United States
Department of
Agriculture

Forest Service

Southern
Research
Station

General
Technical
Report
SRS–49

Activities of the Alabama Consortium on Forestry Education and Research, 1993–1999

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Cover photo: Students from Tuskegee and Auburn Universities examine a longleaf pine in Tuckegee National Forest. (Left to right) Sarah Crim, Edward Hunter, Patrick McIntire, Laura Robinson, John Schelhas, and Brittanian Medina.

March 2002

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Abstract

The Alabama Consortium on Forestry Education and Research was established in 1992 to promote communication and collaboration among diverse institutions involved in forestry in the State of Alabama. It was organized to advance forestry education and research in ways that could not be accomplished by individual members alone. This report tells the story of the consortium's first 8 years, documenting its collaborative projects and accomplishments. It contains the historical record of the development of consortium objectives and priorities, as well as details about collaborative research projects and publications in two areas: socioeconomic relationships between forests and people, and forest operations.

Keywords: Forest operations, forestry education and research, people and forests.

Introduction

In the early 1990s, a group of forestry research, education, and management organizations in Alabama formed the Alabama Consortium on Forestry Education and Research. This experience is notable because it reached across institutional and racial boundaries that historically have often proved divisive. They believed that by opening lines of communication and promoting collaborative projects every organization would benefit and all participants could help reach a larger, shared goal of sustainable forest management in the State of Alabama.

The consortium has endured many changes in its membership and composition, proving that its goals and purpose are larger than those of the individuals involved. This report describes the consortium's history and its accomplishments through 1999 and was assembled for several reasons. The first of these was to benefit the consortium itself by providing an historical perspective and the documentation necessary to inform current and future activities. It also offers useful information about the consortium's experiences to people and organizations in other States and regions seeking to open creative dialog and promote collaborative relationships among diverse forestry institutions. The collaborative relationships and projects of the consortium show both the practical benefits and larger ideals that can be realized through such an effort. Finally, this report documents two main research efforts of the consortium: socioeconomic relationships between forests and people, and forest operations for ecosystem management. These are issues of continuing importance in forestry education and research, and we want to ensure that this information is widely available to professionals and researchers in forestry and its allied fields.

The collaboration of consortium members has been key to reaching our common goals and realizing our shared purposes. Therefore, we have included appendices that reflect, as closely as possible, input provided in a consortium workshop, as well as a list of Forest Service-funded consortium research projects.

The Alabama Consortium

The Alabama Consortium on Forestry Education and Research was established in 1992 through a Memorandum of Understanding (MOU) among three important academic institutions: Alabama A&M University, Auburn University, and Tuskegee University and two U.S. Department of Agriculture Forest Service units: the National Forests in Alabama and the Southern Forest Experiment Station, which is now the Southern Research Station. The MOU resulted from a determined commitment by members of all these institutions, including Tom Ellis, Sam Foster, Walter Hill, Jim Shuford, and John Yancy, to combine the strengths of three land grant universities with the strengths of the Forest Service to better serve society. The Alabama Forestry Commission joined the consortium in 1993. The purpose of the consortium is to enhance the environmental, social, and economic benefits from forest resources of Alabama and other States through expanded education of undergraduate and graduate students, collaborative research programs, and technology transfer.

Socioeconomic Research

One of the first goals of the consortium was to establish a program of socioeconomic research based at Tuskegee University. Historically, research in the South has focused on either the biophysical or the economic aspects of forestry with relatively little attention to the social dimensions. By the early 1990s, however, there was widespread recognition that effective forest policy and management required understanding forest-people interactions from the full range of social science perspectives. Such understanding will better guide policymaking and forest management. The socioeconomic research goal of the consortium was defined as "developing procedures, methodology, and infrastructure to effectively incorporate broader social aspects into traditional forestry economic and/or legal research in the South." Specific objectives included (1) addressing social issues of concern to various public groups and stakeholders; (2) exploring the social impacts and interactions of forestry in the South, especially rural development and its potential benefits; (3) addressing issues related to forestry and private lands, including the motivations of private landowners, community needs and objectives, and the environmental effects of forestry; and (4) using all the effectiveness of these objectives to improve forest policies.

