

# SECTION 1 INTRODUCTION



Photograph by George M. Aronson

The public vision for the future of the Highlands region is that it remain an oasis of open land that can provide a sustained quality of life and environmental integrity...

*Preamble, 1992 New York – New Jersey  
Highlands Regional Study*



## SECTION 1 INTRODUCTION

### BACKGROUND

One in nine Americans lives within a 2-hour drive of the Highlands; and its abundant natural and cultural resources provide quality drinking water, recreation, and economic opportunities for millions in the region and in the New York – New Jersey metropolitan area. The initial study of the New York – New Jersey Highlands (Michaels and others 1992) described the area as one of national significance. The study called for the protection of the Highlands as a greenbelt because the forests and farms were at risk of being changed by a growing population, urban decline, and suburban sprawl. These projected changes were likely to adversely affect drinking water quality, wildlife habitat, recreation opportunities, the agriculture and forest products industries, and historic and cultural sites.

The 1992 study report presented an alternative vision for the Highlands that could be achieved by assisting private landowners in managing their natural resources, helping communities manage growth, and preserving the most critical watersheds, wildlife habitats, and forest areas. The report identified conservation strategies, based on the following goals:

1. Manage future growth;
2. Maintain an adequate supply of quality water;
3. Conserve contiguous forests;
4. Provide appropriate recreational opportunities; and
5. Promote economic prosperity that is compatible with goals 1-4.

Various public and private entities have taken actions to achieve the vision and goals that were formulated for the Highlands. Although no specific Federal designation has been provided for the Highlands, agencies have worked within available authorities and guidelines to provide technical and financial assistance to conserve and protect critical resources. State and local interest in the region has increased, and organizations have undertaken new efforts to protect and sustain the region's forests and farmlands.



## CONSERVATION SUCCESSES SINCE 1992

Since the 1992 study was published, a number of steps have been taken to protect land and resources in the Highlands (for more information, see Appendix J):

1. Emphasizing land protection through acquisition of land or conservation easements—20,000 acres protected in Sterling Forest;
2. Utilizing the USDA Forest Service’s Forest Legacy Program—2,600 acres protected in New Jersey, and 847 acres protected in New York;
3. Increasing State, county, local, and private sector support for open space acquisition—80,000 acres protected in New Jersey, and 100 projects completed in New York;
4. Implementing measures to protect drinking water supplies—18,100 acres protected by New Jersey, and the 1997 New York City Watershed Memorandum of Understanding adopted;
5. Implementing greenway projects—Hudson River Valley Greenway established;
6. Increasing support for watershed-based assessment and planning—20 watershed management areas studied in New Jersey;
7. Improving availability of regional resource data—the Treasures of the Highlands report was released;
8. Increasing awareness of sustainability and sustainable development—Highlands designated as a special resource area in the New Jersey State Plan;
9. Preserving farmland—more than 16,000 acres protected;
10. Recognizing the Highlands’ ecological importance—Highlands designated as a unique physiographic region in the New York State Open Space Plan.

## NEED TO UPDATE THE 1992 STUDY

Despite the successes and accomplishments in resource conservation since publication of the 1992 Highlands study, population in the region has grown significantly, and land-consuming growth patterns have continued. The population of the 108 municipalities in the Highlands region of New York and New Jersey was 1.4 million in 2000. This represents an 11.5 percent increase since 1990. Land-use change in the region is particularly evident in the decreasing number of large working farms, the increased number of large-lot residential subdivisions, and increased deforestation. The completion of Interstate Highway 287 through northern Bergen County, New Jersey, into Rockland County, New York, created a major new transportation corridor that has spurred additional commercial and residential development in the surrounding communities. Other major regional land-use changes are visible along the Interstate Highway 80 and Interstate Highway 78 corridors in New Jersey, in portions of Orange County in New York, and the area north of New York City.



## STUDY AREA

Changes in land use and land cover in the region continue to be significant and have the potential to affect the environmental and economic factors that sustain a high quality of life. In October 2000, Public Law 106-291 authorized and funded an updated study of the New York and New Jersey Highlands under Section 1244(b) of the Food, Agriculture, Conservation, and Trade Act of 1990 (104 Stat. 3547). Congress appropriated \$750,000 for this purpose in Fiscal Year 2001 (Appendix A).

The purpose of this study update is to...

1. Reassess the condition of natural resources in the Highlands region;
2. Analyze land cover change and potential land use;
3. Identify significant areas to be conserved and protected; and
4. Develop strategies to protect the long-term integrity of the region.

