

**Final Environmental Impact Statement
for the
Revised Land and Resource
Management Plan**

**Caribbean National Forest
Luquillo Experimental Forest
Puerto Rico**



United States
Department of
Agriculture

Forest Service
Southern
Region
1997

Caribbean National Forest Luquillo Experimental Forest Environmental Impact Statement

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Chapter I

Purpose and Need

Introduction

This final environmental impact statement (EIS) explores alternatives for revising The Land and Resource Management Plan for the Caribbean National Forest/Luquillo Experimental Forest (Forest Plan). Chapter I establishes the need and purpose for this EIS, and identifies the action proposed by the Forest Service.

Need

The underlying need for a revised Forest Plan is to have a land resource management plan that is:

- Responsive to changing demands and concerns of the public.
- Based on information gained through monitoring and management experience.
- Responsive to changed conditions on the land.

Purpose

The purpose of the Revised Forest Plan is to provide direction for the management of the land and resources of the Caribbean National Forest/Luquillo Experimental Forest. This direction will provide for multiple use and sustainable yields of goods and services in a way that maximizes net public benefits in an environmentally sound manner. This management will preserve and enhance the vitality, diversity, productivity, and sustainability of the ecosystems of the Forest. The management direction shall be based on the best scientific data and methodologies, and be consistent with current resource information.

Need for Change

The Forest Plan for the Caribbean National Forest/Luquillo Experimental Forest (the Forest) was approved by Regional Forester John E. Alcock in February 1986. The Plan was subsequently appealed by 12 Puerto Rican and North American mainland environmental and outdoor recreation organizations.

Regional Forester Alcock directed the Forest to attempt to resolve the appeals through amendment of the Plan. From 1986 through 1991 two draft supplements to the plan were released for public comment.

In 1991 an analysis of the management situation (AMS) on the Forest indicated it was more appropriate to address the changing situation through a revision, rather than amendment. Forest Service Chief F. Dale Robertson authorized a plan revision for the Forest on September 6, 1991. The reasons to revise rather than amend are:

- The AMS indicated the need to consider substantial change in existing Plan direction.
- The regulations governing National Forest planning state that "A forest plan shall ordinarily be revised on a 10-year cycle or at least every 15 years." (36 CFR 219.10(g)) The Forest will need to do a required plan revision beginning about 1996, even if a significant amendment were completed now. Revising now is more efficient, and better uses public comment received since 1986.

The AMS identified the following changed conditions on the Forest, significant new issues, and outstanding appeal issues, that indicated a need to consider changing management direction:

- Public comment recommending reducing timber harvest and eliminating commercial timber sales on the Forest.
- Public comment recommending more area for wilderness designation.
- The opportunity to include recommendations for wild and scenic river designations.

- Increased concern for the preservation of remaining primary forest.
- Public comment recommending various amounts and locations of recreation development.
- Public comment recommending assured protection of Puerto Rican parrot habitat.
- The need to improve protection of aquatic ecosystems in light of increasing demand for consumptive use of water.
- Public comment recommending less road and trail construction.
- The effects of Hurricane Hugo on the Forest.

**Decisions to
Be Made**

The Regional Forester makes decisions on the following policies and publishes them in a Record of Decision document at the conclusion of this revision effort.

- Determination of the multiple-use goals, objectives, and desired future conditions for the Forest.
- Allocation of the Forest to management areas, and determination of management area prescriptions.
- Determination of standards and guidelines for management of the Forest.
- Identification of land that is suitable for timber production, and amount (if any) of commercial timber sale volume.
- Determination of area(s) to be recommended for wilderness designation.
- Determination of river segments to be recommended for Wild, Scenic, or Recreation designation.
- Determination of monitoring and evaluation requirements.

Public Involvement

The AMS analyzed public comments expressed in letters, meetings and appeals, and the concerns of other Forest Service professionals. This analysis identified 9 significant issues to be considered in assessing the need for change in existing forest plan direction. Appendix A gives the details of the procedure used to consolidate public and agency comments into issues.

The Proposed Revised Plan and DEIS were released for public review and comment March 17, 1995. The comment period extended through July 17, 1995. The Draft documents were mailed to over 500 individuals, organizations and agencies. During the comment period, Forest staff held 5 community meetings, met with representatives of environmental groups in Puerto Rico and Washington, D.C., made presentations at local universities, appeared on radio talk shows, and held numerous briefings with federal, Commonwealth and municipal governments and agencies, to explain the Draft and solicit public comment.