An early activity of the consortium was a workshop of social scientists who identified forestry related sociological and socioeconomic research needs in the mid-South (December 14–17, 1993; Southern Forest Experiment Station, New Orleans, LA). The Forest Service national priorities were identified as ecosystem management and understanding of the human dimensions of natural resource management. Southern Research Station participants challenged members to conduct research that was truly collaborative, i.e., at least two institutions working together. The universities wanted to ensure that research efforts would be consistent with their current emphases and mandates: (1) Alabama A&M University would focus on public participation, (2) Auburn University would focus on science, and (3) Tuskegee University would focus on management activities and their social impacts.

Workshop discussions produced a list of 24 research topics that were grouped into 5 topic areas (appendix A). Using these topics, workshop participants proposed the research project "Human Dimensions to Implementing Ecosystem Management on Lands in and Adjacent to National Forests in Alabama." They outlined three objectives that would meet the needs of each institution and promote active collaboration:

1. Develop a sociodemographic profile of landowners living adjacent to the National Forests in Alabama and assess their participation in Federal and State forestry programs [Forestry Incentive Program (FIP), Stewardship Incentive Program (SIP), TREASURE Forest, Conservation Reserve Program (CRP)], and their forest management activities. (Lead institution: Tuskegee University.)
2. Assess the influence of spatial distribution of land ownership on ecosystem management. (Lead institution: Auburn University.)
3. Assess the influence of public participation on ecosystem management. (Lead institution: Alabama A&M University.)

Over the next 5 years, a number of consortium projects falling under these three general problem areas were funded, and two additional research directions were established: (1) explore legal aspects of property rights and forests, and (2) tenure of land and forest owners (appendix B). The projects have provided student training and produced a number of publications.

In December 1999, consortium social science researchers met at Tuskegee University to develop an agenda that would guide future research efforts. Their meeting led to the development of a problem statement and identification of research priorities:

Problem statement: Segments of Alabama's population have been underserved by forestry and forest management because of race and or ethnicity, gender, or resource limitations. Addressing these inequities requires more specific knowledge and better understanding of the social, economic, and cultural relationships between people and forests in the South.

The following research priorities were established:

1. Develop adequate and accurate information on the characteristics and needs of underserved landowners from existing data sources, e.g., census data, county records, and surveys. Important information for Alabama and the South includes both descriptive and spatial data on land ownership, forests uses, and forest values (economic, social, and cultural); relationships between national forests and adjacent communities; participation in conservation extension services and assistance programs; and the social and economic importance of the forest industry.
2. Understand the changing role of southern forests in farming systems and rural economies in a global economy,

and develop new strategies for forest-related rural development. Promising avenues for forest-related rural development include: value-added production, secondary manufacturing, specialty forest products, forestry techniques for limited-resource landowners, hunting, and forest-based recreation.

3. Understand how changes in national forest management affect minority and limited-resource communities and landowners. National forests are now being managed with more consideration to their ecological and social relationships with surrounding lands. New approaches to management, such as ecosystem management, watershed management, and collaborative management require new research approaches and data. Research on the relationships that people have with their national forests will play a fundamental role in evaluating alternative policies and management options; it will enhance the ecological, hydrological, social, and economic contributions that forests make to society.

Forest Operations Research

In 1994, a research program in forest operations was established in conjunction with the consortium, "Developing and Implementing Ecologically Sensitive and Economically Feasible Forest Operations—The Alabama Consortium." The goal of this program was to develop and demonstrate environmentally, socially, and economically feasible forest operations for implementing ecosystem management. The program sought to establish partnerships and interdisciplinary studies to:

1. Improve scientific understanding of how forest operations can manipulate fundamental processes controlling forest ecosystem attributes.
2. Investigate the effects of several types of forest operations on these processes in order to reduce negative impacts.
3. Examine the socioeconomic perspectives on operations within ecosystems and the manner in which system attributes are commonly valued.