This update was guided by the 1992 study in regard to the vision and goals for the Highlands region. The resource assessment and subsequent analyses were expanded, however, taking advantage of the availability of spatial data and improved analytical techniques using Geographic Information System (GIS) technology. GIS allowed for more specific identification of significant land areas in need of protection and provided a more detailed description of future change than were identified in the earlier study.

The Highlands region will continue to face growth pressures if people continue to move out of major population centers into rural and suburban communities. A regional planning approach to coordinate ongoing planning efforts in the Highlands does not formally exist, but recognizing the resources and their geographic scope in the Highlands will assist in finding a proper balance between economic and housing demands, and environmental stewardship. This study update suggests several strategies that might be implemented by Federal, State, and local entities, private organizations, private citizens, and landowners, to protect priority conservation areas while permitting compatible development.

## STUDY AREA

The study team adopted the Highlands study area boundaries from the 1992 study and expanded them from the Hudson River eastward to the New York–Connecticut border using topography and geology as key determinants (Figure 1-1). The landscape of the study area is characterized by a series of open high hills and ridges cut by deep narrow valleys that distinguish it from the surrounding rolling plains. The majority of the land is part of a geomorphic province called the Reading Prong, which stretches from northwestern Connecticut across the lower Hudson River Valley and northern New Jersey into east-central Pennsylvania (Van Diver 1992). Jurisdictional realities also





## STUDY PROCESS

played a part in setting the study area boundaries. In addition to the forested land of the physiographic region, the study area also includes some less developed and agricultural lands. The study area is comprised of 108 municipalities in 12 counties (Appendix B). An entire municipality was included in the study area even if only a portion of it fell within the Highlands physiographic boundary.

The boundaries of the study area could be revised again in the future, as more information is gained about the diverse ecosystems of the Highlands. For example, during implementation of the conservation strategies suggested in this report, the official boundaries could logically be extended to include the contiguous, ecologically similar areas (Figure 1-2) identified through a process known as ecological classification and mapping. Implementation could also be extended to ecologically similar areas in Pennsylvania and Connecticut. More information on ecological mapping is provided in Appendix C.

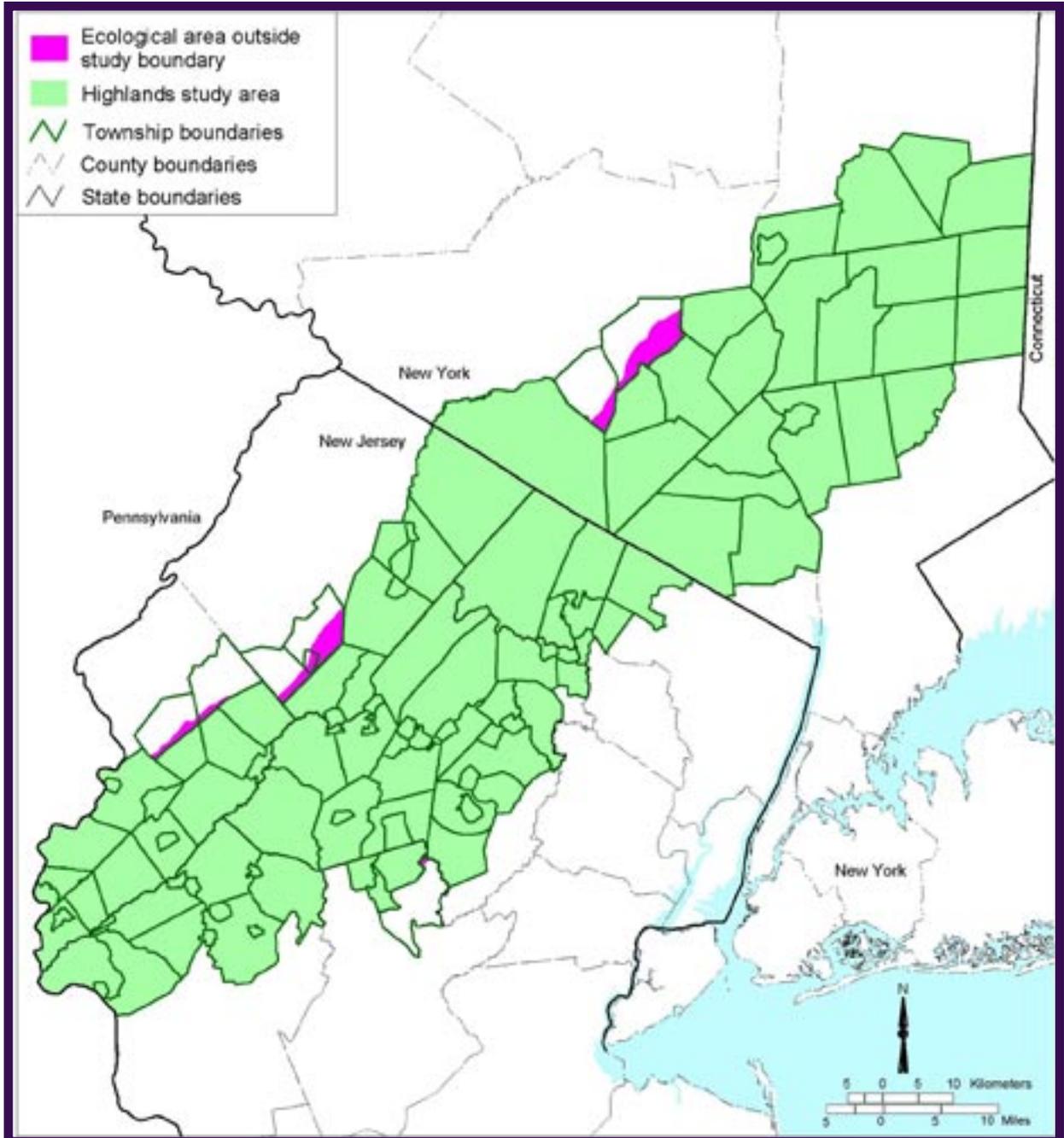
The current study area encompasses approximately 1.5 million acres of Appalachian ridges and valleys and stretches from the Lower Hudson River Valley in New York to the Delaware River in New Jersey. The area has these attributes:

- The total population is 1.4 million people.
- The Highlands adjoin the Nation's largest metropolitan area with a population of more than 20 million people.
- More than 11 million people are affected by Highlands water resources.
- Approximately 14 million people visit the Highlands each year for recreational opportunities in State parks and forest lands in 3 of the 12 counties.
- More than 240 species of birds, mammals, amphibians, and reptiles live, breed, or nest in the Highlands.
- More than 160 historical and cultural sites have been identified.

## STUDY PROCESS

The study was coordinated by the USDA Forest Service, Northeastern Area State and Private Forestry, and was carried out in cooperation with the State Foresters of New York and New Jersey, with Rutgers University, the U.S. Geological Survey, and the Regional Plan Association. As a direct result of the Congressional appropriation, the Forest Service was able to fund various components of the study, including planning assistance, linkage among study participants, and public outreach and involvement. The study plan and budget are given in Appendix D.

A 14-person study team guided the process and provided the technical services and skills needed to conduct the study and prepare the report. Members of the



**Figure 1-2. Areas ecologically similar to the study area.** Adjacent areas that are ecologically similar to the Highlands study area were identified during the study update. Such complete ecological units provide a framework for ecosystem research and management.



## STUDY PROCESS: PRE-DRAFT INPUT

study team frequently communicated and shared information about the status of the resource assessment, mapping, and analyses. A 120-person work group was established including individuals from both New York and New Jersey, who represented a range of resource interests. Work group members ensured a regional perspective, guided the study process, and commented on draft material as potential users of the study results. Study team members are listed in Appendix E, and work group members are listed in Appendix F.

### PRE-DRAFT INPUT

Five work group meetings and four public listening sessions were conducted during 2001-2002, to develop and refine the scope of the resource assessment and to obtain community and public input. Forty to fifty people attended each work group meeting, including Congressional delegations from New York and New Jersey; and representatives from Federal, State, county, and local agencies, nonprofit groups, and the building community. Meeting minutes, including responses to comments received during the meetings, were prepared and distributed to work group members and interested individuals.

The public was encouraged to attend four listening sessions that were held throughout the Highlands Region in cooperation with the Regional Plan Association. Listening sessions were held in Cold Spring and Bear Mountain, New York; and in Oxford and Mahwah, New Jersey, in May 2001. These sessions were designed to provide an overview of the study components and to obtain comments from the public. Session attendees were asked to fill out a Highlands information sheet that contained these questions concerning the resource assessment:

- What are the natural resources important to the Highlands?
- Where are these resources located?
- How will these resources change in the future?
- How can we measure the impacts of these expected changes?
- Where are the natural resource conservation priority areas?

The information sheet was also mailed out to every local government in the Highlands and posted on the project Web site. Approximately 90 responses were received. This information was used to refine the scope of the assessment, specifically to determine which resources to map in the Geographic Information System and what values to place on those resources.

A Web site was established at <http://www.fs.fed.us/na/highlands>, to provide access to information on the Highlands in general, the 1992 study, and this study update. Local newspapers and newsletters from local environmental organizations also provided information to the public throughout the study process.