In response to the Forest's request for comments on the Draft versions of the Revised Plan and EIS, 54 letters were received. These letters and Forest staff responses are included in EIS Appendix H.

Comments from the public, concerns of Forest staff and direction from the Regional Forester are contained in the 9 issues that follow. Further changes in the EIS and Revised Plan resulted from public comments on the DEIS and Proposed Revised Plan.

Demonstrating Timber Production While Assuring Compatibility with a Diversity of Other Forest Values

The Caribbean National Forest has a unique role as an experimental and demonstration forest. For over 50 years it has been the site of research on all aspects of tropical forestry. Expertise gained in reforestation and application of silviculture on cutover and cleared land has become more important in light of current world-wide concern over the loss of tropical forests.

The 1986 Plan proposed to establish a small scale sustainable commercial timber harvest program on lands reforested since the 1920's. This was to serve as a demonstration of the application of the techniques developed over 50 years of research. The target audience was to have been tropical forest managers world-wide, and interested public generally.

The proposal for a commercial timber harvest program became highly controversial and the Plan was appealed. In response to the appeal and public concern, the Forest agreed to suspend the commercial harvest program.

Alternatives which include demonstrations of sustainable timber production are considered in this EIS. Also considered is an alternative that would not demonstrate timber production. Commercial timber sales are included only in Alternative A (current Plan direction alternative).

The new alternatives (B, C, C-mod and D) developed in this EIS emphasize other facets of tropical forest management demonstration in addition to sustainable timber production. These include general concepts, such as allocation of land to different emphases (e.g. research, developed site recreation, and wilderness) under a management plan, and specific techniques, such as endangered species habitat improvements and population monitoring.

Many commentators have questioned the timber production demonstration program, in essence asking how demonstration would differ from a commercial timber sale program. Commentors also focused on the need to reassess the demonstration program in light of the damage done to the Forest by Hurricane Hugo. Some others stated that eliminating the commercial harvest program was an over-reaction to a misinformed public, and that the Forest should place a greater emphasis on the demonstration of timber production for widespread benefits elsewhere in the tropics.

Issue 2

Recommendation of Areas for Congressional Designation of Wilderness

Recommendation for wilderness designation was considered a facet of the recreation issue in the 1986 Forest Plan. In response to public comment, this issue was considered separately in the Draft Supplement to the FEIS issued in 1990. It is also considered a separate issue in the plan revision analysis.

Designation of wilderness on the Forest would be particularly significant because it would be the only tropical forest in the National Forest Wilderness System, and would contribute toward the national goal of a more diverse wilderness preservation system.

The 1986 Plan proposed that 5,254 acres of the 9,561 acre El Toro Roadless Area be allocated for further wilderness study. Many comments from individuals and environmental groups have been received advocating the allocation of more area to wilderness. Several commentors questioned why none of the eastern part of the Forest had been included in the area proposed for wilderness study in the 1986 Plan. Commentors also suggested recommending areas for wilderness designation rather than further study. This suggestion is adopted in Alternatives B, C, C-mod and D.

Some concern has also been expressed that wilderness designation would invite increased recreation use into areas of the Forest currently receiving very little visitation, and that this increased use could adversely affect primary forests.

Issue 3

Recommendation of Areas for Congressional Designation of Wild, Scenic or Recreation Rivers

Recommendation for Wild and Scenic River designation was considered a facet of the wilderness issue in the DEIS and Proposed Revised Forest Plan. For clarity, Wild and Scenic Rivers have been treated as a separate issue in this Final EIS.

Designation of Wild and Scenic Rivers on the Forest would be significant because these would be the only tropical rivers in the National Wild and Scenic River System.

An eligibility study of the Forest's rivers was completed in 1989, which identified segments on 6 rivers as eligible for Wild, Scenic or Recreation designation. Comments on the Draft from some environmental groups recommended designating all eligible segments. Comments from the water and electric utility companies in Puerto Rico expressed concern over possible conflicts between Wild/Scenic River designation and use of these rivers for water consumption and production of hydroelectric power.

Protection of the Primary Forests

Intensive agriculture practiced by a growing population within the limited area of Puerto Rico was, until early in this century, largely at the expense of the standing forests. Up to that time forests were looked upon as an obstacle to the production of subsistence crops. With crops such as bananas and coffee, mountainous slopes were no impediment to production. The result was that until relatively recently, deforestation was considered synonymous with development, and was actually fostered by government incentives. By the late 1930's less than 1% of the forests of Puerto Rico remained in their original (primary) condition. The largest block of such lands was in the Caribbean National Forest, an area of approximately 13,700 acres.