Researchers and representatives of the consortium held an initial technical workshop to identify forest operations research needs, and potential collaborators. Following a Request for Proposals, three research projects were funded:

1. Ecologically and economically sustainable site-preparation methods for public and private forest lands.

2. Cut-to-length[1] systems for implementing ecosystem management.

3. Implications of bottomland hardwood management at the landscape scale.

Several additional projects were added, and nine projects now have been funded under this program (see appendix C).

The forest-operations studies generated numerous research publications, student training opportunities, and technology transfer workshops and tours. The consortium has held two major demonstrations on the Tuskegee National Forest, where participants visited several forest-operations research study sites. Several field tours have been conducted on the Yeager tract study site in north Alabama for industrial and Forest Service representatives.

Educational Activities

In addition to conducting socioeconomic and forest operations research, the consortium also is developing collaborative education and training.

[1] Cut-to-length is a ground-based system in which felled trees are processed at the stump into defined log lengths.

Cooperative Educational Programs

In 1995, the presidents of Tuskegee and Auburn Universities signed a Memorandum of Agreement formally establishing a "3+2" program between their institutions. Participating students study for 3 years at Tuskegee and 2 years at Auburn, receiving a Bachelor of Science (B.S.) degree from Tuskegee and a Master of Forestry (M.F.) degree from Auburn. By December 1999, four students had enrolled in this program. All students successfully completed 1 year at Auburn to earn their B.S. degrees in Natural Resources at Tuskegee. One of these students went on to earn an M.F. degree at Auburn, and another is completing a Master of Business Administration degree at Auburn. The other two students have entered graduate programs at Tuskegee.

Consortium members also have collaborated in academic courses. Tuskegee and Auburn experimented with electronically linked courses in 1995, when Warren Flick's class in environmental law at Auburn (10 students) was linked to Ramble Ankumah's class in environmental problems at Tuskegee (6 students). Faculty at Auburn and Alabama A&M have conducted photogrammetry and or Geographic Information System and or remote sensing seminars for forest resource students at Tuskegee.

Facility Sharing

Since 1993, students in Alabama A&M's 8-week summer Forestry Field Techniques have spent the first 2 weeks of their program at Auburn University's Solon Dixon Forestry Education Center. This has added an important new dimension to the Alabama A&M summer forestry program.

Student Support And Education

The consortium has facilitated opportunities for summer internships and employment. From 1993 to 1995, the Forest Service, Southern Research Station, has funded summer internships for two Alabama A&M students per year at Auburn University (three students received internships under this program). Tuskegee University students have had internships and summer employment opportunities at Auburn and at the Forest Service research laboratory in Auburn.

The Forest Service-funded consortium research projects have provided graduate student assistantships for students at all three universities.

The Future

In the year 2000, the consortium continued to expand forestry education and research activities in Alabama. It is now undergoing strategic planning to identify new initiatives by which consortium support and effort can produce synergistic results that will benefit all of its members. The consortium is also evaluating the possible benefits of expansion, either through recruiting new members from Alabama or by involving neighboring States.

Conclusion

The Alabama Consortium on Forestry Education and Research represents an innovative, collaborative effort by three universities, the State of Alabama, and the Forest Service to enhance the environmental, social, and economic benefits received from forest resources in Alabama and the South. After 8 years, the consortium is well established and has had considerable success in enhancing the education of natural resource professionals and developing new knowledge tools for sustainable forest management. Consortium participants continue to find it a useful vehicle for addressing their common goals and interests.

