
February 1998

FOREST SERVICE

Barriers to Generating Revenue or Reducing Costs





United States
General Accounting Office
Washington, D.C. 20548

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February 13, 1998

The Honorable John R. Kasich
Chairman, Committee on the Budget
House of Representatives

Dear Mr. Chairman:

In response to your request, this report discusses (1) the lessons that can be learned from efforts by nonfederal land managers to generate revenue and/or become financially self-sufficient from the sale or use of natural resources on their lands and (2) legal and other barriers that may preclude the Forest Service from implementing similar efforts on its lands. The report contains a matter for congressional consideration and a recommendation to the Secretary of Agriculture that would improve the Forest Service's accountability for obtaining fair market value for goods, recovering costs for services, and containing expenses.

As requested, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days after the date of this letter. At that time, we will send copies to the appropriate congressional committees, the Secretary of Agriculture, and the Chief of the Forest Service. We will also make copies available to others upon request.

Please call me at (202) 512-3841 if you or your staff have any questions about this report. Major contributors to this report are listed in appendix X.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Victor S. Rezendes'. The signature is fluid and cursive, with the first name 'Victor' being the most prominent.

Victor S. Rezendes
Director, Energy, Resources,
and Science Issues

Executive Summary

Purpose

The Department of Agriculture's Forest Service manages about 192 million acres of land—nearly 9 percent of the nation's total surface area and about 30 percent of all federal lands. In fiscal year 1996, revenue generated from the sale or use of resources and lands within the National Forest System totaled about \$0.9 billion. Over \$2.0 billion in appropriations and over \$0.4 billion in trust funds were available to manage the system's 155 national forests.

The House Committee on the Budget has an ongoing interest in the Forest Service's management of the national forests, including the agency's efforts to be more cost-effective and businesslike in its operations. To assist the Committee in its deliberations and oversight, the Chairman asked GAO to identify (1) the lessons that can be learned from efforts by nonfederal land managers to generate revenue and/or become financially self-sufficient from the sale or use of natural resources on their lands and (2) legal and other barriers that may preclude the Forest Service from implementing similar efforts on its lands.

As agreed with the Chairman's office, GAO limited its review to efforts by seven judgmentally selected nonfederal land managers located throughout the United States: (1) the about 2.9 million acres of trust lands managed by Washington State's Department of Natural Resources; (2) the 1.6 million-acre Fort Apache Indian Reservation in Arizona, home to the White Mountain Apache tribe; (3) the 125 parks, sites, and natural areas, encompassing over 669,000 acres, managed by the Texas Parks and Wildlife Department; (4) the 201,000-acre Deseret Land and Livestock ranch located in Utah and owned and managed by the Church of Jesus Christ of Latter-day Saints; (5) The Nature Conservancy's 55,000-acre Niobrara Valley Preserve in Nebraska; (6) the National Audubon Society's 27,000-acre Paul J. Rainey Wildlife Sanctuary in Louisiana; and (7) International Paper's 16,000-acre Southlands Experiment Forest in Georgia. These land managers were selected primarily because they appeared to be (1) generating revenue or making a profit from one or more of the resources that the Forest Service is legislatively mandated to plan for or to consider in its planning and (2) maintaining the long-term health of the land and resources by emphasizing environmental management and protection. These land managers' revenue-generating programs and activities are summarized in appendix I and are discussed in more detail in appendixes II through VIII.

Results in Brief

The nonfederal land managers whose efforts GAO reviewed—while not always attaining financial self-sufficiency—are using a variety of sometimes innovative approaches and techniques to generate revenue or reduce costs from the sale or use of natural resources on their lands. None of the approaches or techniques are legislatively mandated or otherwise required. Rather, the land managers have (1) usually tailored their efforts to meet either a clear mission to make a profit over time or an incentive to generate revenue for other mission-related goals and objectives and (2) often been delegated the discretion and flexibility to explore innovative entrepreneurial ideas or conduct research to increase profits and to choose where and when to apply the results while being held accountable for their expenditures and performance.

Generating revenue and reducing costs are not mission priorities for the Forest Service, and, in keeping with its existing legislative framework, the agency is moving away from, rather than toward, financial self-sufficiency. Increasingly, legislative and administrative decisions—such as setting aside an increasing percentage of Forest Service lands for conservation as wilderness, wild and scenic rivers, and national monuments—and judicial interpretations of statutory requirements have required the Forest Service to shift its emphasis from uses that generate revenue to those that do not. Furthermore, (1) the agency is required to continue providing certain goods and services—such as recreational sites, hardrock minerals, and livestock grazing—at less than their fair market value and (2) certain congressional expectations and legislative provisions—including those that require sharing revenue before deducting the costs of providing the goods or services—serve as disincentives to either increasing revenue or decreasing costs. Moreover, when the Congress has provided the Forest Service with the authority to obtain fair market value for goods or recover costs for services, the agency often has not done so, nor has it always acted to contain costs, even when requested to do so by the Congress.

Principal Findings

Clear Revenue-Generating Priorities, Flexibility, and Accountability Underlie Nonfederal Managers' Efforts

The nonfederal land managers whose efforts GAO reviewed generated revenue from the sale or use of natural resources on their lands by, among other things, (1) emphasizing the production of goods and services on some lands or within certain programs or functions while setting aside other lands, programs, and functions for non-revenue-generating activities,

such as conservation and resource protection; (2) actively managing game species for substantial profit; (3) charging for activities, such as outdoor recreation, that were once free and/or managing concessions previously operated by private companies; (4) using new methods to manage timber sales and livestock grazing; and (5) obtaining and actively pursuing water rights critical to generating revenue from other uses. These land managers attempted to save money by, among other things, (1) entering into agreements with federal agencies to reduce the costs of regulatory compliance and to provide more certainty and predictability for their revenue-generating timber and other programs and (2) reducing the number of salaried employees by increasing the use of volunteers and prison inmates.

The nonfederal land managers are not legislatively mandated or otherwise required to employ a particular approach or technique to increase revenue or decrease costs. Rather, their approaches and techniques usually resulted from their having either a clear mission to make a profit over time or an incentive to generate revenue for other mission-related goals and objectives. For instance, for the two businesses in GAO's review—International Paper and the Deseret Land and Livestock ranch—as well as for the trust lands and programs managed by Washington State's Department of Natural Resources, the managers' primary goal is to make a profit. Additionally, although The Nature Conservancy's Niobrara Valley Preserve is not profit oriented, its manager has a financial incentive to generate revenue from livestock grazing to support the nonprofit organization's biological diversity goal.

Virtually all of the nonfederal land managers GAO reviewed have the discretion and flexibility to (1) explore innovative entrepreneurial ideas or conduct research to increase profits and (2) choose where and when to apply the results. Consequently, they have tailored their approaches and techniques for generating revenue or reducing costs to their particular geographical areas or conditions. However, this freedom to make choices is often accompanied by oversight by a parent organization, the beneficiaries of the revenue generated, or others to ensure accountability for expenditures and results.

For example, Washington State's Department of Natural Resources has the discretion and flexibility to optimize short- and long-term income within acceptable levels of risk by, among other things, (1) transferring, selling, exchanging, and purchasing lands; (2) testing new approaches and techniques to harvest and market timber; and (3) shifting to the highest

and best land uses in selected geographic areas. In exchange for this freedom to make choices, the department is held accountable for its expenditures and results by the beneficiaries of the revenue, including state school districts, colleges, and universities, as well as other public agencies and charitable institutions within the state.

The Forest Service Lacks Clear Revenue-Generating Priorities, Flexibility, and Accountability

Language in federal statutes implies that maximizing revenue should not be the overriding criterion in managing national forests. Moreover, increasingly, legislative and administrative decisions and judicial interpretations have required the Forest Service to give priority to non-revenue-generating uses over uses that can and have produced revenue. For example, both the Congress and the administration have increasingly set aside Forest Service lands for conservation—as wilderness, wild and scenic rivers, national monuments, and recreational areas. Only limited revenue-generating uses, such as timber sales and oil and gas leasing, are allowed in some of these areas.

When the Forest Service can generate revenue, it is sometimes required to provide goods or services at less than their fair market value. For example, legislative decisions not to charge fees for the use of most recreational sites and areas managed directly by the agency, as well as for noncommercial recreational activities such as hunting and fishing by individuals on Forest Service lands, reflect long-standing philosophies of free access to public lands and/or deferral to state laws. Other legislative requirements that limit the generation of revenue from activities such as hardrock mining and livestock grazing reflect the desire to promote the economic stability of certain historic commodity uses.

Congressional expectations and revenue-sharing provisions may also serve as disincentives to either increasing revenue or decreasing costs. For example, establishing annual output targets for the volume of timber to be offered for sale and allowing the agency to retain a portion of the revenue it generates from timber sales without deducting its costs may encourage the Forest Service to not always recover its costs to prepare and administer the sales.

When the Congress has given the Forest Service the authority to obtain fair market value for goods or recover costs for services, the agency often has not done so. For example, prior GAO work has shown that the agency has (1) not obtained fair market fees for commercial activities on the national forests—including resort lodges, marinas, and guide services—or

for special noncommercial uses—such as private recreational cabins and special group events—or recovered the costs incurred in reviewing and processing applications for special-use permits; (2) not charged fair market value for rights-of-way for oil and gas pipelines, power lines, and communications lines on its lands; and (3) not used sealed bids for timber sales, relying instead on oral bids, which generate lower revenue.

The Forest Service has also not always acted to contain costs, even when the Congress has asked it to do so. In fiscal year 1991, for example, the Congress asked the agency to develop a multiyear program to reduce the escalating costs of its timber program by not less than 5 percent per year. However, the Forest Service has not developed such a program, and the costs of preparing and administering timber sales remain high even though internal and external reviews of the agency's processes and procedures have identified opportunities to significantly improve operational efficiency at virtually every organizational level.

