2012

ETPPRP Accomplishments - Fall 2012

The East Texas Pine Plantation Research Project, Arthur Temple College of Forestry and Agriculture

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Arthur Temple College of Forestry and Agriculture

Stephen F. Austin State University

Box 6109, SFA Station

Nacogdoches, TX 75962

Accomplishments as of Fall 2012

The ETPPRP is a long-term comprehensive research program investigating the factors affecting the management of loblolly and slash pine plantations in East Texas. The Arthur Temple College of Forestry and Agriculture at Stephen F. Austin State University conducts the ETPPRP in coordination with private landowners, primarily Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs).

Six integrated forest product companies – Temple-Inland, International Paper, Louisiana Pacific, Champion International, St. Regis Paper Co. and Owens-Illinois, Inc. -- were initial participants prior to merging with other companies and/or selling their land base in East Texas. At present, the ownership is fragmented with mostly TIMOs and REITs managing the properties.

The ETPPRP was initiated in 1982 by Dr. J. David Lenhart. Dr. Lenhart retired in 1999, and the new supervisor of the ETPPRP is Dr. Dean W. Coble, 936-468-2179, dcoble@sfasu.edu.

Original Plots in Unmanaged Loblolly and Slash Pine Plantations

To provide data to drive the ETPPRP, a total of 256 permanent monumented plots were installed in unmanaged East Texas pine plantations between 1982-84 (175 plots in loblolly pine plantations and 81 in slash pine plantations).

As of Fall 2012, due to acts of nature and man, only 49 original plots remain (40 plots in loblolly pine and 9 in slash pine plantations). This number is decreasing rapidly because most plots are located in mature/over-mature pine plantations which are being harvested at an increasing rate. Some plots were also destroyed by Hurricanes Rita and Ike as well as wildfires, but most attrition can be attributed to logging.

Each plot is located in a different plantation and consists of two subplots, and each subplot is 100-ft square (10,000 ft^2 or 0.23 acres). One subplot is being utilized for model

development and the other subplot for model evaluation. A 30-foot wide buffer zone surrounds the two subplots. Therefore, each plot encompasses 51,200 ft^2 or 1.18 acres.

The first measurement cycle of the ETPPRP plots began in 1982 and finished in 1984. The second measurement cycle ended in 1987. The third measurement cycle ended in 1990. The fourth measurement cycle ended in 1993. The fifth measurement cycle ended in 1996. The sixth measurement cycle ended in 1999. The seventh measurement cycle ended in 2002. The eight measurement cycle ended in 2005. The ninth measurement cycle ended in 2008. The tenth measurement cycle ended in 2011. Currently, the ETPPRP is in the eleveth measurement cycle. About 1/3 of the plots are measured each year.

Site preparation method, landform, slope and aspect have been determined for each subplot, plus soil characteristics are available. Climatic information for the East Texas area is available. Longitude and latitude coordinates are known for each plot.

All planted pines within a subplot are tagged and numbered for sequential data collection: dbh, total height, height to live crown and crown class. In addition, fusiform rust incidence and visible tree quality of the planted pines are recorded at each measurement.

During the second measurement cycle, we began collecting information on non-planted vegetation at permanent sampling points systematically located within each sub-plot. Beginning with the third measurement cycle, we began recording scenic beauty within each subplot, and for a short time during the third cycle, sample trees located in the buffer zone were felled for wood property analysis. During the sixth cycle, we discontinued the scenic beauty measurements.

New Plots in Intensively Managed Loblolly Pine Plantations

As of Fall 2012, there are 126 new plots installed in intensively-managed loblolly pine plantations located in Texas and Louisiana. These new plots represent the first efforts of the ETPPRP to characterize intensively managed loblolly pine plantations in this region (Western Gulf Coastal Plain). In Summer 2004, 19 plots were installed in plantations owned by Temple-Inland. In Summer 2005, 50 plots were installed in plantations owned by International Paper. In Summer 2006, 30 plots were installed in plantations owned by Temple Inland. In Summer 2007, 28 plots were installed in Temple plantations. In Summer 2011, 3 plots were installed in plantations owned by Rayonier. Currently, four plots have been destroyed by logging, oil/gas activity, or wildfire. The International Paper plantations are now managed by Hancock and Rayonier, and the Temple plantations are now managed by The Campbell Group. Three plots are now owned by NIPFs. We are working with the new owners to continue measuring these new plots (and the remaining old plots). More plots will be installed in the future to fill deficiencies in the database (e.g., north-east Texas), up to a maximum of 180 plots in loblolly pine plantations.