The primary forests of the National Forest are the biggest and best remaining stands of their types in Puerto Rico (and the world). They also represent a heritage with special cultural values. They were set aside in 1876 by the King of Spain as one of the first forest reserves in the hemisphere. In 1898 most of the 12,400 acres transferred to the U.S. government was still in primary condition. Forest Service management since then has continued this tradition of leaving the primary forests largely as is. Primary forest on additional lands acquired by the Forest has also been preserved.

Public comment has revealed broad support for the protection of the Forest's unique ecosystems. Commentors were particularly concerned about the primary, "virgin" or "pristine" parts of the Forest. Many commentors expressed concern that the primary forest might be adversely impacted by the commercial timber harvest program included in the 1986 Forest Plan, by timber production demonstrations, by recreation use and development, or by road construction.

Another facet of this concern has been the question of which Management Area(s) designations--wilderness, research natural area, or primary forest-- and what standards and guidelines, would best protect primary forest.

Providing Recreation Opportunities While Protecting the Ecological Values of the Forest

The Caribbean National Forest is one of the most popular natural recreational resources in Puerto Rico. The recreation opportunities provided by the Forest's picnic areas, scenic vistas, trails and streams are scarce valuable resources, just as are the Forest's biological wonders.

The population of Puerto Rico increased by 9% from 1980 to 1990. Tourist visitation of Puerto Rico increased by 71% from 1982 to 1990. The number of people visiting the Forest is estimated to have increased from 290,000 in 1975 to 635,000 in 1988.

While the Forest has the potential to provide a wide spectrum of quality recreation opportunities to a large number of people, the range of opportunities currently available is limited. The Forest has a small amount of recreation site development in comparison to the demand for such sites and the amount of visitation. This results in overcrowding of favorite sites, traffic congestion and parking problems, and potential conflicts between users.

The trail system also has a limited variety of lengths and difficulties. Many trails have fallen into disuse through lack of maintenance. Secure trailhead parking areas exist only at developed sites; most trailheads have inadequate and insecure parking. This has limited recreation use of the Forest's trails and back-country. Nonetheless, trail hiking is a popular activity. The potential exists to offer more.

A number of commentators felt that additional trail construction would increase public access to parts of the Forest which currently receive minimal human disturbance. Concern was expressed that this increased human disturbance could adversely affect wildlife and primary forests.

Public comment has revealed the desire for more interpretation and environmental education, and for more developed recreation facilities for picnicking and water play. Concern has also been expressed that the development and increased use of recreation sites and trails may adversely impact the unique natural qualities of the Forest.

Issue 6

Protection of Wildlife While Conducting Other Forest Management Activities

The 1986 Forest Plan identified a wildlife issue, and public comment has confirmed that the protection of the Forest's diverse terrestrial and aquatic wildlife remains a concern of many individuals and organizations. Comments received indicate that threatened, endangered and sensitive (TES) species, especially the endangered Puerto Rican Parrot, are particular concerns. How timber production demonstration, road and trail construction or reconstruction, recreation use and development, and manipulative research might affect these species, was the focus of most comments on the TES concern. TES plant species have come to be included in this issue also. Some questions have also been raised about how which management indicator species will be used to track changes in the Forest.

Issue 7

Providing and Protecting the Forest's Water Quantity and Quality

The 1986 Forest Plan identified a water issue. Public comment has confirmed that any activity that could affect the quantity or quality of water flowing from the Forest remains a concern of many individuals and the municipalities surrounding the Forest, that get some or all of their water from Forest watersheds. It is expected that this demand will increase as population and water consumption increases in communities around the Forest.

The effects of water consumption on the Forest's aquatic life is another facet of this issue. Consumptive use has the potential to affect aquatic life by reducing stream flow, and by impeding migration of aquatic organisms.

The Revised Plan presents an opportunity to address the need to balance consumptive use and aquatic ecosystem protection through the establishment of instream flows.

Providing and Managing Appropriate Forest Access

Most people commenting on the Forest Plan, who addressed the access issue, have favored limiting new road construction. Several comments were received specifically opposing construction of the Sonadora Road, which would have connected PR 191 and PR 186 on the northwest side of the Forest. Many comments have been received opposing the re-opening of PR 191 on the south side of the Forest, because of concerns for disturbance of wildlife and soil erosion and resulting stream sedimentation. A number of commentors, particularly from the community of Naguabo, favor the re-opening of PR 191. These commentors believe through traffic on PR 191 would improve economic opportunity in their community, and make access to recreation facilities on the north side of the Forest easier for residents of south side communities.