Key to improving the Forest Service's performance in obtaining fair market value for goods, recovering costs for services, and operating more efficiently is holding the agency accountable for its performance. However, the Forest Service has not been held adequately accountable for increasing revenue or decreasing costs. Moreover, the agency's September 30, 1997, strategic plan, developed to comply with the requirements of the Government Performance and Results Act of 1993 (Results Act), contains no goals or measures for holding the Forest Service accountable for its performance in generating revenue or reducing costs.

Matter for Congressional Consideration

If the Congress believes that increasing revenue or decreasing costs from the sale or use of natural resources should be mission priorities for the Forest Service, it will need to work with the agency to identify legislative and other changes that are needed to clarify or modify the Congress's intent and expectations for revenue generation relative to ecological, social, and other values and concerns.

Recommendation to the Secretary of Agriculture

Because the Forest Service has not exercised its authority to obtain fair market value for certain goods and recover costs for certain services and has not always acted to contain costs, even when requested to do so by the Congress, GAO recommends that the Secretary of Agriculture direct the Chief of the Forest Service to revise the strategic plan that the agency developed to comply with the requirements of the Results Act to include

goals and performance measures for obtaining fair market value for goods, recovering costs for services, and containing expenses as the necessary first step in holding the Forest Service accountable for its performance.

Agency Comments

GAO provided copies of a draft of this report to the Forest Service for its review and comment. The agency (1) agreed with the report's conclusions and recommendations, (2) stated that the report fairly presents relevant factors that must be understood when comparing land managers or land management within different time periods, and (3) noted that it has made some progress in increasing revenue and improving financial accountability. The agency's comments appear in appendix IX.

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Abbreviations

BIA	Bureau of Indian Affairs
DLL	Deseret Land and Livestock
DNR	Washington State Department of Natural Resources
EBS	Entrepreneurial Budgeting System
EIS	environmental impact statement
FWS	Fish and Wildlife Service
GAO	General Accounting Office
NEPA	National Environmental Policy Act of 1969
NFMA	National Forest Management Act of 1976
OMB	Office of Management and Budget
RPA	Forest and Rangeland Renewable Resources Planning Act of 1974

Introduction

The Department of Agriculture's Forest Service manages about 192 million acres of land—nearly 9 percent of the nation's total surface area (about the size of California, Oregon, and Washington State combined) and about 30 percent of all federal lands. In fiscal year 1996, revenue generated from the sale or use of resources and lands within the National Forest System totaled about \$0.9 billion. Over \$2.0 billion in appropriations¹ and over \$0.4 billion in trust funds were available to manage the system's 155 national forests.

National Forests Are Managed Under the Principles of Multiple Use and Sustained Yield

The Forest Service's motto is "caring for the land and serving people." Laws guiding the management of the national forests require the Forest Service to manage its lands under the principles of multiple use and sustained yield to meet the diverse needs of the American people.

The Forest Service is required to plan for six renewable surface uses—outdoor recreation, rangeland, timber, watersheds and water flows, wilderness, and wildlife and fish. In addition, the agency's guidance and regulations require the Forest Service to consider the production of nonrenewable subsurface resources—such as oil, gas, and hardrock minerals²—in its planning.

Under the Organic Administration Act of 1897, the national forests are to be established to improve and protect the forests within their boundaries or to secure favorable water flow conditions and provide a continuous supply of timber to citizens. The Multiple-Use Sustained-Yield Act of 1960 added the uses of outdoor recreation, range, watershed, and fish and wildlife. The act also requires the agency to manage its lands to provide high levels of all of these uses to current users while sustaining undiminished the lands' ability to produce these uses for future generations (the sustained-yield principle). Under the National Forest Management Act of 1976 (NFMA) and its implementing regulations, the Forest Service is to (1) recognize wilderness as a use of the forests and (2) maintain the diversity of plant and animal communities (biological diversity).

¹Excludes appropriations for (1) forest and rangeland research, (2) state and private forestry, (3) international forestry, and (4) Southeast Alaska disaster assistance.

²Hardrock minerals include gold, silver, lead, iron, and copper.

The Forest Service Must Comply With Environmental Laws and Regulations

The Forest Service must comply with the requirements of the National Environmental Policy Act of 1969 (NEPA). NEPA and its implementing regulations specify procedures for integrating environmental considerations through environmental analyses and for incorporating public input into the agency's decision-making process. NEPA requires that a federal agency prepare a detailed environmental impact statement (EIS) for every major federal action that may significantly affect the quality of the human environment. The EIS is designed to ensure that important effects on the environment will not be overlooked or understated before the government makes a commitment to a proposed action.

In planning and reaching decisions, the Forest Service must also comply with the requirements of other environmental statutes, including the Endangered Species Act, the Clean Water Act, the Clean Air Act, the Wilderness Act, and the Migratory Bird Treaty Act, as well as other laws, such as the National Historic Preservation Act. The Forest Service is subject to more than 200 laws affecting its activities and programs.

The Forest Service Is to Consider Economics in Its Planning

Many laws governing national forest management and planning, dating back to the Organic Administration Act of 1897, have implied or stated that economics should be included in managing the national forests.³ The Forest and Rangeland Renewable Resources Planning Act of 1974 (known as RPA) requires the Forest Service to (1) periodically analyze trends in supply and demand and to report on investment opportunities in comprehensive assessments of the nation's renewable resources conducted every 10 years; (2) discuss investment priorities and provide data for examining cost accountability in programs prepared every 5 years to respond to the trends and opportunities identified in the assessments; (3) use an interdisciplinary approach, including economics, in land and resource management planning; and (4) consider economics and financing in building the transportation system for the National Forest System.

NFMA added numerous subsections to RPA. As noted by the Congressional Research Service, under NFMA, the Forest Service is required to include economic factors both in general and in the following specific conditions: (1) when considering various resource management systems, (2) when

³For a more complete discussion of economic considerations in national forest planning, see The Timberlands Suitability Provision of the National Forest Management Act of 1976, Congressional Research Service (86-652 ENR, Apr. 11, 1986).

determining where even-aged timber management is allowed,⁴ and (3) when identifying lands not suited for timber production. In addition, RPA requires that the Forest Service prepare an annual report assessing its accomplishments and progress in implementing the RPA program. NFMA requires that the annual report include a comparison of returns to the government with estimated expenditures for a representative sample of timber sales.

The Forest Service Is Authorized to Obtain a Fair Return for Certain Goods and Recover Costs for Certain Services

The Federal Land Policy and Management Act of 1976, as amended, generally requires federal agencies to obtain fair market value for the use of federal lands. This act and the Mineral Leasing Act, as amended, generally require federal agencies to obtain fair market value for the use of federal lands for rights-of-way for oil and gas pipelines, power lines, and communications lines. Title V of the Independent Offices Appropriation Act of 1952, as amended, authorizes federal agencies to issue regulations to assess a fair fee for a service or thing of value provided to an identifiable recipient beyond that provided to the general public.

The Office of Management and Budget's (OMB) Circular A-25 implements the Independent Offices Appropriation Act's fee requirements. The circular classifies charges into two categories—special services and leases or sales. When providing special services, such as reviewing and processing permits or leases, federal agencies are to recover the costs of providing the services, resources, or goods. When the government sells or leases goods, resources, or real property, agencies are to establish user fees to recover the fair market value of the goods, resources, or services provided. Under the provisions of the Independent Offices Appropriation Act and OMB Circular A-25, federal agencies are to obtain fair market value in the absence of specific legislation to the contrary.

The Forest Service is prohibited by law from obtaining a fair return for certain goods or recovering costs for certain services. For example, the agency provides recreation through numerous recreation facilities that it manages directly, including about 3,000 campgrounds, over 120,000 miles of hiking trails, and thousands of picnic areas and boating sites. However, according to the Land and Water Conservation Fund Act of 1964 (P.L. 88-578), the Forest Service can charge fees only for the use of (1) boat launching facilities that offer services such as mechanical or hydraulic

⁴Even-aged timber management results in the creation of stands in which trees of essentially the same age grow together. Clear-cutting, shelterwood, and other tree-cutting methods produce even-aged stands.

boat lifts and (2) campgrounds that offer certain amenities such as toilet facilities, drinking water, refuse containers, and tent or trailer spaces.⁵