Each new plot is located in a different plantation and is 100 by 100 foot (10,000 ft^2 or 0.23 acres) in size. This is the same size as the original ETPPRP subplots, but there is only one instead of two per plantation. There is no buffer surrounding the plot, as the plots are

operational in nature. This means that each plot receives the same treatment as the entire plantation, unlike the original ETPPRP plots which were insulated from all subsequent management activities. Treatment history and UTM Nad83 coordinates are known for each plot. More comprehensive competition data are also collected on the new plots versus the original plots.

Graduate Students Completed

Doctoral

Tang Derui
Major Professor ... Dr. Lenhart.
Dissertation Title ... *Assessing stand and environmental factors affecting quality of planted loblolly pine trees in East Texas*.
Completed ... December, 1989.

Alexandros A. Arabatzis
Major Professor ... Dr. Gregoire.
Dissertation Title ... *Qualitative response models theory and its application to forestry.*
Completed ... January, 1990. (Note: Was located at VPI&SU.)

Oliver Schabenberger
Major Professor ... Dr. Gregoire.
Dissertation Title ... *The analysis of longitudinal ordinal data.*
Completed ... April, 1995. (Note: Was located at VPI&SU.)

Young-Jin Lee
Major Professor ... Dr. Lenhart.
Dissertation Title ... *Yield prediction models for unthinned loblolly and slash plantations in East Texas.*
Completed ... May, 1998.

Louis W. Beer
Major Professor ... Dr. Coble.
Dissertation Title ... *Soil-site Index of Loblolly Pine (Pinus taeda, L.) in East Texas.*
Completed ... May, 2009.

Masters

Jock A. Blackard

Major Professor ... Dr. Lenhart.
Thesis Title ... *Estimating site index and individual total tree height for loblolly and slash pine plantations on non-old-fields in East Texas*.
Completed ... May, 1986.

Terry Hackett

Major Professor ... Dr. Lenhart.
Thesis Title ... *Predicting the cubic foot volume of individual slash pine trees planted on non-old-fields in East Texas*.
Completed ... May, 1987.

Charlie Laman

Major Professor ... Dr. Lenhart.
Thesis Title ... *Predicting green weight of individual slash pine trees planted on non-old-field plantations in East Texas.*
Completed ... May, 1987.

Fred Burnett

Major Professor ... Dr. Fountain.
Thesis Title ... *The role of non-planted vegetation within planted stands of loblolly and slash pine trees on non-old-field lands in East Texas*.
Completed ... August, 1987.

Pilis Malim

Major Professor ... Dr. Lenhart.
Thesis Title ... *Assessing stand and environmental factors affecting diameter growth in loblolly pine plantations in East Texas.*
Completed ... December, 1987.

Andy Kallus

Major Professor ... Dr. Lenhart.
Thesis Title ... *Estimating site index for loblolly and slash pine plantations on non-old-fields in East Texas.*
Completed ... August, 1989.

Tom Hartz.

Major Professor ... Dr. Lenhart.
Thesis Title ... *FRMPS: A forest resource management planning simulator for East Texas pine plantations*.
Completed ... December, 1989.

Eric Taylor
Major Professor ... Dr. Lenhart
Thesis Title ... *A product yield estimation model for loblolly and slash pine plantations in East Texas*.
Completed ... December, 1990.

A. Gordon Holley
Major Professor ... Dr. Lenhart.
Thesis Title ... *Analysis of visible tree quality of planted loblolly and slash pines in East Texas.*
Completed ... May, 1992.

