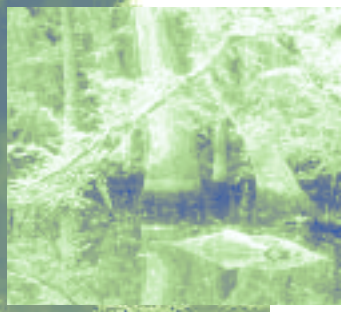
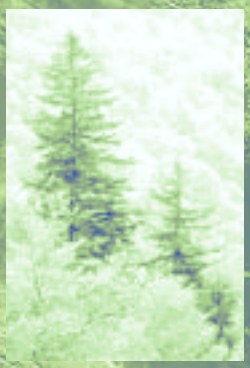
SOUTHERN FOREST RESOURCE ASSESSMENT

■ What are the history, status, and projected future of terrestrial wildlife habitat types and species in the South? ■ What are the history, status and projected future of native plant communities in the South? ■ What are the likely effects of expanding human populations, urbanization and infrastructure development on wildlife and their habitats? ■ What are the historical and projected future impacts of forest management and access on terrestrial ecosystems in the South? ■ What conditions will be needed to maintain animal species associations in the South? ■ How have land uses changed in the South and how might changes in the future affect the area of forests? ■ What are the attitudes and values of southern residents toward forests and their management, and how have they changed over time, and do they differ by demographic groups? ■ How do current policies, regulations, and laws affect forest resources and their management? ■ What motivates private forest landowners to manage their forest land and how are their management objectives formed? ■ What role do forests play in employment and local economies in the South? ■ What are the supplies of and demands for forest-based recreation and other noncommodity uses of forests in the South? ■ How do forests and their uses influence the quality of life in the South? ■ What are the history, status and projected future demands for and supplies of wood products in the South? ■ What are the status and trends of forest management practices in the South? ■ How might existing and new technologies influence forest operations and the resultant conditions of forests? ■ What are the history, status and projected future of southern forests? ■ How have biological agents including insects and disease influenced the overall health of the South's forests and how will they likely affect it in the future? ■ How have abiotic factors, including environmental stressors such as air pollution, influenced the overall health of the South's forests, and what are future effects likely to be? ■ What are the history, status, and likely future of water quality in southern forested watersheds? ■ What are the history, status, and likely future of forested wetlands in the South? ■ How have forest management activities and other forest uses influenced water quality, aquatic habitat, and designated uses in forested watersheds? ■ What are the implementation rates and effectiveness of BMPs in the South? ■ What are the history, status, and likely future of aquatic habitats and species in the South?





About the Editors

David N. Wear is the Project Leader of the Economics of Forest Protection and Management Research Work Unit, Southern Research Station, U.S. Department of Agriculture, Forest Service, Research Triangle Park, NC 27709.

John G. Greis is a State and Private Forestry Environmental Program Specialist, Southern Region, U.S. Department of Agriculture, Forest Service, Atlanta, GA 30309.

Cover photo: A beautiful spring day in the southeastern United States is seen in this SeaWiFS image. Several smoke plumes are visible including a rather large one that originates in Georgia, midway between the Savannah and Altamaha rivers. A good-sized plume of turbid water can also be seen flushing out of Mobile Bay. Photo courtesy of the SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE.

September 2002

Southern Research Station
P.O. Box 2680
Asheville, NC 28802

SOUTHERN FOREST RESOURCE ASSESSMENT

Edited by:

David N. Wear and
John G. Greis

Acknowledgments

The Southern Forest Resource Assessment was a cooperative effort involving contributions from many people and organizations. We wish to express our grateful appreciation to all who contributed to the Assessment, especially the following:

The leaders of the cooperating Federal agencies: Elizabeth Estill and Pete Roussopoulos, USDA Forest Service; John Hankinson, U.S. Environmental Protection Agency; Sam Hamilton, U.S. Fish and Wildlife Service; and representatives of cooperating State agencies: Fred Allen, Chairman of the Southern Group of State Foresters; and Greg Duffy, President of the Southeastern Association of Fish and Wildlife Agencies, who initiated and lent support to completion of the Assessment.

The Assessment Planning Team, comprised of Heinz Mueller, Ben West, and Sharon Osowski (U.S. Environmental Protection Agency); Lee Barclay and the late Tyler Sykes (U.S. Fish and Wildlife Service); Jim Williamson and Harold Draper (Tennessee Valley Authority); Tommy Loggins (Georgia Forestry Commission); Brant Miller (Tennessee Wildlife Resources Agency); and David Hoge (USDA Forest Service), who provided guidance and agency coordination from the Assessment's inception to its completion.