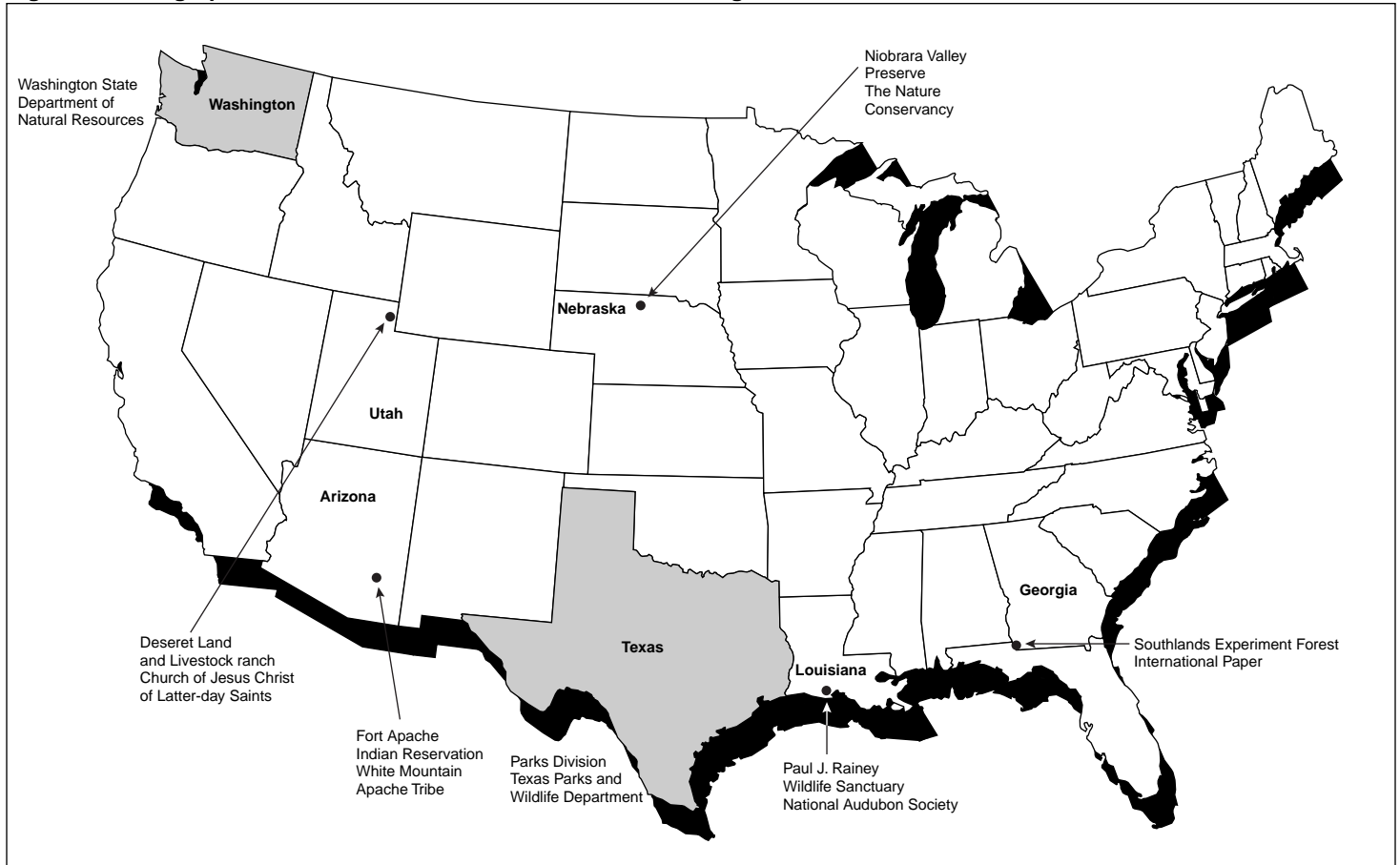
Objectives, Scope, and Methodology

The House Committee on the Budget has an ongoing interest in the Forest Service's management of the nation's 155 forests, including efforts by the agency to be more cost-effective and businesslike in its operations. To assist the Committee in its deliberations and oversight, the Chairman asked us to identify (1) the lessons that can be learned from efforts by nonfederal land managers to generate revenue and/or become financially self-sufficient from the sale or use of natural resources on their lands and (2) legal and other barriers that may preclude the Forest Service from implementing similar efforts on its lands.

As agreed with the Chairman's office, we limited our review to the efforts of seven judgmentally selected nonfederal land managers located throughout the United States (see fig. 1.1): (1) the about 2.9 million acres of trust lands managed by Washington State's Department of Natural Resources; (2) the 1.6 million-acre Fort Apache Indian Reservation in Arizona, home to the White Mountain Apache tribe; (3) the 125 parks, sites, and natural areas, encompassing over 669,000 acres, managed by the Texas Parks Division of the Texas Parks and Wildlife Department; (4) the 201,000-acre Deseret Land and Livestock ranch located in Utah and owned and managed by the Church of Jesus Christ of Latter-day Saints; (5) The Nature Conservancy's 55,000-acre Niobrara Valley Preserve in Nebraska; (6) the National Audubon Society's 27,000-acre Paul J. Rainey Wildlife Sanctuary in Louisiana; and (7) International Paper's 16,000-acre Southlands Experiment Forest in Georgia. These land managers were selected primarily because they appeared to be (1) generating revenue or making a profit from one or more of the six renewable surface uses that the Forest Service is legislatively mandated to sustain on its lands and/or from nonrenewable subsurface resources that the agency is required to consider in its planning and (2) maintaining the long-term health of the land and resources by emphasizing environmental management and protection.

⁵The Omnibus Consolidated Rescissions and Appropriations Act of 1996 (P. L. 104-134), as extended by the Interior and Related Agencies Appropriations Act for Fiscal Year 1997 (P. L. 104-208), directs the Forest Service and three other federal land management agencies to test the collection, retention, and reinvestment of new entrance and user fees for recreation at a variety of sites.

Figure 1.1: Geographical Location of Seven Nonfederal Land Managers' Efforts



To identify the lessons that can be learned from efforts by nonfederal land managers to generate revenue and/or become financially self-sufficient from the sale or use of natural resources on their lands, we interviewed officials and obtained and reviewed relevant documents and data on their (1) revenue-generating programs and activities, (2) missions and goals, (3) degree of financial self-sufficiency, (4) environmental protection and management, and (5) accountability for expenditures and results. The managers' revenue-generating programs and activities are summarized in appendix I and discussed in more detail in appendixes II through VIII.

To identify legal and other barriers that may preclude the Forest Service from implementing similar efforts on its lands, we relied extensively on

prior GAO reports and testimonies. In addition, we provided the agency and the Department of Agriculture's Office of General Counsel with, and received comments on, the approaches and techniques being used by the nonfederal land managers included in our review to generate revenue and/or become financially self-sufficient from the sale or use of natural resources on their lands. We also interviewed, and obtained and reviewed relevant documents and data from, responsible officials in Forest Service headquarters (Washington Office) as well as on selected forests, including the Apache-Sitgreaves in Arizona and the Wasatch-Cache in Utah.

We performed our work from October 1996 through January 1998 in accordance with generally accepted government auditing standards. In conducting our work, we did not independently verify or test the reliability of the data provided by the nonfederal land managers or the Forest Service.

We provided each of the nonfederal land managers with a draft of the appendix discussing their particular effort and made changes in response to their comments. We then obtained comments on a draft of the entire report from the Forest Service. The agency's comments are presented in appendix IX.

Clear Revenue-Generating Priorities, Flexibility, and Accountability Underlie Nonfederal Managers' Efforts

Of the seven uses that the Forest Service is legislatively mandated to sustain or consider in its decision-making, the seven nonfederal land managers whose efforts we reviewed are generating revenue from one or more of five—timber, outdoor recreation, wildlife and fish, rangeland, and subsurface resources. While not always attaining financial self-sufficiency, these nonfederal land managers are employing a variety of sometimes innovative approaches and techniques to generate revenue or reduce costs from the sale or use of natural resources on their lands. Rather than applying a one-size-fits-all approach or technique, the managers have (1) usually tailored their efforts to meet either a clear mission to make a profit over time or an incentive to generate revenue for other mission-related goals and objectives and (2) often been delegated the discretion and flexibility to make choices while being held accountable for their expenditures and results.

Nonfederal Land Managers Are Using Innovative Approaches and Techniques

Although most of the nonfederal land managers whose efforts we reviewed are attempting to increase revenue and/or decrease costs from the sale or use of natural resources on their lands, their success in becoming financially self-sufficient has varied and their revenue has not always covered the costs of providing the goods or services. Moreover, many of the managers are also generating revenue from programs and activities not related to natural resources, including a casino, commercial real estate, land sales, contributions, and investments. However, some of the more innovative approaches and techniques being employed by these land managers appeared to increase revenue or decrease costs from the sale or use of natural resources on certain lands or under certain conditions.

Timber and related activities generated the most revenue for Washington State's Department of Natural Resources and for International Paper on its Southlands Experiment Forest. Timber also generated most of the revenue that the White Mountain Apache tribe derived from natural resources. Natural gas production was the dominant revenue-generating use on the Audubon Society's Paul J. Rainey Wildlife Refuge, livestock grazing generated the most revenue on The Nature Conservancy's Niobrara Valley Preserve, livestock grazing and recreational hunting for big-game wildlife species provided virtually all of the revenue on the Church of Jesus Christ of Latter-day Saints' Deseret Land and Livestock ranch, and recreational entrance and user fees produced the most revenue for the Texas Parks Division. Some of the more innovative approaches and techniques being

employed to generate revenue or reduce costs from the sale or use of natural resources are discussed below.

**Generating Revenue by
Emphasizing the
Production of Goods and
Services on Some Lands or
Within Certain Programs or
Functions**

Managers from Washington State's Department of Natural Resources and International Paper's Southlands Experiment Forest emphasize the production of goods and services on some lands or within certain programs or functions while setting aside other lands, programs, or functions for non-revenue-generating activities, such as conservation, resource protection, and research. For example, the department divides its lands and programs between those that are managed primarily to generate long-term sustainable revenue for its trust beneficiaries and those that are managed primarily to meet regulatory objectives for the protection of resources on public and private lands. The department has also developed several programs to (1) transfer, sell, or exchange trust lands that have a low capability of generating revenue or are more suited for conservation or non-revenue-generating recreation and (2) purchase or otherwise acquire replacement lands capable of generating revenue. As a result, between 1981 and 1994, the department transferred, sold, exchanged, purchased, or otherwise acquired 355,000 acres, or 11 percent of its land base, including transferring about 59,000 acres from commodity production to conservation status since 1989. The state legislature provided funds to the department to compensate the trust for the fair market value of the lands transferred to conservation status.

In addition, officials from Washington State's Department of Natural Resources informed us that as opportunities become available, they attempt to optimize short- and long-term income within acceptable levels of risk by shifting to the highest and best land uses in selected geographic areas. For instance, during the past 25 years, the agency has converted more than 34,000 acres of drylands to higher revenue-producing lands by competitively leasing lands for commercial uses and by replacing livestock with more profitable agricultural uses, such as growing wheat and other dryland grains.

While International Paper manages Southlands Experiment Forest to generate revenue, the company's annual budget separates the forest's research and policy functions from the forest's revenue-generating timber operations. This separation reflects the company's recognition that the forest's research and policy functions sometimes require operational decisions that do not seek to maximize revenue.