Jaffirin Lapongan
Major Professor ... Dr. Lenhart.
Thesis Title ... *Predicting site index,diameter and survival for loblolly pine plantations in East Texas.*
Completed ... August, 1993.

Chris Brown
Major Professor ... Dr. Reeves.
Thesis Title ... *Effects of climatic conditions on growth and mortality of loblolly pine in plantations in East Texas.*
Completed ... December, 1994.

Rob Taylor
Major Professor ... Dr. Fountain.
Thesis Title ... *Successional trends and competition within unmanaged loblolly and slash pine plantations in East Texas.*
Completed ... May, 1996.

Andy Burrow
Major Professor ... Dr. McTague and Dr. Coble.
Thesis Title ... *Predicting Basal Area Growth and Yield of Thinned Loblolly Pine (Pinus taeda, L.) Plantations in the West Gulf Region*.
Completed ... May, 2001.

Micky G. Allen II

Major Professor ... Dr. Coble.

Thesis Title ... *A Modified Stand Table Projection Model for Unmanaged Loblolly Pine (Pinus taeda, L.) and Slash Pine (Pinus elliottii* Engelm.) *Plantations in East Texas*.

Completed ... May, 2010

Trevor D. Walker

Major Professor ... Dr. Coble.

Thesis Title ... *Hazard-Rating and Impact of the Nantucket Pine Tip Moth in Pine Plantations of the Western Gulf Coastal Plain*.

Completed ... May, 2011

Publications

Lenhart, J. D., E. V. Hunt, Jr. and J. A. Blackard. 1985. Establishment of permanent growth and yield plots in loblolly and slash pine plantations in East Texas. P. 436-437 In Eugene Shoulders (ed.) Proc. Third Biennial South. Silv. Research Conf., U.S.D.A. For. Serv. Gen. Tech. Rep. SO-54. 589 p.

Lenhart, J. D., E. V. Hunt, Jr. and J. A. Blackard. 1986. Site index equations for loblolly and slash pine plantations on non-old-fields in East Texas. South. J. Appl. For. 10(2):109-112.

Hunt, E. V., Jr. and J. D. Lenhart. 1986. Fusiform rust trends in East Texas. South. J. Appl. For. 10(4):215-216.

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Lenhart, J. D. 1987. Estimating the amount of wood per acre in loblolly and slash pine plantations in East Texas. P. 485-488 In D. R. Phillips (ed.) Proc. Fourth Biennial South. Silv. Research Conf., U.S.D.A. For. Serv. Gen. Tech. Rep. SE-42. 598 p.

Lenhart, J. D. 1987. Maintaining and preserving permanent growth and yield research plots. P. 525-526 In D. R. Phillips (ed.) Proc. Fourth Biennial South. Silv. Research Conf., U.S.D.A. For. Serv. Gen. Tech. Rep. SE-42. 598 p.

Lenhart, J. D., T. L. Hackett, C. J. Laman, T. J. Wiswell and J. A. Blackard. 1987. Tree content and taper functions for loblolly and slash pine trees planted on non-old-fields in East Texas. South. J. Appl. For. 11(3):147-151.

Lenhart, J. D. 1988. Diameter distribution yield prediction system for unthinned loblolly and slash pine plantations on non-old-fields in East Texas. South. J. Appl. For. 12(4):239-242.

Lenhart, J. D., W. T. McGrath and T. L. Hackett. 1988. Fusiform rust trends in East Texas: 1969-87. South. J. Appl. For. 12(4):259-261.

Tang, D. and J. D. Lenhart. 1990. Loblolly pine tree quality dynamics in the forested region of East Texas, U.S.A. 5th Workshop of IUFRO Project Group 07-00. Chengdu, Sichuan, PRC.

Tang, D. and J. D. Lenhart. 1990. Factors affecting tree quality in the loblolly pine plantations in the forested region of East Texas, U.S.A. 5th Workshop of IUFRO Project Group 07-00. Chengdu, Sichuan, PRC. September 5-14, 1990.