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Appendix A

Research Areas and Topics from 1993 Consortium Workshop[1]

Ecosystem Management

1. The impact of environmental policies on forest management and utilization (focus on industry and individual landowners);
2. Impact of ecosystem management on private forests;
3. Ecological consequences of the independent contractor system, e.g., southern wood supply;
4. Minority landowner and labor impacts due to ecosystem management and environmental regulations, e.g., on the scale of ownership;
5. The differential impact of ecosystem management on minority populations, both positive and negative (focus on landowners, labor, etc.);
6. Small-scale harvesting techniques;
7. The sociological constraints to implementing ecosystem management, e.g., ownership, cooperation, education, perceptions and or misconceptions, etc.; and
8. The impact of urbanization on ecosystem management.

Minority Landowner Concerns

1. Forest industries and resources and human capital development, e.g., timber industry support of human capital development;
2. Landowner perception of and participation in USDA Forest Service and forest-related programs;

[1] Zabawa, Robert; Kolison, Stephen H., Jr. 1994. An Alabama consortium on forestry education and research study: an examination of forestry-related socio-economic research needs in the mid-South. Final Rep. FS–SO–4802, Grant 19–93–098. New Orleans: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; Tuskegee, AL: Tuskegee University. 8 p. + appendices. On file with: U.S. Department of Agriculture, Forest Service, Southern Research Station, 701 Loyola Avenue, New Orleans, LA 70113.

3. Minority landowner and labor impacts due to ecosystem management and or environmental regulations, e.g., on the scale of ownership;
4. The differential impact of ecosystem management on minority populations, both positive and negative (focus on landowners, labor, etc.); and
5. Minority (versus non-minority) landowner reinvestment in timber.

Rural Development

1. Timber dependency and development;
2. Forest industries and resources and human capital development, e.g., timber support of human capital development;
3. Investment potential of forest-related industries;
4. Community recruitment of forest-related industries—the costs and benefits, e.g., the role of infrastructure, tax incentives, etc., on recruitment;
5. Role of Tenn-Tom (Tennessee Tombigbee Waterway) on rural community development; and
6. Minority (versus non-minority) landowner reinvestment in timber.

Recycling

1. Sociological implications of paper recycling and impacts on specific groups, e.g., pulp mills, contractors (minority) , etc.; and
2. Sociological impediments to paper recycling, e.g., education, economics, incentives, access, etc.

Public Input (Participation)/Policy

1. The impact of environmental policies on forest management/utilization and ecosystem management, e.g., focus on the industry and the individual landowner;
2. Public input in public and private land management planning, e.g., the appeals process; and
3. Impact of changes in the Northwest region on the timber industry in the southern region.

Appendix B

Forest Service-Funded Consortium Research Projects
Social Science

1. Public participation for ecosystem management: identifying effective public participation procedures, values, and perceptions.

Goals and Objectives:
Provide a comprehensive method for collecting and analyzing public input, participant characteristics, group interactive mechanisms, and information dissemination techniques from which recommendations can be made for effective public participation in forest plan development.

Activities:
- Survey National Forests in Alabama stakeholders in forest plan development.
- Measure participant characteristics and motivation.
- Measure participant perceptions and stated beliefs of stakeholders with regard to conservationist and utilitarian attitudes.

Researchers	Institutions	Agreement No.	Dates
Michael Heard	Alabama A&M Univ.	19–93-098	10/94–1/97

2. Identifying effective public participation procedures, bioindicators for ecosystem management, and economic tradeoffs.

Goals and Objectives:
Examine the bioindicators of healthy ecosystems based on values of various public groups (stakeholders) participating in national forest planning.

Activities:
- Conduct literature review on bioindicators for ecosystem management.
- Compile data sources for implementing a linear programming model on the impacts of public values on forest management activities.
- Compile a list of stakeholders and participants in Forest Service public participation efforts, draft questionnaire, and plan Delphi procedures.

