

The Southern Appalachian Assessment was accomplished through the cooperation of federal and state natural resource agency specialists. This page displays the logos of the agencies involved. The strong emphasis placed on working together toward a common goal is increasingly recognized as essential to effective government operation. Teamwork has strengthened our interagency understanding and communication. With the assessment as a framework for future action, government policy and management can become more consistent and better coordinated.

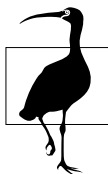
The assessment employs the latest technology in geographic information systems and computer communication. These tools make the information more useful to analysts and decision-makers. They should also facilitate future networking and information sharing among government agencies, educators, and the public.



Department of Environment, Health, and Natural Resources



US Army Corps of Engineers
South Atlantic Division



U.S. DEPARTMENT OF THE INTERIOR
NATIONAL BIOLOGICAL SERVICE



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OAK RIDGE NATIONAL LABORATORY
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THE
SOUTHERN
APPALACHIAN
ASSESSMENT

ATMOSPHERIC
TECHNICAL REPORT

Prepared by Federal and State Agencies

*Coordinated through Southern Appalachian
Man and the Biosphere Cooperative*

July 1996



REPORT
3 OF 5

Abstract

This document summarizes data and assesses trends of air quality within and near the Southern Appalachian area. The major topics include: emissions of pollutants which could impact natural resources, current levels of particulate matter, current and historical visibility conditions, acid deposition impacts to aquatic resources, and ground-level ozone impacts to forests. The assessment results indicate air pollution is impacting some natural resources, and current legislative and regulatory efforts may reduce pollution impacts in the future.

Cover photos are by Bill Lea®, Asheville, North Carolina; report designs and layout are by Project Center, Atlanta, Georgia; maps are by agency Geographic Information Systems; other graphics and tables are by Blue Line, Inc., Roanoke, Virginia.

Preface

Our vision for the Southern Appalachian region is an environment for natural resources management that applies the best available knowledge about the land, air, water, and people of the region. Applied on public lands, this knowledge would provide a sustainable balance among biological diversity, economic uses, and cultural values. All would be achieved through information gathering and sharing, integrated assessments, and demonstration projects.

The Southern Appalachian Assessment takes a major step toward fulfillment of that vision. It is an ecological assessment – a description of conditions that goes beyond state, federal, or private boundaries. In using Southern Appalachian Assessment data, land managers can base their decisions on the natural boundaries of ecosystems rather than on the artificial boundaries of counties, states, or national forests and parks.

The assessment was accomplished through the cooperation of federal and state natural resource agencies within the Southern Appalachian region. It was coordinated through the auspices of the Southern Appalachian Man and Biosphere (SAMAB) cooperative. Members of the cooperative are: U.S. Department of Agriculture, Forest Service; Tennessee Valley Authority; U.S. Environmental Protection Agency; U.S. Department of the Interior, Geological Survey, National Park Service, National Biological Service, Fish and Wildlife Service; Appalachian Regional Commission; U.S. Army Corps of

Engineers; Georgia Department of Natural Resources; North Carolina Department of Environment, Health, and Natural Resources; Tennessee Department of Environment and Conservation; U.S. Department of Commerce, Economic Development Administration; and the U.S. Department of Energy, Oak Ridge National Laboratory. This cooperation significantly expanded the scope and depth of analysis that might have been achieved by separate initiatives. It also avoided duplicating work that might have been necessary if each agency had acted independently. The findings in this assessment do not reflect unanimous (unqualified) views of all agencies involved on all points.

Although the Southern Appalachian Assessment is broad and comprehensive in subject matter and geographic scope, there are many opportunities to further expand the analyses based on this data. Urgent demands for the assessment data restricted our time-frame. So, identifying data gaps became as important a task as identifying and gathering existing data. The Southern Appalachian Assessment serves as both a useful reference and as a benchmark for future analyses.