Arabatzis, A. A., T. G. Gregoire and J. D. Lenhart. 1991. Fusiform rust incidence in loblolly and slash pine plantations in East Texas. South. J. Appl. For.15(2):79-84.

Tang, D., J. D. Lenhart and G. D. Kronrad. 1992. Development of a provisional tree quality index for planted loblolly pines in East Texas. South. J. Appl. For. 16(2):106-110.

Lenhart, J. D., G. D. Kronrad and M. S. Fountain. 1993. Comparison of planted loblolly and slash performance in southeast Texas. South. J. Appl. For. 17(1):26-31.

Valentine, H. T., A. R. Ludlow and G. M. Furnival. 1993. Modeling crown rise in even-age stands of sitka spruce and loblolly pine. For. Ecol. & Mgt.

Houghton, D. R. and T. G. Gregoire. 1993. Minimum subsamples of tree heights for accurate estimation of loblolly pine plot volume. South. J. Appl. For. 17(3):124-129.

Lenhart, J. D., T. G. Gregoire, G. D. Kronrad and A. G. Holley. 1994. Characterizing fusiform rust incidence and distribution in East Texas. South. J. Appl. For. 18(1):29-34.

Adams, D. E., J. D. Lenhart, A. B. Vaughn and J. Lapongan. 1996. Estimating survival of East Texas loblolly and slash pine plantations infected with fusiform rust. South. J. Appl. For. 20(1):30-35.

Lenhart, J. D. 1996. Total and partial stand-level yield prediction for loblolly and slash pine plantations in East Texas. South. J. Appl. For. 20(1):36-41.

Lee, Y. J. and J. D. Lenhart. 1997. Estimating crown height for unthinned planted pines in East Texas. South. J. Appl. For. 21(3):130-133.

Lee, Y. J. and J. D. Lenhart. 1998. Influence of planting density on diameter and height in East Texas pine plantations. South. J. Appl. For. 22(4)241-244.

Lee, Y.J. and D.W. Coble. 2002. A survival model for unthinned loblolly pine plantations that incorporates non-planted tree competition, site quality, and incidence of fusiform rust. Bioresource Technology 85(3):301-308.

Lee, Y.J. and D.W. Coble. 2002. Modeling survival for unthinned slash pine plantations in east Texas under the influence of non-planted tree basal area and incidence of fusiform rust. Texas Journal of Science 54(4):325-338.

Coble, D.W., and Y.J. Lee. 2004. Fusiform rust trends in east Texas: 1969 to 2002. P. 153-157 In Connor, Kristina F. (ed.) Proc. 12th Biennial South. Silv. Research Conf., U.S.D.A. For. Serv. Gen. Tech. Rep. SRS-71. 594 p.

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Coble, D.W., and K. Hilpp. 2006. Compatible cubic-foot stem volume and upper-stem diameter equations for semi-intensive loblolly pine trees in east Texas. South. J. Appl. For. 30(3):132-141.

Coble, D.W., and Y.J. Lee. 2008. A new diameter distribution model for unmanaged slash pine plantations in east Texas. South. J. Appl. For. 32(2):89-94.

Coble, D.W. 2009. A new whole-stand model for unmanaged loblolly and slash pine plantations in east Texas. South. J. Appl. For. 33(2):69-76.

Coble, D.W., and Y.J. Lee. 2009. Self-referencing site index equations for unnmanaged loblolly and slash pine plantations in east Texas. In: Proceedings of the 14th Biennial Southern Silvicultural Research Conference, 2009; Stanturf, J.A., editor. USDA For. Serv. Gen. Tech. Rep. SRS – ???, p. ???.

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Allen, M.G. II, D.W. Coble, Q.V. Cao, J. Yeiser, and I. Hung. 2011. A modified stand table projection model for unmanaged loblolly and slash pine plantations in east Texas. South. J. Appl. For. 35(3):115-122.

Coble, D.W., Q.V. Cao, and L. Jordan. 2012. An annual tree survival and diameter growth model for loblolly and slash pine plantations in east Texas. South. J. Appl. For. 36(2):79-84.