Generating Revenue From Recreational Hunting

Managers on the White Mountain Apache tribe's Fort Apache Indian Reservation, the Church of Jesus Christ of Latter-day Saints' Deseret Land and Livestock ranch, and the Southlands Experiment Forest were managing game species as a profitable resource. For example, a hunter can pay over \$24,000 on the Fort Apache Indian Reservation and up to \$8,500 on the Deseret ranch for a trophy bull elk, and the hunts generate more than \$850,000 in annual income for the tribe and most of the \$340,000 in annual net income from Deseret's wildlife program. About 25 percent of Southlands' revenue is generated by recreational hunting, and, according to International Paper officials, is indicative of the company's efforts to generate revenue from growing timber stands.

Generating Revenue From Livestock Grazing

Although grazing revenue varies with such factors as weather conditions and the price of beef cattle, the livestock grazing programs on Deseret and The Nature Conservancy's Niobrara Valley Preserve contributed significantly to the land units' financial self-sufficiency. For example, on average, livestock grazing provides at least 80 percent of Niobrara's total revenue, and, over about the last 10 years, revenue from all activities on the preserve have been sufficient to cover both operating and capital costs, other than the costs to acquire the land, which were paid by the Conservancy.

Deseret and Niobrara are two of a small but growing number of ranches that practice what is often referred to as "time-control" or "time-managed" grazing. On Deseret, this management practice involves developing an annual written plan to (1) set the time of year and limit the length of time that cattle are allowed to graze in an area by moving them among fenced pastures rather than allowing them to graze on open rangeland and (2) rest pastures every year by not allowing cattle to graze on them.

Generating Revenue From Timber Operations

Trust lands managed by Washington State's Department of Natural Resources are funded from total revenue and generate considerable net income for the trust beneficiaries, primarily from timber sales and related activities. The department has initiated several efforts to increase net income from its timber program. For example, according to department officials, they have increased timber revenue by identifying and marketing high-value trees, such as those that can be used as utility or transmission poles or as logs for the log home industry ("merchandising" timber). Since 1990, this practice has generated about \$41 million in additional revenue at a cost of about \$2 million in staff salaries. The department is also

performing both precommercial and commercial thinning, and, to a lesser extent, pruning and fertilizing timber stands to spur tree growth. In fiscal year 1996, tree sales resulting from commercial thinning generated some \$17 million in revenue.

In addition, according to officials from Washington State's Department of Natural Resources, they have (1) increased the efficiency of their timber sale appraisal system by adopting an approach that looks only at prior comparable sales; (2) stopped reimbursing contractors for constructing logging roads, thus reducing the costs to monitor the roads' construction as well as avoiding reimbursing contractors for inefficient road construction practices; (3) initiated lump-sum bidding procedures in which all timber within a stand is sold, thus lowering the costs of monitoring the buyer's removal of timber; (4) replaced oral bidding of timber sales with sealed bids to avoid artificially suppressing the highest bid value; and (5) pilot-tested contracting with a company to harvest timber and then having the department, rather than the company, market the logs. According to department officials, this last effort—called contract logging—has increased the department's return by eliminating the middle man. It also gives the department more control over the timing and environmental impact of logging operations.

Generating Revenue From Entrance Fees and Services

Since fiscal year 1994, managers of Texas state parks (1) have increased entrance and campground fees, sometimes by 100 percent; (2) are managing retail stores previously contracted to concessionaires and have opened new ones; (3) have installed park-leased soft drink machines; and (4) have increased the number of fee-based interpretative and tourist-oriented programs. As a result, park-generated net income—primarily from entrance and campground fees—grew from \$14.8 million in fiscal year 1993 to \$18.5 million in fiscal year 1995, an increase of 25 percent.

Similarly, the White Mountain Apache tribe charges fees for amenity-based recreation on the Fort Apache Indian Reservation, including hiking, camping, boating, river rafting, and snow skiing. In addition, the tribe requires outdoor recreation permits to travel on the reservation's unpaved roads. As a result, recreational fees provide a relatively stable source of revenue to the tribe.

Generating Revenue by Obtaining Water Rights

A use that the Forest Service is legislatively mandated to sustain—watersheds and water flows—played an important role in

generating revenue from other uses, such as irrigating rangelands; sustaining recreational fishing; and providing boating, river rafting, and other outdoor recreational activities. For example, according to the manager of the Deseret Land and Livestock ranch, the ranch is financially self-sufficient, in part, because it has a substantial water right that predates Utah's statehood, as well as most other state water rights. The water is used to irrigate pastures that represent less than 4 percent of the ranch's acreage but provide over 55 percent of the total cattle forage.

Recognizing the importance of water to generating revenue from other uses, Washington State's Department of Natural Resources has obtained and is continuing to pursue water rights from the state's water and irrigation districts as well as other surface water and groundwater irrigation rights and contracted for water from the federal Columbia Basin Irrigation Project. The department has also developed irrigation infrastructure (drilling wells and laying pipes). The water has been used to convert many acres of drylands to irrigated farmlands, grape vineyards, and apple orchards and to significantly increase the earning potential of the department's agricultural lands within central Washington by replacing some livestock with more profitable agricultural crops. As a result of these and other efforts, revenue from the department's agricultural program has grown by nearly 200 percent in the last 15 years, according to department officials.

Reducing the Costs of Regulatory Compliance

Both Washington State's Department of Natural Resources and the White Mountain Apache tribe have entered into agreements with federal regulatory agencies to reduce costs and to provide more regulatory certainty and predictability to revenue-generating timber and other programs. Specifically, in January 1997, the department signed a habitat conservation plan with two federal regulatory agencies. This plan covers 1.6 million acres, or 76 percent of the department's 2.1 million acres of forestland. The agreement includes a "no surprise policy" under which the federal government will not ask for more land or mitigation funding from the state even if a species protected by the plan continues to decline. Furthermore, the subsequent listing of a species as endangered or threatened under the Endangered Species Act will not result in additional mitigation requirements.

Similarly, the White Mountain Apache tribe has assumed responsibility from federal regulatory agencies for accommodating the objectives of federal environmental laws, especially the Endangered Species Act, on the

Fort Apache Indian Reservation. In December 1994, the Chairman of the tribe and the Director of the Department of the Interior's Fish and Wildlife Service signed an innovative statement of relationship between the tribe and the agency that recognizes the tribe as the primary manager of the reservation with the institutional capability to ensure that economic activity does not have an adverse impact on species listed under the Endangered Species Act, as well as on sensitive wildlife and plants. In addition, in June 1997, the Secretary of the Interior signed an order that clarifies the responsibilities of the Department when the implementation of the Endangered Species Act affects federally recognized Indian lands, tribal trust resources, or the exercise of tribal rights. The order contains a provision stating that the United States defers to tribal conservation management plans. Both federal regulatory and tribal officials agree that these agreements will greatly reduce the time and costs associated with accommodating environmental objectives.

Reducing the Costs of Salaries

Other efforts to increase net income through savings included reducing the number of salaried employees by increasing the use of volunteers and prison inmates. For instance, in fiscal years 1994 and 1995, Texas state park managers reduced the number of salaried employees and increased the number of campground volunteers and hosts. They also increased their use of prison inmates to perform routine cleaning, renovation, and improvements at park facilities, as well as other services. Finally, they reduced the number of months worked by seasonal employees. In fiscal year 1995, volunteers donated about 490,000 hours of work valued at \$2.6 million, equal to the work of about 238 full-time employees. The estimated value of the inmates' labor was about \$2.4 million over 2 fiscal years, according to Texas Parks Division officials.

Lessons Learned
Center on Mission
Priorities, Flexibility,
and Accountability

None of the approaches or techniques for increasing revenue or decreasing costs used by the nonfederal land managers in our review were legislatively mandated or otherwise required. Rather, these approaches and techniques usually resulted because the managers had either a clear mission to make a profit over time or an incentive to generate revenue for other mission-related goals and objectives. Moreover, many of the approaches or techniques seemed to be applicable in only certain geographical areas or under certain conditions, thus requiring that the nonfederal managers be given the discretion and flexibility to make choices while being held accountable for their expenditures and results.

**Having a Clear Mission or
an Incentive to Make a
Profit**

The primary goal of private businesses, such as the Deseret Land and Livestock ranch and International Paper, is to make a profit. For example, Deseret ranch is expected not only to be financially self-sufficient but also to earn a 5-percent return on investment on its operations. Armed with this clear mission priority, managers on both the ranch and International Paper's Southlands Experiment Forest have initiated efforts to increase revenue and decrease costs.

Having a clear mission priority to generate long-term sustainable revenue has produced similar results for public agencies. For example, trust lands and programs managed by Washington State's Department of Natural Resources are funded from total revenue and generate considerable net income for the designated trust beneficiaries. Conversely, lands managed by the department that have been set aside for conservation and non-revenue-generating recreation, as well as programs to protect public resources, are not expected to generate revenue and are supported primarily by legislatively appropriated funds.

Businesses and agencies that emphasize making a profit often establish incentives to increase revenue. For example, Deseret ranch's employees have two financial incentive plans—one based on the ranch's net income and the other based on annual, individual performance goals. Lands and programs managed by Washington State's Department of Natural Resources to generate long-term sustainable revenue for the designated trust beneficiaries are funded solely from a percentage of the total revenue they generate, thus providing employees with an incentive to maximize revenue. And, when the Texas Parks and Wildlife Department established a financial incentive by returning a portion of any increased revenue or decreased costs to the park where the revenue or savings was generated, state park managers responded by increasing revenue by 25 percent and reducing expenditures for operations by almost 10 percent over 2 years, according to Texas Parks Division officials.

The need to generate revenue for other mission-related goals and objectives can also provide an incentive. For example, the Niobrara Valley Preserve can spend money to fulfill The Nature Conservancy's biological diversity goal only when it raises money. In addition, the Conservancy requires all of its preserves to strive for financial self-sufficiency and allows them to retain most of the revenue that they generate. Since bison and cattle, on average, provide at least 80 percent of the preserve's total revenue, Niobrara has an incentive to generate revenue from grazing.