The site-specific effects of the construction of specific roads will be, or have been, documented in other environmental assessments and environmental impact statements. This Environmental Impact Statement for the Revised Forest Plan[®] discloses estimates of total miles of road, and approximate locations, by alternative, and the overall effects of that construction.

PR 191 crosses the Forest from north to south. It is the main route into the Forest and has the heaviest traffic of any road in the system. It was constructed during the 1940's as a through road from Mameyes on the north to Naguabo on the south. In the 1970's the road was closed by a landslide triggered by heavy rains associated with tropical storms. The road remains closed between gates at Km 13.3 and Km 21.0. The closure of the road has made management of the south side of the Forest somewhat more difficult as Forest Service personnel must travel longer routes. Access to the Forest's south side will be improved once PR 53 from Fajardo to Humacao, currently under construction, is completed.

The Puerto Rico Department of Transportation and the U.S. Department of Transportation Federal Highway Administration have proposed projects to re-open the Highway 191 since its closure in 1970. During 1991-92 a re-opening project was the subject of a suit by local and U.S. mainland environmental groups. The U.S. Federal District Court directed the USDoT Federal Highway Administration and/or USDA Forest Service to develop an environmental impact statement before proceeding with the re-opening project, or any related action. Re-opening PR 191 is not proposed in any of the alternatives considered in this EIS. All alternatives in this EIS estimate effects based on Highway 191 in its current condition: closed from Km 13.3 to Km 21.0.