Informal Project Reports

Report No. 1
Fusiform rust occurrence.
E. V. Hunt, Jr. and J. D. Lenhart.
November, 1985. 18 p.

Report No. 2
Tree quality.
J. D. Lenhart and E. V. Hunt, Jr.
December, 1985. 16 p.

Report No. 3
Estimating site index.
J. A. Blackard.
December, 1985. 10 p.

Report No. 4
Predicting individual tree height.
J. A. Blackard.
December, 1985. 27 p.

Report No. 5
Estimating the cubic foot volume of individual loblolly pine trees planted in East Texas.
T. J. Wiswell, J. A. Blackard and J. D. Lenhart.
October, 1986. 11 p.

Report No. 6
Estimating the green weight of individual loblolly pine trees planted in East Texas.
T. J. Wiswell, J. A. Blackard and J. D. Lenhart.
October, 1986. 10 p.

Report No. 7.
Estimating the dry weight of individual loblolly pine trees planted in East Texas.
T. J. Wiswell, J. A. Blackard and J. D. Lenhart.
October, 1986. 9 p.

Report No. 8.
Estimating the cubic foot volume of individual slash pine trees planted in East Texas.
T. L. Hackett.
October, 1986. 11 p.

Report No. 9.
Estimating the green weight of individual slash pine trees planted in East Texas.
C. J. Laman.
October, 1986. 10 p.

Report No. 10.
Estimating the dry weight of individual slash pine trees planted in East Texas.
J. D. Lenhart
October, 1986. 9 p.

Report No. 11.
Stand structure and yield of loblolly pine plantations on non-old-fields in East Texas.
J. D. Lenhart
November, 1986. 32 p.

Report No. 12.
Stand structure and yield of slash pine plantations on non-old-fields in East Texas.
J. D. Lenhart
November, 1986. 32 p.

Report No. 13.
Estimating dry weight of understory woody plants in East Texas.
H. C. Reeves and J. D. Lenhart.
December, 1986. 12 p.

Report No. 14.
Stumpage price trends of pine sawtimber and pulpwood in East Texas 1977-86.
J. D. Lenhart and K. T. Adair.
February, 1987. 8 p.

Report No. 15.
Predicting individual tree height of planted loblolly and slash pines in East Texas, update: 1987.
C. R. Dixon.

December, 1987. 8 p.

Report No. 16.
Stand structure and yield of loblolly pine plantations in East Texas, update: 1987.
J. D. Lenhart.
December, 1987. 23 p.

Report No. 17.
Stand structure and yield of slash pine plantations in East Texas, update: 1987.
J. D. Lenhart.
December, 1987. 23 p.

Report No. 18.
Fusiform rust occurrence in East Texas Pine Plantations: 1969-87.
J. D. Lenhart and T. L. Hackett.
February, 1988. 7 p.

Report No. 19.
Estimating survival for East Texas Pine Plantations.
J. D. Lenhart and T. L. Hackett.
February, 1988. 10 p.

Report No. 20.
Stumpage price trends of pine sawtimber and plpwood in East Texas, update: 1977-87.
J. D. Lenhart and K. T. Adair.
March, 1988. 11 p.

Report No. 21.
A FORTRAN computer program for estimating yield of East Texas pine lantations.
J. D. Lenhart.
April, 1988. 18 p.

Report No. 22.
A computer program in BASIC for estimating yield of East Texas pine plantations.
T. L. Hackett and T. M. Hartz.
October, 1988. 5 p.

Report No. 23.

Environmental factors influencing diameter development within loblolly pine plantations in East Texas.

P. Malim.
January, 1989. 11 p.

Report No. 24.
HyperStand 1.0: A HyperCard computer program for estimating yield of East Texas Pine Plantations.

E. L. Taylor and A. G. Holley.
February, 1989. 16 p.

Report No. 25.
FRMPS: A Forest Resource Management Planning Simulator for East Texas Pine Plantations.

T. Hartz.
January, 1990. 4 p.

Report No. 26.
HYPERSTAND 2.0: Estimating yield of East Texas pine plantations (Update to Hyperstand 1.0).