Accompanying Flexibility
With Accountability for
Expenditures and Results

Virtually all of the nonfederal land managers whose efforts we reviewed have the discretion and flexibility to (1) explore innovative entrepreneurial ideas or conduct research to increase profits and (2) choose where and when to apply the results. One result has been that they have tailored their approaches and techniques for generating revenue or reducing costs to their particular geographical areas or conditions. However, this freedom to make choices is often accompanied by oversight by the parent organization, the beneficiaries of the revenue generated, or others to ensure accountability for expenditures and results.

For example, the managers of the Deseret Land and Livestock ranch and the Southlands Experiment Forest have the freedom to try innovative approaches and techniques to increase net income. However, the ranch manager is held accountable for his expenditures and results by the church and the forest manager by the company and its stockholders.

Washington State's Department of Natural Resources is held accountable for the expenditures and results of its management of state trust lands by the designated trust beneficiaries, including state school districts, colleges, and universities, as well as other public agencies and charitable institutions within the state. Thus, when the department makes a decision that may reduce current income and return on investment over the short term, it must show these beneficiaries that it has exercised skill and care in protecting trust resources (the "prudent person" doctrine), ensured equal treatment for all generations (the "intergenerational equity" principle), and not foreclosed reasonably foreseeable future sources of income by actions taken today. Each of these principles may reduce current income and return on investment over the short term but may be viewed over the long term as having been the most prudent course.

Washington State's Department of Natural Resources also has two initiatives under way that address accountability. One is the Asset Stewardship Program, which is to look at the current and possible future mix of assets to determine which mix will best generate long-term revenue for the trust beneficiaries. As part of this initiative, the department plans to (1) set standards for evaluating the mix of assets on the basis of their profitability, biological diversity, carrying capacity, and overall positioning and (2) develop measurement tools to monitor the assets' ecological, social, and economic performance. The agency also hopes to develop a longer-term management framework that will give its managers flexibility to respond to future population and other changes that affect the management of state lands and programs.

Chapter 2
Clear Revenue-Generating Priorities,
Flexibility, and Accountability Underlie
Nonfederal Managers' Efforts

The second effort is the department's March 1997 long-term Strategic Plan—the "10-Year Direction"—which, among other things, sets out major goals, objectives, and specific strategies to achieve them. According to department officials, the plan (1) will be consistent with a statewide performance budgeting system now being developed and (2) parallels the Asset Stewardship Plan by identifying specific targets for managing various trust assets.

The Forest Service Lacks Clear Revenue-Generating Priorities, Flexibility, and Accountability

Some of the approaches and techniques being employed by the nonfederal land managers whose efforts we reviewed appear to have the potential to increase revenue or decrease costs from the sale or use of natural resources on certain Forest Service lands, or within certain programs and activities, under certain conditions. The Forest Service is, to a limited extent, employing a few of these approaches and techniques, such as performing both precommercial and commercial thinning on some lands suitable for commercial timber harvesting, and is not prohibited by law from using other approaches and techniques, including selling logs and other cut roundwood products. In addition, the agency had reduced staffing from about 46,000 permanent positions in fiscal year 1992 to about 39,400 in fiscal year 1996, or by about 14 percent. However, generating revenue and reducing costs are not mission priorities for the agency, and managers lack both flexibility to make choices and accountability for results.

The low priority assigned to increasing revenue and decreasing costs results, in part, from the importance or emphasis given to ecological, social, and other values and concerns. Statutory language implies that maximizing revenue should not be the overriding criterion in managing the national forests. Requirements in environmental and planning laws and their judicial interpretations have increasingly required the Forest Service to shift its emphasis from uses that generate revenue to those that do not. In recent years, legislative and administrative decisions have set aside or withdrawn an increasing percentage of Forest Service lands for conservation and, in keeping with the existing legislative framework, the Forest Service is moving away from, rather than toward, financial self-sufficiency. The agency is required to continue providing certain goods and services at less than their fair market value. Finally, certain congressional expectations and revenue-sharing provisions serve as disincentives to either increasing revenue or decreasing costs.

When the Congress has provided the Forest Service with the authority to obtain fair market value for goods or recover costs for services, the agency often has not done so. The Forest Service also has not always acted to contain costs, even when requested to do so by the Congress. Underlying these shortcomings is the failure to hold the agency adequately accountable for its performance for increasing revenue or decreasing costs. The Forest Service's recent strategic plan, which is intended to form the foundation for holding the Forest Service accountable for its performance, contains no goals or performance measures for obtaining fair market value or for reducing or containing costs.

The Forest Service Is Not Expected to Maximize Revenue

Language in federal statutes implies that maximizing revenue should not be the overriding criterion in managing the national forests. Specifically, the Multiple-Use Sustained-Yield Act of 1960 which—together with the Organic Administration Act of 1897—guides the management of the nation’s forests, states the following:

“Multiple use means . . . that some land will be used for less than all the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.” (Emphasis added by GAO.)

Thus, according to the Congressional Research Service, the Congress expected economic values to affect the management of the national forests but “specifically ruled out maximizing receipts or outputs as the overriding economic criterion.”¹

In addition, the National Forest Management Act of 1976, which provides guidance for forest planning, requires the Secretary of Agriculture to promulgate regulations that “insure that timber will be harvested from National Forest System lands only where . . . the harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber. . . .” Thus, according to the Congressional Research Service, the act provides that maximizing returns or volume cannot be the only criterion for determining the harvesting system to be used.

Legislative Requirements Limit the Forest Service’s Ability to Generate Revenue

Requirements in environmental and planning laws and their judicial interpretations limit the Forest Service’s ability to generate revenue. In particular, section 7 of the Endangered Species Act represents a congressional design to give greater priority to the protection of endangered species than to the primary missions of the Forest Service and of other federal agencies.² When proposing a project, such as a timber sale, the Forest Service bears the burden of demonstrating that its actions will not be likely to jeopardize listed species. Other laws enacted primarily during the 1960s and 1970s—such as the Clean Water Act, the Clean Air Act, the Migratory Bird Treaty Act, and the National Forest Management

¹The Timberlands Suitability Provision of the National Forest Management Act of 1976, Congressional Research Service (86-652 ENR, Apr. 11, 1986).

²*TVA v. Hill*, 437 U.S. 153, 185 (1978).

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The Forest Service Lacks Clear
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and Accountability

Act—and their judicial interpretations and implementing regulations also establish minimum requirements for these components of natural systems.

In response to these requirements, the Forest Service has, during the last 10 years, increasingly shifted the emphasis under its broad multiple-use and sustained-yield mandate from revenue-generating uses (primarily producing timber) to uses that do not generate revenue (primarily sustaining wildlife and fish and their habitats).³ For example, in the states of Washington, Oregon, and California, federal lands, managed primarily by the Forest Service, represent almost half (47.8 percent) of the total lands suitable for commercial timber harvesting. In western Washington State, western Oregon, and northern California, 24.5 million acres of federal land were available for commercial timber harvesting. However, about 7.6 million acres, or 31 percent of the available acreage, have been set aside or withdrawn as habitat for species that live in old-growth forests, including the threatened northern spotted owl, or as riparian reserves to protect watersheds. To protect the forests' health, only limited timber harvesting and salvage timber sales are allowed in some of these areas. In addition, requirements for maintaining biological diversity under the National Forest Management Act—as well as for meeting standards for air and water quality under the Clean Air and Clean Water acts, respectively—may limit the timing, location, and amount of harvesting that can occur. Moreover, harvests from these lands could be further reduced by plans to protect threatened and endangered salmon.

Requirements in environmental and planning laws have also necessitated the use of more costly and time-consuming timber-harvesting methods.⁴ For example, in June 1992, the Forest Service announced plans to reduce the amount of timber harvested by clear-cutting⁵ by as much as 70 percent from fiscal year 1988 levels in order to manage the national forests in a more environmentally sensitive manner. This policy change has increased the timber program's costs, since clear-cutting is a relatively economical method of harvesting. However, according to the Forest Service, these increased costs may be offset to some unknown degree by reductions in the number of administrative and legal challenges to individual timber sales.

³Forest Service Decision-Making: A Framework for Improving Performance (GAO/RCED-97-71, Apr. 29, 1997).

⁴Forest Service: Factors Affecting Timber Sales in Five National Forests (GAO/RCED-95-12, Oct. 28, 1994).

⁵Clear-cutting is a harvesting method that involves removing all of the trees from a timber-harvesting site at one time.

The Forest Service's ability to generate revenue is not static and changes on the basis of new information and events, such as the listing of a species as endangered or threatened; the results of analyses, monitoring, and evaluation; and new judicial interpretations.⁶ For example, the Forest Service is required by the National Environmental Policy Act to assess activities occurring outside the national forests in deciding which uses to emphasize on its lands. A January 1997 habitat conservation plan between Washington State's Department of Natural Resources and two federal regulatory agencies and similar agreements—which now cover 18 million acres of state and private land—require that any additional mitigation deemed necessary to protect listed species covered by the plans first be accomplished on federal lands. Therefore, while these agreements are expected to reduce costs and to provide more regulatory certainty and predictability on nonfederal lands, they may increase costs and regulatory uncertainty on Forest Service lands. Some Forest Service officials believe that future assessments are likely to show that the national forests are assuming a growing proportion of the responsibility for protecting wildlife and fish and that endangered and threatened species and their habitats are increasingly being concentrated on federal lands.

Legislative and Administrative Decisions Have Withdrawn Lands for Non-Revenue- Generating Uses

In recent years, legislative and administrative decisions have set aside or withdrawn an increasing percentage of Forest Service lands for conservation. In keeping with the existing legislative framework, the Forest Service's management approach has increasingly emphasized non-revenue-generating uses over other uses that can and have generated revenue.