Researchers	Institutions	Agreement No.	Dates
Michael Heard	Alabama A&M Univ.	19–94–098	10/94–9/96
Warren Flick	Auburn Univ.	19–94–097	10/94–9/96

3. Socio-demographic profile and spatial distribution of landowners in and around Tuskegee National Forest.

Goals and Objectives:
Identify the opportunities, incentives, and constraints in implementing ecosystem management.

Activities:
- Elicit the goals, objectives, and concerns of private landowners adjacent to and within Tuskegee National Forest.
- Produce a social, economic, and demographic profile of private landowners adjacent to and within Tuskegee National Forest.
- Determine landowner participation in forestry incentive programs.
- Develop a GIS system for integrating and analyzing spatial, ecological, social, economic, and demographic data on landowners adjacent to and within the Tuskegee National Forest.

Researchers	Institutions	Agreement No.	Dates
John Bliss	Auburn Univ.	19–94–094	10/94–9/96
Larry Teeter	Auburn Univ.	19–94–094	10/94–9/96
Steve Kolison	Tuskegee Univ.	19–94–095	10/94–1/97
Robert Zabawa	Tuskegee Univ.	19–94–095	10/94–1/97

4. Postcontract plans for Conservation Reserve Program (CRP) acres: a case study of Alabama farmers.

Goals and Objectives:
Provide insights into the potential use and allocation of Alabama land presently enrolled in Federal and State forestry and conservation incentive programs, in order to determine and predict potential change for land under conservation programs.

Activities:
- Gather and analyze data regarding the future use of currently expiring CRP contracts.
- Determine conservation retention plans.
- Analyze CRP participants' social, economic, and demographic characteristics.
- Analyze policy implications of the disposition of CRP lands.

Researchers	Institutions	Agreement No.	Dates
Odili Onianwa	Alabama A&M Univ.	10–95–074	10/95–3/97
Gerry Wheelock	Alabama A&M Univ.	10–95–074	10/95–3/97
Mark Dubois	Auburn Univ.	10–95–069	10/95–3/97
Steve Kolison	Tuskegee Univ.	10–95–069	10/95–3/97

5. Property rights in the Federal courts and the claims court.

Goals and Objectives:
Provide insight into the cross-boundary, coordinated decision-making required in implementing ecosystem management on public and private lands by examining the legal implications of recent Supreme Court decisions regarding property rights.

Activities:
- Locate and interpret Federal court opinions (district and 11th judicial circuit, Claims Court, Federal Circuit, and D.C. Circuit) on property rights.
- Determine trends in the interpretation and application of Supreme Court rulings concerning regulatory takings under the 5th Amendment of the U.S. Constitution.

Researchers	Institutions	Agreement No.	Dates
Michael Heard	Alabama A&M Univ.	19–95–072	10/95–9/96
Warren Flick	Auburn Univ.	19–95–070	10/95–9/96

6. Forest tenure[1] and rural well being in Alabama.

Goals and Objectives:
Improve rural development strategies through enhancing understanding of the influence of forest tenure upon rural well being and development.

[1] Sociologists use the term tenure to describe bundles of rights and obligations related to use and ownership and land and resources that are recognized by some authority.

Activities:
- Determine existing forest ownership patterns in Alabama with respect to ownership category and tract size.
- Analyze the historical evolution of existing forest tenure patterns and develop probable future ownership scenarios.
- Examine relationships between existing forest tenure patterns and rural well being.

Researchers	Institutions	Agreement No.	Dates
Sunil Nepal	Alabama A&M Univ.	10–95–073	10/95–9/97
John Bliss	Auburn Univ.	10–95–068	10/95–9/97

7. Female forest land ownership strategies in the South: management options, opportunities, and constraints.

Goals and Objectives:
Discover if women who own and manage forest land are competing equitably in one of the strongest economic sectors in the South.