The Assessment Team, comprised of the individual chapter authors and coauthors, and the many individuals who assisted them in the preparation and peer review of their chapters.

The Public Affairs Staff of the USDA Forest Service, Southern Region and Southern Research Station, especially Angela Coleman, Tony Dixon, Carol Ferguson, and Terry Seyden, as well as the late Bruce Kinzel, who assisted with public meetings and prepared and managed the entire communications effort from start to finish.

Nancy Walters (USDA Forest Service, Southern Research Station), who provided invaluable assistance in the design and facilitation of team meetings throughout the process.

Bruce Jewell (USDA Forest Service, Southern Research Station), whose advice and guidance on the public involvement process ensured that interested parties were included and enabled to participate in a meaningful way.

The interested public, who worked from the beginning to the end of the Assessment to make certain that it objectively addressed the issues of vital interest to the public. Interest in the Assessment and its findings has been intense, and that bodes well for southern forests.

John Pye (USDA Forest Service, Southern Research Station), who designed and managed the Assessment Web site and the information structures that allowed the process, the report, and the data to be accessible and user-friendly for the authors and the public.

Renee Boozer (USDA Forest Service, Southern Research Station), for her diligence in managing the correspondence of the Assessment.

The Communications Office (USDA Forest Service, Southern Research Station), especially Carol Ferguson, Diana Corbin, and Rod Kindlund for the design and production of the final reports.

Bob Biesterfeldt, the dean of forest science editors, for his timely and highly professional editing services.

The Greis and Wear families, whose patience and support during the 3-year Assessment period allowed the coleaders to concentrate on the Assessment and to travel widely to ensure its success.

Dave Wear and John Greis

Coleaders

Southern Forest Resource Assessment

Preface

The Southern Forest Resource Assessment (SFRA) was initiated in 1999 as a result of concerns raised by natural resource managers, the science community, and the public regarding the status and likely future of forests in the South. These included changes to the region's forests brought about by rapid urbanization, increasing timber demand, increasing numbers of satellite chip mills, forest pests, and changing air quality. In response to these issues, leaders of four of the region's Federal natural resource agencies—USDA Forest Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and the Tennessee Valley Authority—agreed to work together to provide a careful evaluation of the overall condition and ongoing changes of southern forests. State forestry and fish and wildlife agencies were invited to take part and actively contribute to the effort. The USDA Forest Service, through the Southern Region and Southern Research Station, provided overall leadership. This report and a summary report are the products of a 3-year process that involved much scientific inquiry and public involvement. Because of its role in determining the form of the analysis and products, the process itself deserves description.

The Assessment was organized around a set of questions that defined its intent and scope. Each of the first 23 chapters of this report answers a specific question defined through a public process—
the initial phase of the Assessment. Initial concerns were drafted by a group of about 75 experts from participating government agencies, using a workshop format. They were organized within four broad topic areas—social/economic, terrestrial ecosystems, water and aquatic ecosystems, and forest conditions and health—and then summarized as a preliminary set of Assessment questions. These were presented to the public for discussion and input.

To gather public input, two workshops were conducted at each of five locations around the South. After the audience was presented with an overview of the project's objectives and general design, attendees were invited to take part in any or all of four separate breakout sessions organized around the four broad topic areas. In each of these facilitated sessions, participants were invited to identify concerns and issues that they believed should be addressed by the Assessment. Each session was recorded and the responses compiled. For those who could not attend one of the meetings, initial draft questions were also posted on the Assessment Web site, and comments were welcomed by mail and email. Utilizing the comments received, Assessment leaders crafted another iteration of questions, adding details obtained from public input. A second round of public comment was used to craft the semifinal iteration of questions.

A scientist/analyst was selected by the Assessment Planning Team to conduct the analysis for each question. These individuals, called question managers, comprised the Assessment Team. This team included representatives of the USDA Forest Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and academia. In February 2000, the Assessment Team was convened for an initial meeting to finalize their questions, assess the feasibility of addressing the

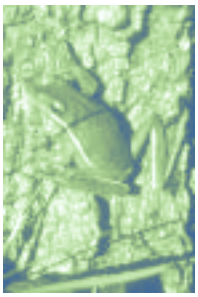
questions, and draft initial study plans. The final Assessment questions are listed after the chapter titles in the "Table of Contents" of this report. Public input was also requested on the draft study plans. Following public review and comment, the plans were finalized, and the analysis was begun.