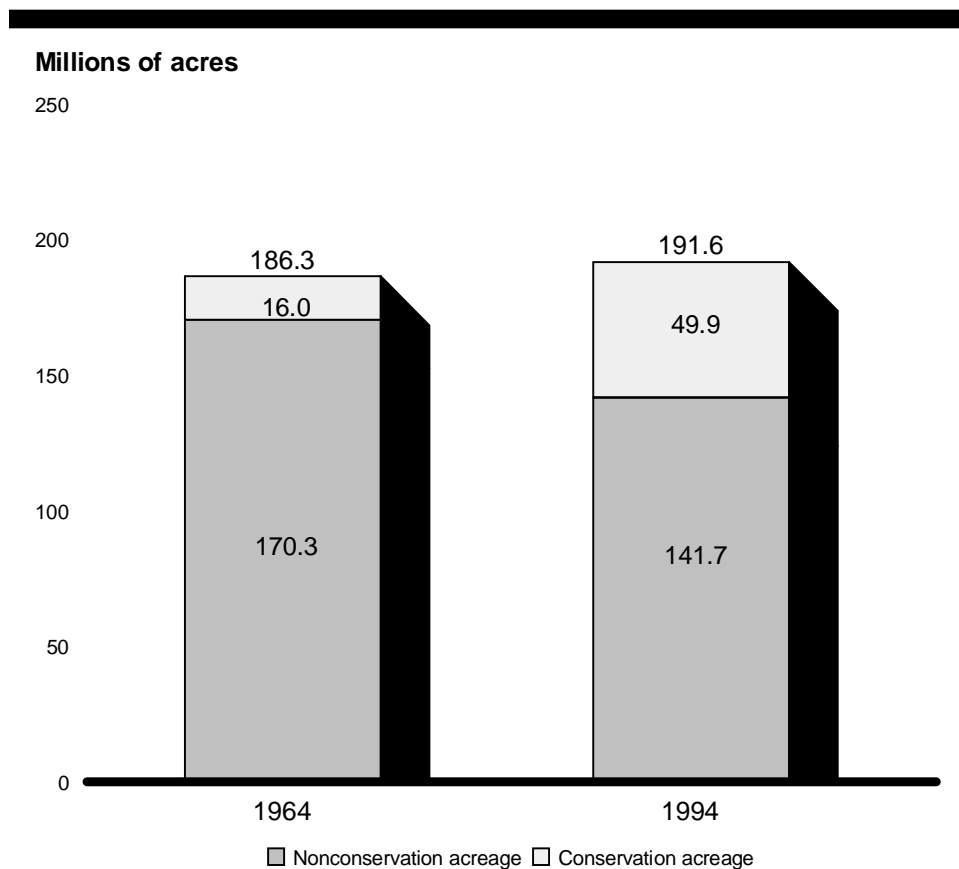
For example, an increasing percentage of Forest Service lands has been set aside by the Congress or administratively withdrawn for conservation—as wilderness, wild and scenic rivers, national monuments, and recreation. Only limited timber sales and oil and gas leasing—both of which are usually offered in competitive auction—are allowed in some of these areas.

In 1964, less than 9 percent (16 million acres) of the national forests' acreage was managed as wilderness, wild and scenic rivers, and national

⁶Forest Service: Issues Relating to Its Decisionmaking Process ([GAO/T-RCED-96-66](#), Jan. 25, 1996), Forest Service: Issues Related to Managing National Forests for Multiple Uses ([GAO/T-RCED-96-111](#), Mar. 26, 1996), and Forest Service Decision-Making: Greater Clarity Needed on Mission Priorities ([GAO/T-RCED-97-81](#), Feb. 25, 1997).

monuments and for recreation. By 1994, this figure had increased to 26 percent (almost 50 million acres).⁷ (See fig. 3.1.)

Figure 3.1: Forest Service Lands Withdrawn for Conservation



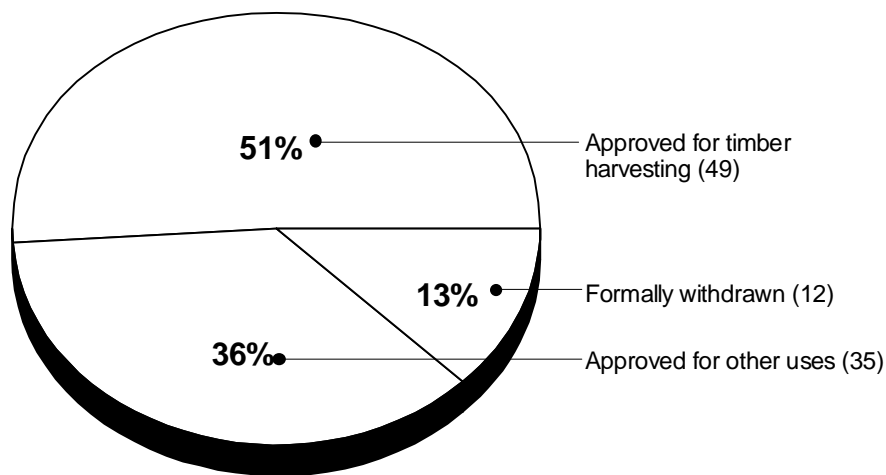
Source: GAO's analysis of data from the Department of Agriculture.

According to the Forest Service, of the 96 million acres within national forests that contain timber suitable for commercial harvesting, 49 million acres, or 51 percent, have been approved for timber harvesting in the agency's forest plans. Another 35 million acres, or 36 percent, have been approved for other uses, such as wildlife habitat and soil and watershed management, while the remaining 12 million acres, or 13 percent, have

⁷Land Ownership: Information on the Acreage, Management, and Use of Federal and Other Lands (GAO/RCED-96-40, Mar. 13, 1996) and Federal Land Use (GAO/RCED-96-139R, May 7, 1996).

been formally withdrawn for other uses, such as wilderness areas.⁸ (See fig. 3.2.)

Figure 3.2: Forest Service Lands Suitable for Commercial Timber Harvesting



Acres in millions

Source: Forest Service.

Most of the federal acreage that has been set aside for conservation is located in 12 western states.⁹ In western Washington, western Oregon, and northern California, 11.4 million acres—or 47 percent of the 24.5 million acres of federal land available for commercial timber harvesting—have been set aside or withdrawn for conservation. Added to the about 7.6 million acres in these three states that have been set aside or withdrawn as habitat for old-growth forest species and as riparian reserves, 77 percent of the federal lands in the three states that were available for commercial timber harvesting have been set aside or withdrawn, primarily to meet environmental requirements or achieve conservation purposes.

⁸Federal Land Use (GAO/RCED-96-139R, May 7, 1996).

⁹The 12 western states are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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Revenue-Generating Priorities, Flexibility,
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Setting aside lands for environmental or conservation purposes has reduced both the volume of timber sold from Forest Service lands and receipts from timber sales. Timber volume and receipts have also been reduced by (1) an increasing knowledge of the importance of naturally functioning systems—such as watersheds, airsheds, soils, and vegetative and animal communities—to the long-term sustainability of other forest uses, including timber production¹⁰ and (2) an increasing recognition that past Forest Service management decisions have led to degraded aquatic habitats, declining populations of some wildlife species, and increased forest health problems.¹¹

In addition, the thrust of the Forest Service’s timber sales program is changing from primarily supplying commercially valuable timber to the wood-using industry in response to the nation’s demand for wood to using timber sales as a “tool” for achieving land stewardship objectives that require manipulating the existing vegetation. To achieve a land stewardship objective—such as promoting the forests’ health, creating desired wildlife habitat, and reducing fuels and abnormally dense undergrowth that have accumulated in many forests and have increased the threat of unnaturally catastrophic fires—often necessitates preparing sales that include a mixture of both low- and high-value material, further reducing receipts from timber sales.