Activities:
- Identify who participates in managing female-owned forest and woodland, e.g., owner, consulting or extension forester, forest industry.
- Understand the objectives of their forest management decisions, e.g., timber, wildlife, recreation, and combinations thereof.
- Determine individual and institutional constraints to and opportunities for increased benefits to female forest landowners as a result of owner control of forest management decision-making.

Researchers	Institutions	Agreement No.
Sarah Warren	USDA Forest Service	Internal
Ellene Kebede	Tuskegee Univ.	Collaborator
Wanjiru Gichuhi	Tuskegee Univ.	Collaborator

8. Private and public hunting lands in the Southeastern United States: effects of changing property patterns on rural communities.

Goals and Objectives:
Discover if hunting pressures on public lands are elevated due to use by populations increasingly excluded from private lands.

Activities:
- Describe the impact of changing property ownership patterns in the Southeast.
- Determine the trends in fee hunting, land leasing, the development of private hunting club lands, and other types of enclosure of private property.
- Determine the demand for, supply of, and distribution of subsistence hunting opportunities.

Researchers	Institutions	Agreement No.
Sarah Warren	USDA Forest Service	Internal
Robert Zabawa	Tuskegee Univ.	Collaborator

9. The origins of the Tuskegee National Forest: 19th and 20th century land development and resettlement programs in Alabama.

Goals and Objectives:
To discover and describe the allocation and distribution of resettlement project lands, beginning with Creek Indian Removal in 1836 and continuing through the creation of Tuskegee National Forest.

Activities:
- Determine if the original goals of two Farm Security Administration programs—the relocation of subsistence farmers from nonproductive lands and the subsequent creation of the national forest, coupled with resettlement of these farmers—were met.
- To analyze the social relationships involved in the transfers of land ownership and changes in productivity.

Researchers	Institutions	Agreement No.	Dates
Sarah Warren	USDA Forest Service	Internal	
Robert Zabawa	Tuskegee Univ.	SRS–30–CA–96–039	9/96–6/99
Joseph Betecadu	Alabama A&M Univ.	SRS–30–CA–96–038	9/96–4/99

10. The socioeconomic impacts of reduced public timber harvest on local communities: a case study in Alabama and a decision-making model for national forests in the United States.

Goals and Objectives:
To provide a comprehensive assessment of socioeconomic impacts of reductions in timber sales on National Forests in Alabama.

Activities:
- Characterize the socioeconomic status of the counties in Alabama with national forests.
- Assess the level of dependency of these Alabama counties on employment and income generated by national forest timber production.
- Determine the local socioeconomic impacts of reduced harvest levels in National Forests in Alabama.

Researchers	Institutions	Agreement No.	Dates
Stephen Kolison	Tuskegee Univ.	SRS–30–CA–96–043	9/96–6/00
Jianbang Gan	Tuskegee Univ.	SRS–30–CA–96–043	9/96–6/00

11. Maintaining the estate of limited-resource-forest landowners

Goals and Objectives:
Evaluate alternatives to the current form of ownership transfer between generations of forest landowners, with particular attention to alternatives for limited resource landowners.

Activities:
- Determine the extent of land ownership for limited resource forest landowners.
- Identify the problems associated with maintaining the estates of limited resource forest landowners with case studies.
- Advance alternative solutions for the case studies showing the benefit that can be achieved through estate planning.
- Develop a set of teaching modules to explain the alternatives available to limited resource forest landowners.

Researchers	Institutions	Agreement No.	Dates
Robert Tufts	Auburn Univ.	SRS–33–CA–98–441	9/98–5/01
Mark Dubois	Auburn Univ.	SRS–33–CA–98–441	9/98–5/01
Robert Zabawa	Tuskegee Univ.	SRS–33–CA–98–443	9/98–5/01

12. Evaluation of program participation behavior of limited resource forest landowners in Alabama.

Goals and Objectives:
Evaluate limited resource forest landowners' participation behavior in conservation cost-share programs in Alabama.