Each question manager was encouraged to consult with colleagues or to build his/her own research team to complete the work. During the course of the nearly yearlong analysis, two Assessment Team meetings were conducted to discuss progress, share data, and coordinate efforts. These meetings were open to the public but were carefully designed to allow the team to efficiently conduct their business while interacting with the attendees in an organized way. Importantly, preliminary findings were never discussed in open Assessment Team meetings, consistent with a strict team policy that findings not be released piecemeal and without careful peer review.

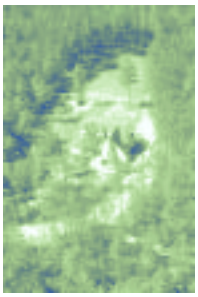
Responses to each question were drafted by question managers and submitted as separate chapters for the technical report, and Assessment coleaders compiled and synthesized major findings from them for the summary report. All documents were then evaluated using a peer review process patterned after standard approaches utilized by scientific journals. Subject experts were selected from a set of candidates suggested by members of the public, agency representatives on the Assessment Planning Team, and the question managers themselves. A single-blind peer review process was employed—the identities of the reviewers were kept confidential—in order to maximize candor in the reviews. Once received, reviews were compiled and returned to the question managers for consideration as they revised their chapters and finalized them for release in the draft report. On November 26, 2002, the draft chapters (including the summary report) were published via the SFRA Web site and compact disc, and the draft summary report was printed and made available for distribution.

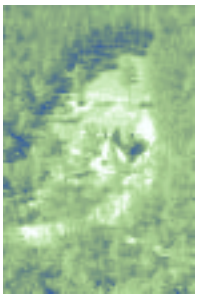
Although draft reports had been peer reviewed by more than 100 experts, the Assessment Planning Team had agreed early in the process to provide the public an opportunity to review them and offer feedback on their accuracy and completeness. Ninety days were provided for this purpose, during which time comments were received via a threaded message board on the SFRA Web site and through the mail. Comments were evaluated and parsed into specific points, organized by chapter, and distributed to question managers for consideration while making final chapter revisions.

The chapters contained in this report represent the Assessment Team's best effort to address the critical issues regarding the status and likely future of southern forests. They provide a synthesis of the available, pertinent literature across a broad suite of scientific disciplines. In addition, they provide insights into where knowledge is lacking and identify topics that warrant additional investigation. We hope that the information contained in this report, along with the glossary and comprehensive datasets available at the Assessment Web site (http://www.srs.fs.fed.us/sustain), will enhance understanding of southern forests, inform public discussion and debate, and improve public forest policies for the benefit of all.

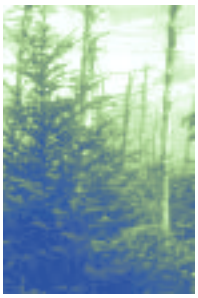


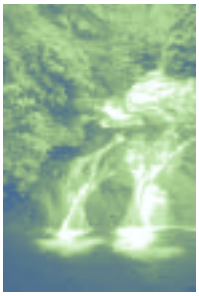
Contents

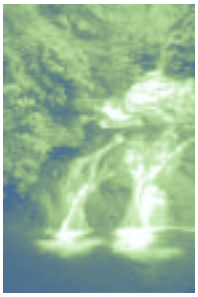




Contents, cont.

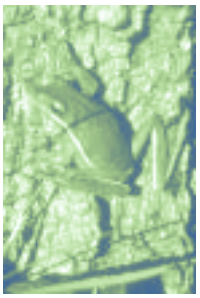


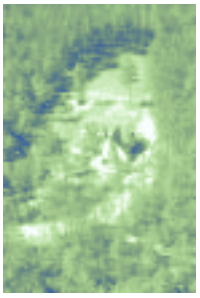


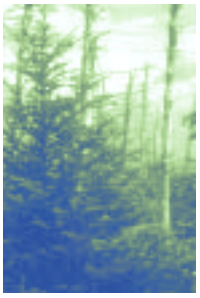


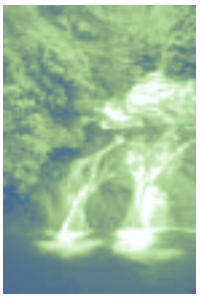
Contents, cont.

TERRESTRIAL SOCIAL TIMBER HEALTH AQUATIC HISTORY FIRE









USDA Forest Service
Environmental Protection Agency
U.S. Fish & Wildlife Service
Tennessee Valley Authority

In collaboration with the Southern Group of State Foresters and the Southeastern Association of Fish and Wildlife Agencies

General Technical Report SRS-53