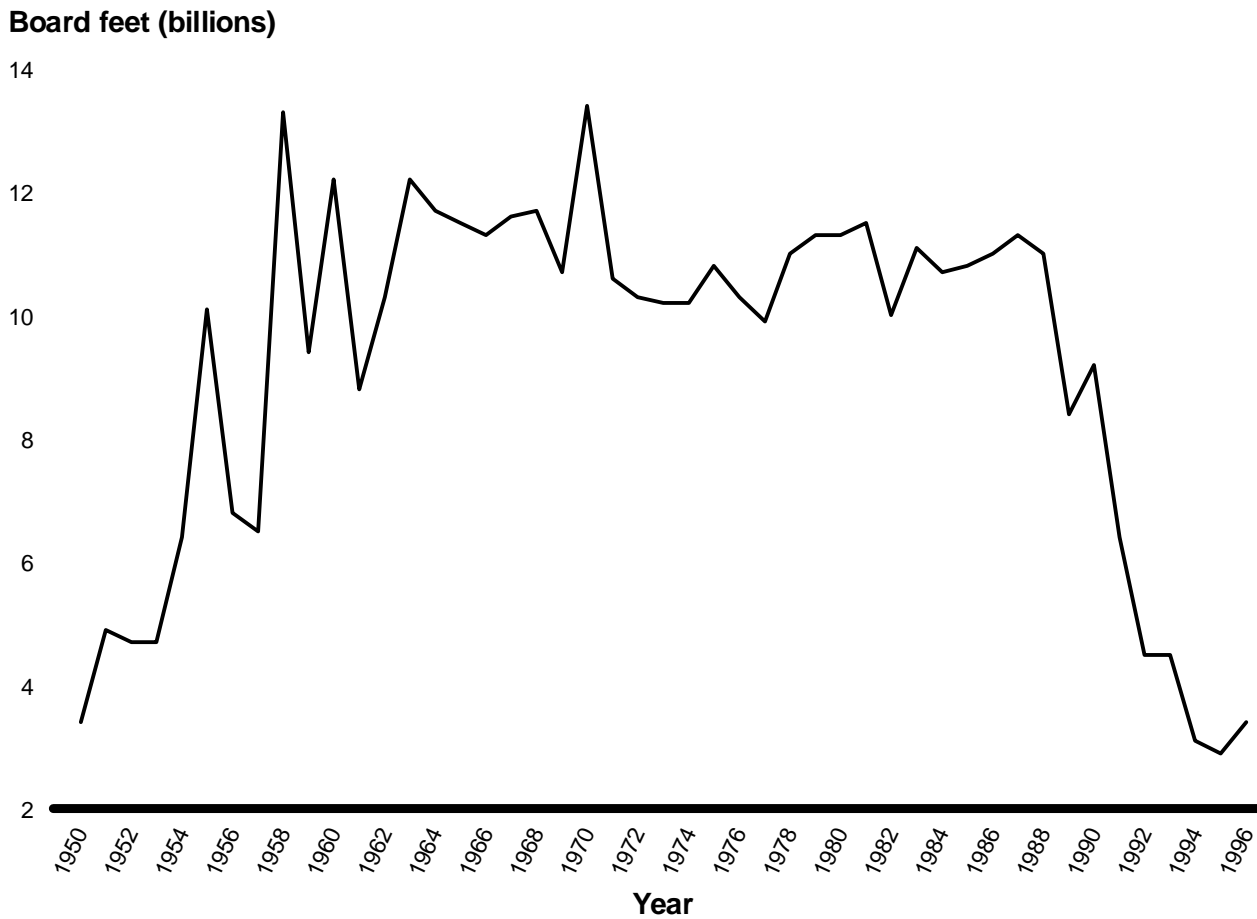
Historically, the volume of timber sold from Forest Service lands in western Washington, western Oregon, and northern California constituted from a third to a half of all Forest Service timber sales. However, the volume of timber sold from this region declined from 4.3 billion board feet in 1989 to 0.9 billion board feet in 1994, a decrease of about 80 percent. Nationwide, the volume of timber sold from Forest Service lands decreased from over 11.3 billion board feet in 1988 to 3.4 billion board feet in 1996, a decrease of about 70 percent. (See fig. 3.3.) During this time, timber sales receipts decreased from \$1.4 billion to \$0.6 billion, or by 57 percent. (See fig. 3.4.)

¹⁰Ecosystem Management: Additional Actions Needed to Adequately Test a Promising Approach (GAO/RCED-94-111, Aug. 16, 1994).

¹¹See, for example, Federal Fire Management: Limited Progress in Restarting the Prescribed Fire Program (GAO/RCED-91-42, Dec. 5, 1990).

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Figure 3.3: Volume of Timber Sold From Forest Service Lands, 1950-96

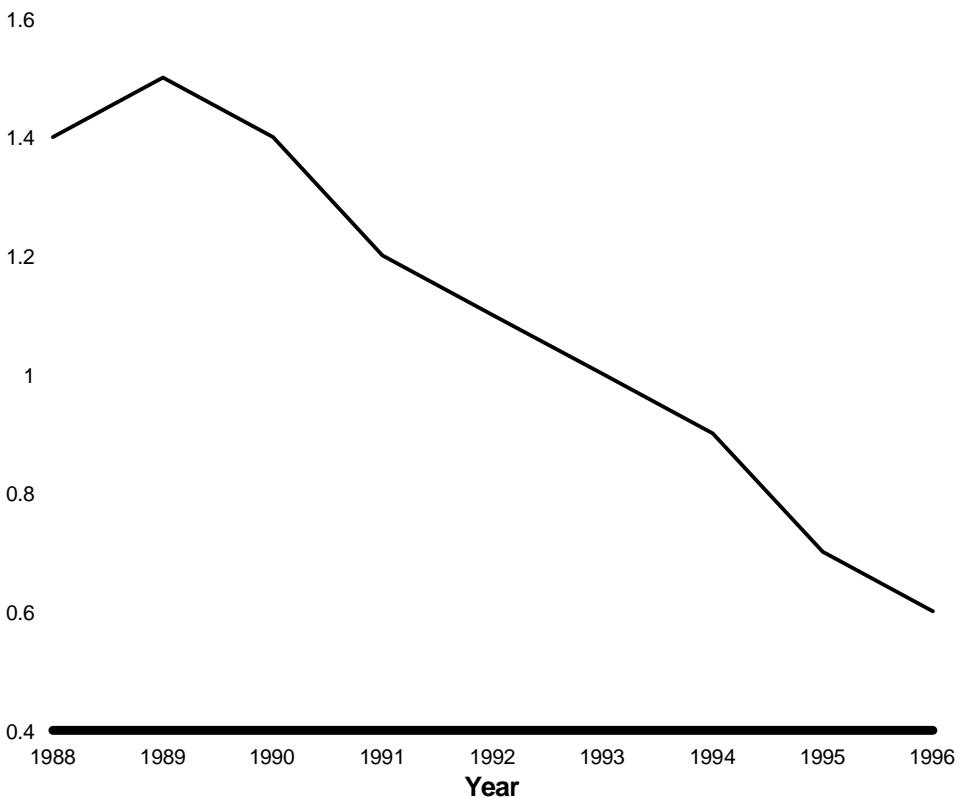


Note: Volume is in billions of board feet. A board foot is a measure of wood volume equal to a board 1 foot long by 1 foot wide by 1 inch thick.

Source: Forest Service.

Figure 3.4: Timber Sales Receipts,
Fiscal Years 1988-96

Timber sales receipts (dollars in billions)



Dollars in billions

Source: Forest Service.

Like the acreage available for timber harvesting, the acreage available for oil and gas leasing has declined. According to a 1997 study by a consortium of oil and gas trade and professional associations, the amount of federal land in eight western states open to oil and gas leasing declined from 114 million acres in 1983 to fewer than 33 million acres in 1997, a drop of more than 60 percent.¹² Of the 82 million acres of Forest Service

¹²“Federal Land Access to Oil and Gas Minerals in Eight Western States,” Cooperating Associations Forum (1997). The eight western states are California, Colorado, Montana, Nevada, New Mexico, North Dakota, Utah, and Wyoming.

land included in the study, 71 million acres, or 86 percent, are subject to a restriction that either forbids oil and gas development entirely or imposes stringent requirements on surface occupancy and access, according to the consortium.

The Forest Service Is Expected to Provide Certain Goods and Services at Less Than Fair Market Value

As the acreage available for commodity uses has decreased, the American public has increased its recreational use of the national forests substantially, according to the Forest Service. This demand is expected to increase steadily over the next 50 years, requiring the agency to spend more time and resources on this use. However, the Forest Service is currently prohibited by law from charging fees for the use of most recreational sites and areas and from obtaining fair market value for the use of other areas that it manages directly.

The decision not to charge fees for the use of most recreational sites and areas directly managed by the Forest Service reflects a long-standing philosophy of free access to public lands.¹³ Other legislative requirements that limit the generation of revenue on Forest Service lands also reflect this philosophy or a desire to promote the economic stability of certain historic commodity uses. As a result, the Forest Service is required to continue to provide certain goods and services at less than their fair market value.

The Forest Service Cannot Charge or Obtain Fair Market Value for Many Recreational Services

The number of visitor days in national forests has grown from about 25 million in 1950 to over 340 million in 1996. (See fig. 3.5.) Compared with timber and minerals, recreation generates substantially less revenue. According to the Forest Service, it collected only about 7 cents per visit in receipts and special use fees in 1993.¹⁴ Among the factors contributing to this low rate of return is that the agency is prohibited by law from charging fees for the use of most recreational sites and areas that it

¹³Forest Service: Difficult Choices Face the Future of the Recreation Program (GAO/RCED-91-115, Apr. 15, 1991).

¹⁴The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan, Draft 1995 RPA Program, U.S. Department of Agriculture, Forest Service, Washington Office (Oct. 16, 1995).