Activities:
- Survey limited resource forest landowners to collect qualitative and quantitative information on characteristics, attitudes, and other factors that influence participation behavior.

Researchers	Institutions	Agreement No.	Dates
Odili Onianwa	Alabama A&M Univ.	SRS–33–CA–99–737	8/99–8/01
Gerald Wheelock	Alabama A&M Univ.	SRS–33–CA–99–737	8/99–8/01
Jianbang Gan	Tuskegee Univ.	SRS–33–CA–99–725	8/99–8/01
Mark Dubois	Auburn Univ.	SRS–33–CA–99–725	8/99–8/01

Appendix C

Forest Service-Funded Consortium Research Projects
Forest Operations

1. Ecologically and economically sustainable site preparation methods for public and private lands.

Goals, objectives, and activities:
To characterize a full spectrum of site preparation methods and the resulting even-aged and uneven-aged stands at 11–15 years old; comparing and contrasting structures, plant composition/diversity, nutrient cycling/retention functions, soil improvement/degradation trends, and aesthetic attributes. Study cases are in the Tuskegee, Talladega, and Bankhead National Forests, and on three industrial forestry sites.

To perform integrated economic evaluation and projection of the stands' commodity and non-commodity values that result from these site preparation investments.

To provide demonstration sites, educational opportunities, and multidisciplinary networking of managers and researchers to further management of multi-resource values on landscapes encompassing National Forests, forest industry, and nonindustrial private forest lands.

Research Coordinator:
Jim Miller, USDA Forest Service, Southern Research Station (SRS–4105, Vegetation Management Research and Longleaf Pine Research for Southern Forest Ecosystems).

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4105, Vegetation Management Research and Longleaf Pine Research for Southern Forest Ecosystems), Alabama A&M University, Auburn University, Tuskegee University, National Forests in Alabama (Tuskegee, Talladega, and Bankhead Districts), Union Camp Corporation, and Kimberly Clark Corporation

2. Cut-to-length systems for implementing ecosystem management.

Goals, objectives, and activities:
Determine if cut-to-length systems are capable of achieving stand manipulations with acceptable ecological effects and economic performance for a range of stand improvement and health cuttings.

- Evaluate system productivity and costs, site effects, and stand effects for selected systems.
- Determine the effect of prescription (size, volumes, spacing) on operation.
- Examine the relationship of machine configuration to soil disturbance.
- Provide technology transfer on national forest lands through establishment of permanent plots, a field demonstration, and a workshop.

Research Coordinator:
Bob Rummer, USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources).

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Alabama A&M University, Auburn University, Tuskegee University, National Forests in Alabama (Tuskegee District and Supervisor's Office).

3. Evaluation of alternative prescriptions in upland hardwood forests.

Goals, objectives, and activities:
An assessment of machine productivity, tree regenerations, soil impacts and movement, and aesthetics of four silviculture treatments: (1) clearcut, (2) corridor cut, (3) high basal area cut (deferment), and (4) control of randomized block design replicated three times. Additional comparisons include importance of aspect (north vs. south) and time of harvest (dormant vs. growing season).

Research Coordinator:
Bryce Stokes, USDA Forest Service, National Headquarters, formerly with the Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources).

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Alabama A&M University, Auburn University, National Forests in Alabama (Bankhead District and Supervisor's Office), Morgan County Forestry Planning Commission, Alabama Forestry Commission, Champion International

4. Water quality effects of temporary stream crossings.

Goals, objectives, and activities:
To assess the sediment generation associated with three alternatives for crossing small streams: (1) culverts, (2) fords, and (3) temporary bridges. Sediment generation will be determined for the life cycle of crossings, including construction, use, and removal/stabilization.

Research Coordinator:
Steve Taylor, Auburn University

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Auburn University (Department of Agricultural Engineering and Department of Botany and Microbiology), National Forests in Alabama (Shoal Creek District and Supervisor's Office).