There was no specific statutory requirement for the assessment. However, national forest land and resource management plans authorized under the 1976 National Forest Management Act have been in place for almost 10 years and are therefore subject to revision. Due to the relationship of the national forests and other federal lands

to the biological, social, and economic conditions in the assessment area, more comprehensive and more scientifically credible data are needed to facilitate land management planning. This assessment supports individual forest plans by determining how the lands, resources, people, and management of the national forests interrelate within the larger context of the surrounding lands. The broadly identified pollutants and impacts of concern are not intended as a source of information upon which to base future regulatory or permitting action.

This report is one of five that document the results of the Southern Appalachian Assessment. The reports include a summary report, atmospheric, social/cultural/economic, terrestrial, and aquatic reports.

The five reports are available in printed form and via the Internet. By providing

direct access to assessment materials via Internet, we hope that users can obtain information more quickly and at a lower cost than would have been possible otherwise. As with most reference documents, users will need only a small portion of the assessment for their specific projects at any given time. Moreover, an Internet document can be revised or updated when the occasion arises.

In-depth versions of data are available on the SAMAB, Forest Service, and Info South Home Pages on the World-Wide Web (WWW). These versions can be accessed at <http://www.lib.utk.edu/samab> for SAMAB's Southern Appalachian Home Page, at <http://www.fs.fed.us/> for the Forest Service Home Page and at <http://wwwfs.libs.uga.edu> for the Info South Home Page. Additional materials such as maps and data that support the assessment are described and referenced in each report.

The Southern Appalachian Assessment is presented in five separate reports. The reports can be cited as follows:

Southern Appalachian Man and the Biosphere (SAMAB). 1996. The Southern Appalachian Assessment Summary Report. Report 1 of 5. Atlanta: U.S. Department of Agriculture, Forest Service, Southern Region.

Southern Appalachian Man and the Biosphere (SAMAB). 1996. The Southern Appalachian Assessment Aquatics Technical Report. Report 2 of 5. Atlanta: U.S. Department of Agriculture, Forest Service, Southern Region.

Southern Appalachian Man and the Biosphere (SAMAB). 1996. The Southern Appalachian Assessment Atmospheric Technical Report. Report 3 of 5. Atlanta: U.S. Department of Agriculture, Forest Service, Southern Region.

Southern Appalachian Man and the Biosphere (SAMAB). 1996. The Southern Appalachian Assessment Social/Cultural/Economic Technical Report. Report 4 of 5. Atlanta: U.S. Department of Agriculture, Forest Service, Southern Region.

Southern Appalachian Man and the Biosphere (SAMAB). 1996. The Southern Appalachian Assessment Terrestrial Technical Report. Report 5 of 5. Atlanta: U.S. Department of Agriculture, Forest Service, Southern Region.

Table of Contents

	Acknowledgments	vii
	Executive Summary	1
chapter	1 Introduction	7
chapter	2 Major Air Pollutants	9
chapter	3 Particulate Matter in the Air	21
chapter	4 Visibility in the Southern Appalachians	27
chapter	5 Acid Deposition	41
chapter	6 Ground-Level Ozone	53
chapter	7 Information and Research Needs for the Next Assessment	63
	Appendix A	65
	List of Figures	67
	List of Tables	69
	References	71
	Glossary	79

Acknowledgments

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The lead authors for the chapters in this report were: Bruce Bayle (Executive Summary and Chapter 7), Scott Copeland (Chapter 4), Cindy Huber (Chapter 4), Bill Jackson (Executive Summary and Chapters 1, 2, and 6), Dr. Kathy Tonnessen (Chapter 5), and Dave Wergowske (Chapter 3). The Team began holding public meetings in November 1994. We appreciate the efforts of Terry McDonald, Bob Miller, Karen Greene, Terry Seyden, and Carol Milholen in arranging meeting locations, and lodgings, and in preparing the minutes from those meetings. We are grateful to the people who took time to provide external review and comment on the following chapters:

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Finally, we are deeply thankful for Holly Selig's assistance in building some of the data bases and in teaching us how Geographic Information System software can be used to perform analyses.

Figure 1

SOUTHERN APPALACHIAN ASSESSMENT AREA