## STUDY PROCESS: INPUT ON DRAFT REPORT

In March 2002, before the official release of the draft report, two newspaper articles appeared in the New York Times (Metro Section) and The Record (Bergen County, NJ).

### INPUT ON DRAFT REPORT

The draft report was released in early April 2002. Four hundred copies were mailed to key stakeholders in the Highlands region, including Congressional representatives, local elected officials, members of the work group, county public libraries, and interested citizens. The draft was also made available online. The Highlands Web site enabled members of the public to view the information on their own and to submit comments on the draft report to a Highlands e-mail address.

Key report findings, proposed conservation strategies, and the public listening sessions were announced in numerous local and regional newspapers in New York and New Jersey. These included daily and weekly newspapers: Journal News (Westchester County, NY), Times Herald-Record (Orange County, NY), Daily Record (Morris County, NJ), Star-Ledger (Morris County, NJ), The Record (Bergen County, NJ), and the New Jersey Herald (Sussex County, NJ).

Two public involvement sessions were conducted to receive comments on the draft report. Total attendance was approximately 200 people: 110 in Morristown, NJ, on April 22, 2002, and 90 in Suffern, NY, on April 23, 2002. In addition to the 68 verbal comments recorded at the two sessions, the study team received a total of 94 written comments and more than 3,000 electronic responses (Appendix G). Citizens, residents, landowners, farmers, builders, conservationists, environmentalists, water supply providers, and government and elected officials from Federal, State, county, and local levels responded. Several comments came from groups representing diverse interests such as the New Jersey Farm Bureau, the New Jersey Builders Association, various chapters of the Sierra Club and Audubon Society, and the Appalachian Mountain Club. The comments are summarized in Appendix G.

Additional feedback on the draft report was received verbally through phone calls to the Highlands office, in one-on-one discussions with interested citizens, and in separate group presentations given during the 30-day public comment period in response to requests.

The comments received on the draft study report were used to revise each strategy and to develop associated actions designed to protect the long-term integrity and traditional uses of lands within the Highlands region. For example, as a result of the comments, general hydrology information was added to Section 2, under Water.



## ABOUT THIS REPORT

This updated study report builds on the foundation established by the 1992 study. This update focuses on the location and priority of regional natural resources that are most critical, and on strategies that can be implemented by public and private sectors in the stewardship of the Highlands.

Section 2, Resource Assessment and Conservation Values, briefly describes how data on natural resources were collected and provides key findings for five resource types: water, forest, biodiversity, farmland, and recreation. It shows their distribution and provides a range of their conservation values across the region.

In Section 3, Potential Changes and Resources at Risk, regional demographic information is used as a foundation for build-out and econometric analyses that track potential population growth and development in the Highlands. Those results are interpreted to describe the effects that future growth and development might have on land use, water, and forest resources. This information is used to determine which of the high value resource areas identified in Section 2 are currently not protected, and are at the greatest risk for change. Key findings are emphasized.

Section 4, Resource Summary and Conservation Strategies, briefly reviews the Highlands resources at risk that were determined in Sections 2 and 3. It then describes challenges and opportunities associated with land management and stewardship in the Highlands. In the context of this land management framework, Section 4 offers eight alternative conservation strategies to protect resources in the Highlands.

Section 5, A Fragile Future, provides concluding remarks.

This study report synthesizes and provides findings and some interpretation of the analyses conducted, but does not provide an exhaustive compilation of all possible scenarios for change. Any definitions and assumptions used in the resource assessment and analysis portions of the study are documented in this report. Detailed descriptions of the data sources and methodology, including actual data tables used for the assessment, are available as part of the New York – New Jersey Highlands Technical Report. A list of topics that will be covered in the technical report is provided in Appendix H.

The technical report will be available in hard copy, compact disc (CD), and on the Highlands Web site. The hard copy technical report will primarily contain data, methodology, and definitions for technical terms used in the report. The CD and Web site will contain detailed information such as datasets and metadata and supplemental maps, in addition to what is available in the hard copy report. The data presented in this report are intended for regional analyses and discussion;



however, local-level data will be accessible through an interactive mapping Web site (Arc IMS) being developed by Rutgers University's Center for Remote Sensing and Spatial Analysis as part of the technical report.

## SECTION 1 REFERENCES

- Michaels, Joseph A.; Neville, L. Robert; Edelman, David; Sullivan, Tim; DiCola, Leslie A. [1992.] New York – New Jersey Highlands Regional Study. [Radnor, PA: USDA Forest Service, Northeastern Area State and Private Forestry]; 130 p.
- Van Diver, Bradford B. 1992. Roadside geology of New York. Missoula, MT: Mountain Press Publishing Company; 396 p.