5. Assessment of surface erosion control techniques on forest roads.

Goals, objectives, and activities:
Evaluate the effectiveness of three erosion control techniques on sediment yield and runoff volume from newly constructed forest side slopes. The study compares (1) erosion mat, (2) native seed mixture, and (3) exotic seed mixture, on the basis of sediment yield, runoff, and cost. The study will provide a better understanding of soil movement and runoff trends from erosion control treatments used on cut and fill slopes.

Research Coordinator:
John Grace, USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources).

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Auburn University (Department of Agricultural Engineering), National Forests of Alabama (Shoal Creek District).

6. Control of sediment export from forest access systems.

Goals, objectives, and activities:
Evaluate sediment reduction techniques used on turn-out ditches of forest roads. Four treatment methods (vegetation, rip-rap, sediment fences, and settling basins) will be evaluated to determine their effects on sediment export. Results will provide valuable knowledge required to improve current turn-out ditch BMPs, promote sustainable ecosystem management, and protect forest water quality.

Research Coordinator:
John Grace, USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources)

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), National Forests of Alabama (Tuskegee National Forest), Alabama Forestry Commission (Macon County).

7. Implications of bottomland hardwood management at the landscape scale: evaluations of biogeochemical effects of harvesting options.

Goals, objectives, and activities:
Determine the impact of partial vs. clearcut management on belowground carbon cycling and nutrient processes.

Research Coordinator:
Graeme Lockaby, Auburn University

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Auburn University (School of Forestry), Tuskegee University (Forest Resources Program), International Paper Company.

8. Assessment of economic efficiency and environmental impacts of major timber harvesting systems in Alabama.

Goals, objectives, and activities:
Identify major timber harvesting systems currently used or under development in Alabama. Evaluate cost effectiveness of these systems, and provide an accurate assessment of environmental impacts of each associated harvesting systems.

Research Coordinator:
John Grace, USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources)

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Tuskegee University (School of Agricultural and Home Economics).

9. Assessment of cumulative effects of forestry practices at multiple landscape scales.

Goals, objectives, and activities:
Streamside management zones (SMZ) are the primary practice to control nonpoint source pollution in actively managed forested watersheds. Characterize the water quality impacts of three SMZ treatments: (1) clearcut and regenerate SMZ prior to upslope harvest, (2) partial cut and enhance SMZ prior to harvest, and (3) no cutting in the SMZ. Specifically

- Characterize hydrological variations, such as water table depth, stream discharge, and channel morphology,
- Evaluate water physical and chemical responses, such as temperature, suspended solids, nitrate, pH, and ammonium,
- Assess nutrient cycling in the SMZ through litterfall and soil mineralization,
- Examine benthic invertebrate population responses to manipulations.

Research Coordinator:
Bryce Stokes, USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources)

Cooperators:
USDA Forest Service, Southern Research Station (SRS–4703, Biological/Engineering Systems and Technologies for Ecological Management of Forest Resources), Auburn University, International Paper, Union Camp, American Forest and Paper Association, National Council of the Paper Industry for Air and Stream Improvement.

Schelhas, John. 2002. Activities of the Alabama Consortium on forestry education and research, 1993–1999. Gen. Tech. Rep. SRS–49. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 32 p.

The Alabama Consortium on Forestry Education and Research was established in 1992 to promote communication and collaboration among diverse institutions involved in forestry in the State of Alabama. It was organized to advance forestry education and research in ways that could not be accomplished by individual members alone. This report tells the story of the consortium's first 8 years, documenting its collaborative projects and accomplishments. It contains the historical record of the development of consortium objectives and priorities, as well as details about collaborative research projects and publications in two areas: socioeconomic relationships between forests and people, and forest operations.

Keywords: Forest operations, forestry education and research, people and forests.

The Forest Service, United States Department of Agriculture (USDA), is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.