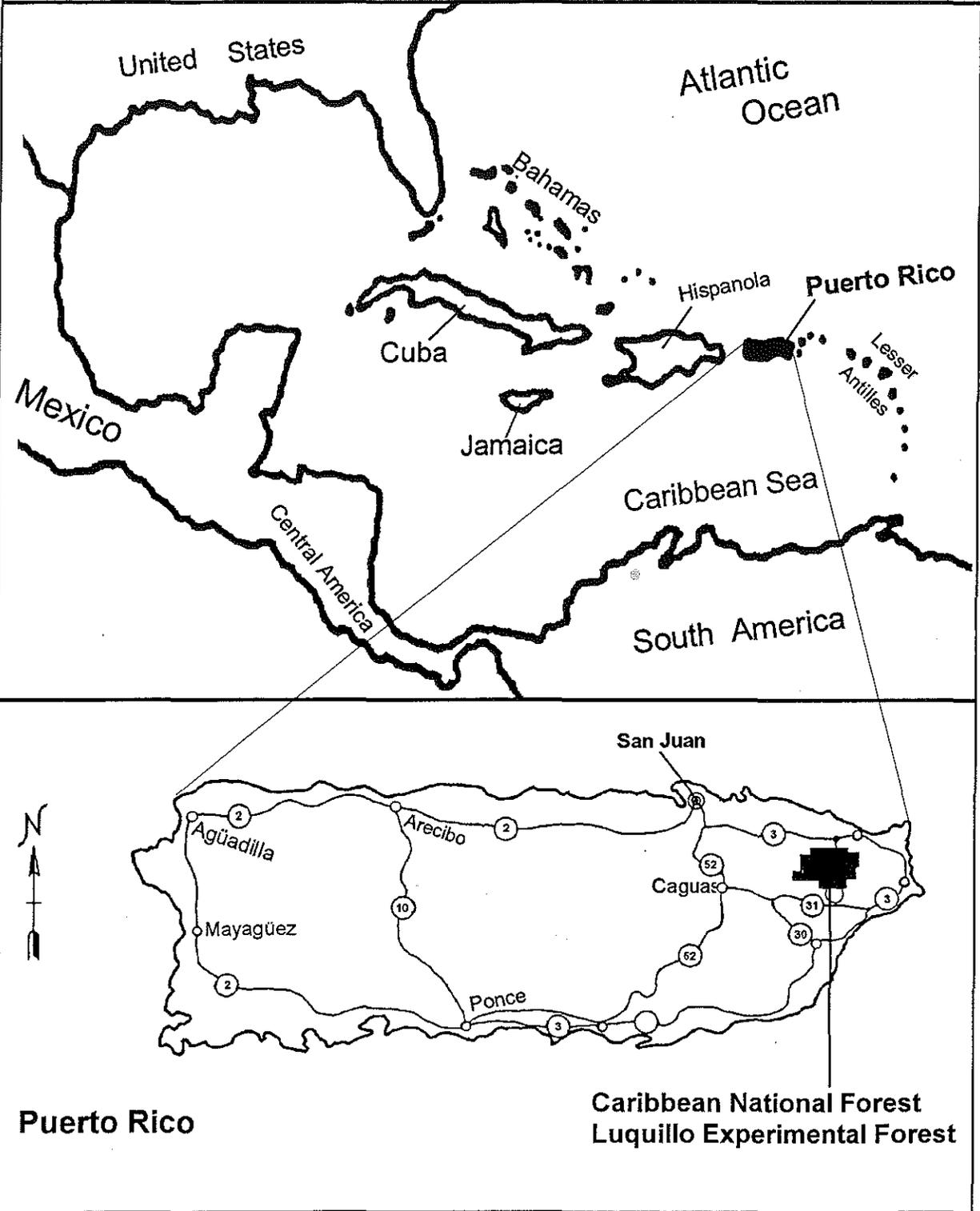
Issue 9

Meeting the Needs of Tropical Forestry Research While Protecting the Forest's Environmental Values

Research conducted on the Caribbean National Forest (which is also the Luquillo Experimental Forest) has made a significant contribution to the management and conservation of tropical forests worldwide. With the current global concern for tropical deforestation, the role that the Forest can play in improving the understanding of tropical forests biology and management is more important than ever.

Public comment has demonstrated strong support in the scientific community and the general public for a continued research program on the Forest. Some concern has been expressed that treatment vs. control research (as opposed to strictly observational research) could adversely affect natural values, such as primary forest and wildlife. The scientific community has also expressed concern that some management activities, such as recreation development, could adversely affect ongoing and potential future research.

Figure I-1. Vicinity Map.



**The Revision
Process:
What to Expect**

Draft versions of the Revised Plan and the EIS were distributed in March, 1995. The present documents—the Revised Plan and the EIS—are accompanied by a Record of Decision document. All the Revised Plan documents are products of a Plan revision effort that began in September, 1991. Incorporated in the final documents are the results of the March through July 1995 public comment period. During that 120-day comment period, the public was invited to comment on the draft documents. Fifty-five letters were received by the Forest. Copies of the letters and Forest staff responses are included in EIS Appendix H. These comments, as well as agency concerns, resulted in changes in the final documents, including development of a new alternative.

The responsibility for choosing the alternative that becomes the Revised Plan lies with the Regional Forester. In choosing the alternative, it is the Regional Forester's responsibility to consider the needs and desires of the people of Puerto Rico and the U.S., national goals set by Congress, and the goals of the Southern Region.

Alternative C-mod is the Forest Service preferred alternative. A preferred alternative is defined as the alternative that maximizes net public benefits and best accomplishes the mission of the Forest Service in managing the Forest. The mission, by law, is to accommodate the variety of uses of the Forest that the public demands, to accommodate those uses in a manner that ensures the Forest is able to sustain the uses for future generations, and to accomplish it all in an economically efficient and environmentally sound manner.

Following implementation, the Revised Plan will be monitored and evaluated for effectiveness. At least every five years, the Plan will be reviewed to determine whether or not conditions have changed enough to warrant another revision. Regulations require a revision in 10 to 15 years from implementation.

Organization of the Documents

As the preferred alternative, Alternative C-mod is developed into the Revised Plan. The Record of Decision that accompanies this document and the Revised Plan gives supporting rationale for the selection of Alternative C-mod.

Following this chapter and its brief presentation of issues, Chapter II presents alternative ways of managing the Forest. Current plan direction and four alternatives to current direction are considered in Chapters II and III. The alternatives were developed in a similar manner as the issues--both are products of interaction between the Forest Service and the public.

A summarized comparison of alternatives at the end of Chapter II offers the reader an opportunity to weigh the effects of each alternative, if implemented.

Following the alternatives in Chapter II, Chapter III presents before-and-after views of the Forest environment. The current environment is discussed first, then the environment as it would be if the alternatives were implemented.

The companion document to this EIS is the Revised Forest Plan. It presents a detailed disclosure of the alternative that the Forest Service is selecting for implementation. Copies of the EIS and the Final Revised Forest Plan have been mailed to interested individuals and organizations and to affected agencies .

Planning Records are Available

Supporting information, maps and documents used in the revision process are contained in the planning record. This record may be reviewed at the Forest Supervisor's Office near Palmer, Puerto Rico. For more information on reviewing the record write to:

Forest Supervisor
Caribbean National Forest
PO Box 490
Palmer, PR 00721