A. G. Holley and E. L. Taylor.
January, 1990. 7 p.

Report No. 27.
Site index equations for loblolly and slash pine plantations in East Texas.

Update: 1993.
A. B. Vaughn, J. Lapongan and J. D. Lenhart.
May, 1993. 6 p.

Report No. 28.
Tree content and taper functions for planted loblolly and slash pine trees in East Texas.

Update:6/93. Revised:9/93.
J. Lapongan, A. B. Vaughn and J. D. Lenhart.
September, 1993. 9 p.

Report No. 29.

Site index equations for loblolly and slash pine plantations in East Texas.
Update: 1994.
Members of FOR 317 class - Spring ‘94.
April, 1994. 7 p.

Report No. 30.
A guide for timing initial tree harvests in East Texas loblolly and slash pine plantations.
J. D. Lenhart and H. A. Ross.
September, 1994. 19 p.

Report No. 31.
Observed growth rates of loblolly and slash pine plantations in East Texas.
H. A. Ross and J. D. Lenhart.
September, 1994. 20 p.

Report No. 32.
Trends of non-straight tree stems in loblolly and slash pine plantations in East Texas 1985-94.
H. A. Ross and J. D. Lenhart.
December, 1994. 14 p.

Report No. 33.
Climate and growth.
C. C. Brown, H. C. Reeves and J. D. Lenhart.
January, 1995. 5 p.

Report No. 34.
Influence of soil and topography features on ability of land in East Texas to grow loblolly and slash pine plantations.
H. A. Ross, A. J. Londo and J. D. Lenhart
March, 1995. 12 p.

Report No. 35.
Pine and hardwood stumpage price trends for lumber/plywood ... chip-n-saw ...pulpwood timber in East Texas and Louisiana through 1994.
K. B. Scott and J. D. Lenhart.
March, 1995. 4 p.

Report No. 36.
Yield prediction spreadsheets written in Lotus 1-2-3 for PCs and Excel for Macintoshes.
M. McBroom and J. D. Lenhart.
March, 1995. 2 p.

Report No. 37.

Site index equations for loblolly and slash pine plantations in East Texas.
Update: 1995
Members of FOR 317 class - Spring ‘95.
April, 1995. 6 p.

Report No. 38.
Average observed fusiform rust transition paths.
O. Schabenberger, T. G. Gregoire and J. D. Lenhart.
May, 1995. 5 p.

Report No. 39.
Observed average characteristics of unthinned loblolly and slash pine plantations in East Texas.
K. B. Scott and J. D. Lenhart.
October, 1995. 18 p.

Report No. 40.
Influence of plantation variables on crown height.
Y. J. Lee and J. D. Lenhart.
January, 1996. 13 p.

Report No. 41.
Perils Facing ETPPRP Plots (1982-1995).
J. D. Lenhart.
February, 1996. 4 p.

Report No. 42.
High/low counties.
C. Vanderschaaf and J. D. Lenhart.
April, 1996. 6 p.

Report No. 43.
Site index equations for loblolly and slash pine plantations in East Texas
Update: 1996.
FOR 317 students - Spring ‘96.
April, 1996. 6 p.

Report No. 44.
Scenic beauty and plantation age.
Y. J. Lee, H. A. Londo and J. D. Lenhart.

May, 1996. 4 p.

Report No. 45.
Loblolly pine plantations in East Texas: Thinned and unthinned - Total wood flow comparison: A simulation.
J. D. Lenhart and C. Vanderschaaf.
June, 1996. 23 p.

Report No. 46.
Loblolly pine plantations in East Texas
Two harvest schedules
No thinning & final harvest at 25 years
Thin at 10 years & final harvest at 25 years
Sawlog/Veneer wood comparison
A simulation
J. D. Lenhart and J. Allen
November, 1996. 26 p.

Report No. 47.
Loblolly pine plantations in East Texas
Two harvest schedules
No thinning & final harvest at 25 years
Thin at 15 years & final harvest at 25 years
Sawlog/Veneer wood comparison
A simulation
J. D. Lenhart and J. Allen
November, 1996. 26 p.

