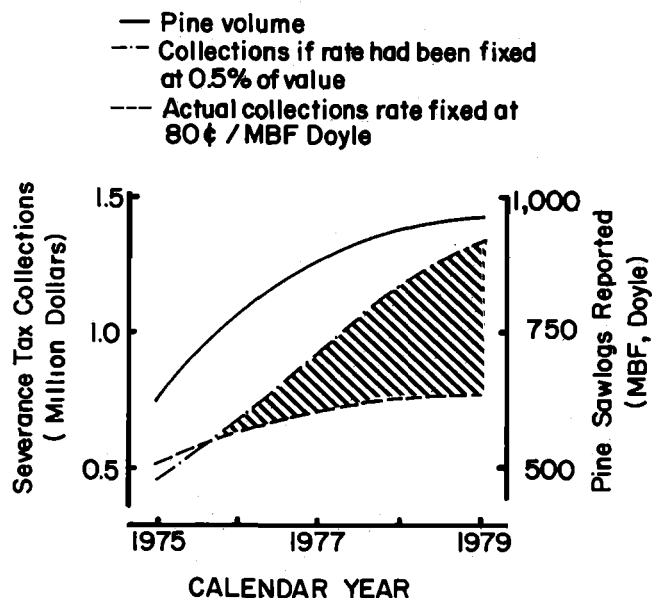


Figure 2. Volume of pine sawlogs reported cut and comparison of revenues generated by actual and proposed severance tax applications, 1975-1979.

rate, ensuring that revenues keep pace with the current dollar value of the product, including inflation. A five-year comparison of revenues generated by actual and proposed severance tax applications for pine sawlogs is presented in figure 2.

Four southern states (Virginia, Mississippi, North Carolina, and South Carolina) have enacted forestry incentives programs, and three more (Texas, Louisiana, and Alabama) are considering similar legislation (Custard 1982). While severance taxes are typically levied per unit of product output (Duerr 1960, p. 459), the effective rate is variable during periods of changing prices. Levying such taxes on a unit-of-product-value basis would stabilize the effective rate. Also, during inflationary periods the revenues generated would more closely correspond to the costs of forestry practices, thereby ensuring a closer relation between potential program accomplishments and timber harvest levels. ■

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How Michigan Prevented Another Monongahela

Jan J. Hacker

ABSTRACT—Lessons from the 1976 Monongahela clearcutting incident were successfully applied by the Forest Management Division of the Michigan Department of Natural Resources to resolve a similar controversy in Michigan.

A citizens' group, outraged by clearcutting near their homes, organized to challenge the division's cutting policies. The agency used six tactics successfully to resolve the issue: (1) The usual chain of command was bypassed. (2) Contact with the public was established and maintained. (3) The citizens' group was analyzed thoroughly and its complaints recognized. (4) Technical specialists were used where needed. (5) The Forest Management Division used every available opportunity to present its case. (6) Action was taken so the public saw the effect its concerns had on management.

These general tactics can be applied to a variety of situations in which agency policies may conflict with citizens'

desires. The techniques can serve as a base upon which foresters and other resource professionals, primarily trained in technical aspects of their work, can improve on an increasingly important part of their jobs.

The Monongahela incident, a critical issue of the past decade, has all but faded from the memories of today's forest managers, as has the "we know what's best for the land" approach which contributed at least partly to that controversy (see sidebar on page 667). Foresters have found that they must not only manage forestland resources but must also be responsive to the public they serve. As the Monongahela incident illustrated, a man-