Report No. 48.
Loblolly pine plantations in East Texas
Two harvest schedules
No thinning & final harvest at 30 years
Thin at 15 years & final harvest at 30 years
Sawlog/Veneer wood comparison
A simulation
J. D. Lenhart and J. Allen
November, 1996. 26 p.

Report No. 49.
Loblolly pine plantations in East Texas
Two harvest schedules:
No thinning & final harvest at 30 years
Thin at 20 years & final harvest at 30 years
Sawlog/Veneer wood comparison
A simulation
J. D. Lenhart and J. Allen
November, 1996. 26 p.

Report No. 50.
Site index equations for loblolly and slash pine plantations in East Texas
Update: Fall 1996.
FOR 317 students - Fall '96.
November, 1996 6 p.

Report No. 51.
Slash pine plantations in East Texas. Thinned and Unthinned - total wood flow comparison. A simulation.
J. Allen and J. D. Lenhart
March, 1997. 24 p.

Report No. 52.
Location. Location. Location. Location.
J. Allen and J. D. Lenhart
March, 1997. 8 p.

Report No. 53.
Slash pine plantations in East Texas
Two harvest schedules
No thinning & final harvest at 30 years
Thin at 15 years & final harvest
at 30 years
Sawlog/Veneer wood comparison
A simulation
J. D. Lenhart and J. Allen
April, 1997. 26 p.

Report No. 54.
Assessment of early estimation of site index - loblolly pine plantations in East Texas.
J. D. Lenhart and J. Allen

September, 1997. 8 p.

Report No. 55.
Observed growth trends - cubic feet wood and bark total stem per acre – loblolly and slash pine plantations - East Texas.
J. D. Lenhart and J. Allen
September, 1997. 8 p.

Report No. 56.
Observed growth trends - basal area per acre in square feet - loblolly and slash pine plantations.
J. D. Lenhart and J. Allen
September, 1997. 8 p.

Report No. 57.
Observed growth trends - quadratic mean diameter - loblolly and slash pine plantations - East Texas.
J. D. Lenhart and J. Allen
September, 1997. 8 p.

Report No. 58.
Observed growth trends - average total height...ten tallest trees - loblolly and slash pine plantations - East Texas.
J. D. Lenhart and J. Allen
September, 1997. 8 p.

Report No. 59.
Site index equations for loblolly and slash pine plantations in East Texas
Update: 1997.
FOR 317 students - Fall 1997.
November, 1997. 6 p.

Report No. 60.
Observed per-acre volume growth trends for 28 individual observations of unthinned lobolly pine plantations East Texas.
A. Burrow.
July, 1998. 30 p.

Report No. 61.

Observed per-acre basal area growth trends for 28 individual observations of unthinned lobolly pine plantations East Texas.

A. Burrow.

July, 1998. 30 p.

Report No. 62.

Site index equations for loblolly and slash pine plantations in East Texas

Update: 1998.

FOR 317 students - Fall 1998.

November, 1998. 6 p.

Report No. 63.

Site index equations for loblolly and slash pine plantations in East Texas

Update: Fall 2000.

FOR 317 students - Fall 2000.

October, 2000. 6 p.

Report No. 64

Observed growth and yield of loblolly and slash pine plantations in East Texas

Shiaolin Cheng and Dean W. Coble

April, 2004.

Report No. 65.

Stumpage price trends of pine and hardwood sawtimber and pulpwood in East Texas and Louisiana.

Shiaolin Cheng and Dean W. Coble

November, 2004.

Report No. 66.

Metric volume and biomass prediction equations for loblolly and slash pine trees planted in unmanaged pine plantations in East Texas.

Dean W. Coble, Young-Jin Lee, and J. David Lenhart

November, 2004. 18 p.

Report No. 67.

A whole-stand growth and yield model for unmanaged east Texas loblolly and slash pine plantations.

Micky G. Allen II, Dean W. Coble, I-Kuai Hung, and Jimmie Yeiser

August, 2010. 12 p.