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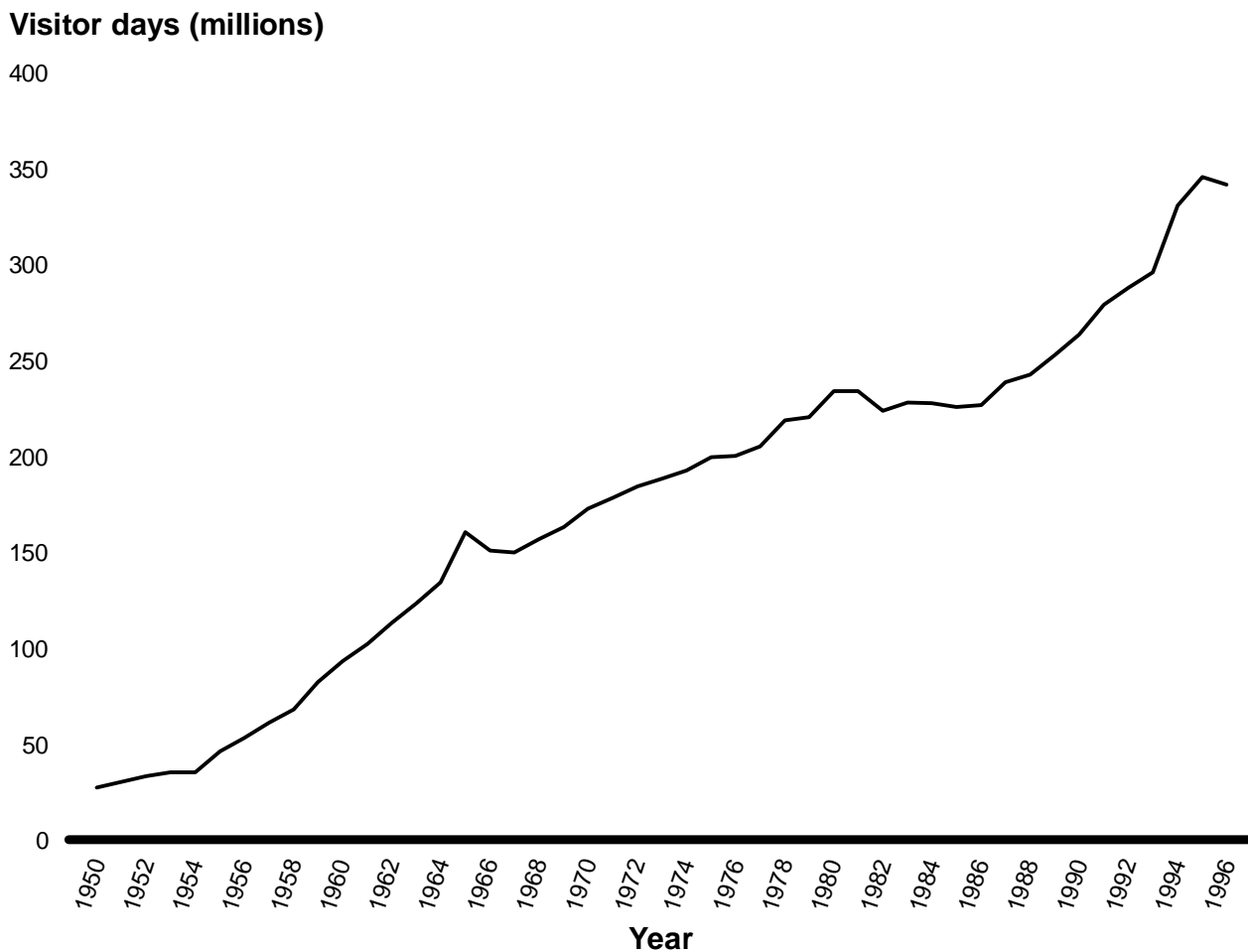
manages directly.¹⁵ In addition, the Omnibus Parks and Public Lands Management Act of 1996 (P.L. 104-333) included a new fee system for ski areas that was developed by the ski industry. As noted in an April 1993 report, this system does not ensure that fees collected from ski areas reflect fair market value.¹⁶

¹⁵According to the Land and Water Conservation Fund Act of 1964 (P. L. 88-578), the Forest Service can charge fees only for the use of (1) boat launching facilities that offer services such as mechanical or hydraulic boat lifts and (2) campgrounds that offer certain amenities such as toilet facilities, drinking water, refuse containers, and tent or trailer spaces. However, the Omnibus Consolidated Rescissions and Appropriations Act of 1996 (P. L. 104-134), as extended by the Interior and Related Agencies Appropriations Act for Fiscal Year 1997 (P. L. 104-208), directs the Forest Service and three other federal land management agencies to test the collection, retention, and reinvestment of new entrance and user fees for recreation at a variety of sites.

¹⁶Forest Service: Little Assurance That Fair Market Value Fees Are Collected From Ski Areas (GAO/RCED-93-107, Apr. 16, 1993).

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Figure 3.5: Visitor Days in National Forests, 1950-96



Note: Data through 1964 are in "visits." A visit equals one entry into a national forest. Data after 1964 are in "visitor days." A visitor day equals a 12-hour visit. For example, three people visiting a national forest for 4 hours each would equal 1 visitor day. In 1965, a visit averaged 0.83 visitor days.

Source: Forest Service.

The Forest Service's inability to obtain a fair return for the recreational opportunities provided on national forests can distort comparisons of

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revenue and operating costs. For example, in a June 1997 report,¹⁷ we compared the operations of a state forest (the Bladen Lakes) and two national forests (the Nantahala and Pisgah) in North Carolina. The state forest generated enough revenue to make it almost financially self-sufficient, while the two national forests generated enough to cover only about 4 percent of their operating costs. Whereas the state forest emphasized the sale of timber and other forest products, the national forests emphasized the provision of non-revenue-generating visitor services.

The Forest Service manages half of the nation's big-game and coldwater fish habitat. However, federal statutes and regulations have narrowly defined the instances in which the Forest Service can charge fees for noncommercial recreational activities,¹⁸ such as hunting and fishing, on its lands, and the agency generally defers to state laws regulating these activities. For example, while a hunter can pay over \$24,000 on the Fort Apache Indian Reservation and up to \$8,500 on the Deseret Land and Livestock ranch for a trophy bull elk, Forest Service managers on the Apache-Sitgreaves and Wasatch-Cache forests—which abut the reservation and the ranch, respectively—cannot charge individuals for hunting on their lands. Thus, while receipts from trophy bull elk hunts on the 1.8 million acres within the Fort Apache Indian Reservation and the Deseret ranch totaled about \$1.2 million a year (about 66 cents an acre), outfitter-guide operations, including big-game hunting, on the 192 million acres of Forest Service lands generate only \$2 million a year (about 1 cent per acre).

Legislative Requirements
Limit the Generation of
Revenue for Other Goods
and Services

Other legislative requirements—reflecting a philosophy of free access to public lands or a desire to promote the economic stability of certain historic commodity uses—also limit the generation of revenue on Forest Service lands. For example, the Mining Law of 1872 was enacted to promote the exploration and development of domestic mineral resources as well as the settlement of the western United States. Under the act's provisions, the federal government receives no financial compensation for hardrock minerals, such as gold and silver, extracted from Forest Service

¹⁷Land Ownership: Similarities and Differences in the Management of Selected State and Federal Land Units (GAO/RCED-97-158, June 27, 1997).

¹⁸Noncommercial recreational activities are those for which (1) no entry or participation fee is charged and (2) the primary purpose is not the sale of a good or service.

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and other federal lands.¹⁹ In 1990, hardrock minerals worth at least \$1.2 billion were extracted from federal lands, while known, economically recoverable reserves of hardrock minerals remaining on federal lands were valued at \$64.9 billion.²⁰ In contrast, the 11 western states that lease state-owned lands for mining purposes impose a royalty on minerals extracted from those lands.²¹ The 104th Congress considered, but did not enact, several bills that would have imposed royalties on hardrock minerals extracted from federal lands. A bill to impose royalties on hardrock minerals extracted from federal lands has also been introduced in the 105th Congress. If the Congress were to adopt an 8-percent royalty on gross profits, as proposed in two bills in the 104th Congress, the Congressional Budget Office estimates that the government would receive \$184 million in fiscal years 1998-2002.²²

Similarly, the formula that the Forest Service uses to charge for grazing livestock on its lands keeps fees low to promote the economic stability of western livestock grazing operators with federal permits.²³ In a June 1991 report, we compared the existing grazing fee formula with alternatives that had been jointly developed by the Forest Service and the Bureau of Land Management.²⁴ We noted that evaluating the soundness of any formula depends on the primary objective to be achieved and that deciding among objectives involves policy trade-offs more than analytical solutions. Nevertheless, the fees were too low to cover the government's costs of managing the grazing program.

¹⁹Federal Land Management: The Mining Law of 1872 Needs Revision ([GAO/RCED-89-72](#), Mar. 10, 1989).

²⁰Mineral Resources: Value of Hardrock Minerals Extracted From and Remaining on Federal Lands ([GAO/RCED-92-192](#), Aug. 24, 1992).

²¹Mineral Royalties: Royalties in the Western States and in Major Mineral-Producing Countries ([GAO/RCED-93-109](#), Mar. 29, 1993).

²²Addressing the Deficit: Budgetary Implications of Selected GAO Work for Fiscal Year 1998 ([GAO/OCG-97-2](#), Mar. 14, 1997).

²³The fee was established under a formula in the Public Rangelands Improvement Act of 1978 and was extended by an executive order.

²⁴Rangeland Management: Current Formula Keeps Grazing Fees Low ([GAO/RCED-91-185BR](#), June 11, 1991).

Certain Congressional
Expectations and
Revenue-Sharing
Provisions Serve as
Disincentives to
Increasing Revenue or
Decreasing Costs

Congressional expectations and revenue-sharing provisions have sometimes served as disincentives to either increasing revenue or decreasing costs from the sale or use of natural resources on Forest Service lands. Establishing annual output targets and sharing revenue that has been generated before deducting the costs of providing goods or services furnish two examples.

For instance, to prepare and administer timber sales, the Forest Service relies primarily on annual appropriations based on such criteria as the anticipated volume of timber to be offered for sale, and the Forest Service's performance measures are based on the volumes of timber offered for sale.²⁵ In addition, congressional expectations for the agency's timber program are often expressed as timber sale targets. To meet these expectations and targets, the Forest Service may not always recover its costs to prepare and administer the sales.²⁶

When the Forest Service is allowed to retain a portion of the revenue it generates, it does so without deducting its costs, which are funded from annual appropriations. By law, states and counties also often share in revenue before deducting the full costs of providing the goods or services. Thus, neither the agency nor the states and counties have an incentive to control costs.

For example, from fiscal year 1992 through fiscal year 1994, the Forest Service spent about \$1.3 billion to prepare and administer timber sales. During that period, the agency collected nearly \$3 billion in timber sales receipts. Instead of being required to return the money it spent to the Treasury, the Forest Service was allowed to retain about \$1.7 billion, or 57 percent, in various funds and accounts for specific purposes, such as the reforestation of harvested areas, preparation and administration of salvage timber sales,²⁷ removal of brush, control of erosion, and building of roads that provide access to the timber sales areas, as provided for by law. Another \$887 million, or 30 percent, was distributed to the states in which

²⁵Public Timber: Federal and State Programs Differ Significantly in Pacific Northwest (GAO/RCED-96-108, May 23, 1996).

²⁶See, for example, Forest Service Needs to Improve Efforts to Protect the Government's Financial Interest and Reduce Below-Cost Timber Sales (GAO/T-RCED-91-42, Apr. 24, 1991).

²⁷"Salvage" timber refers to timber that is being made available for harvest because it is insect-infested, dead, damaged, or downed by wind or other natural means.

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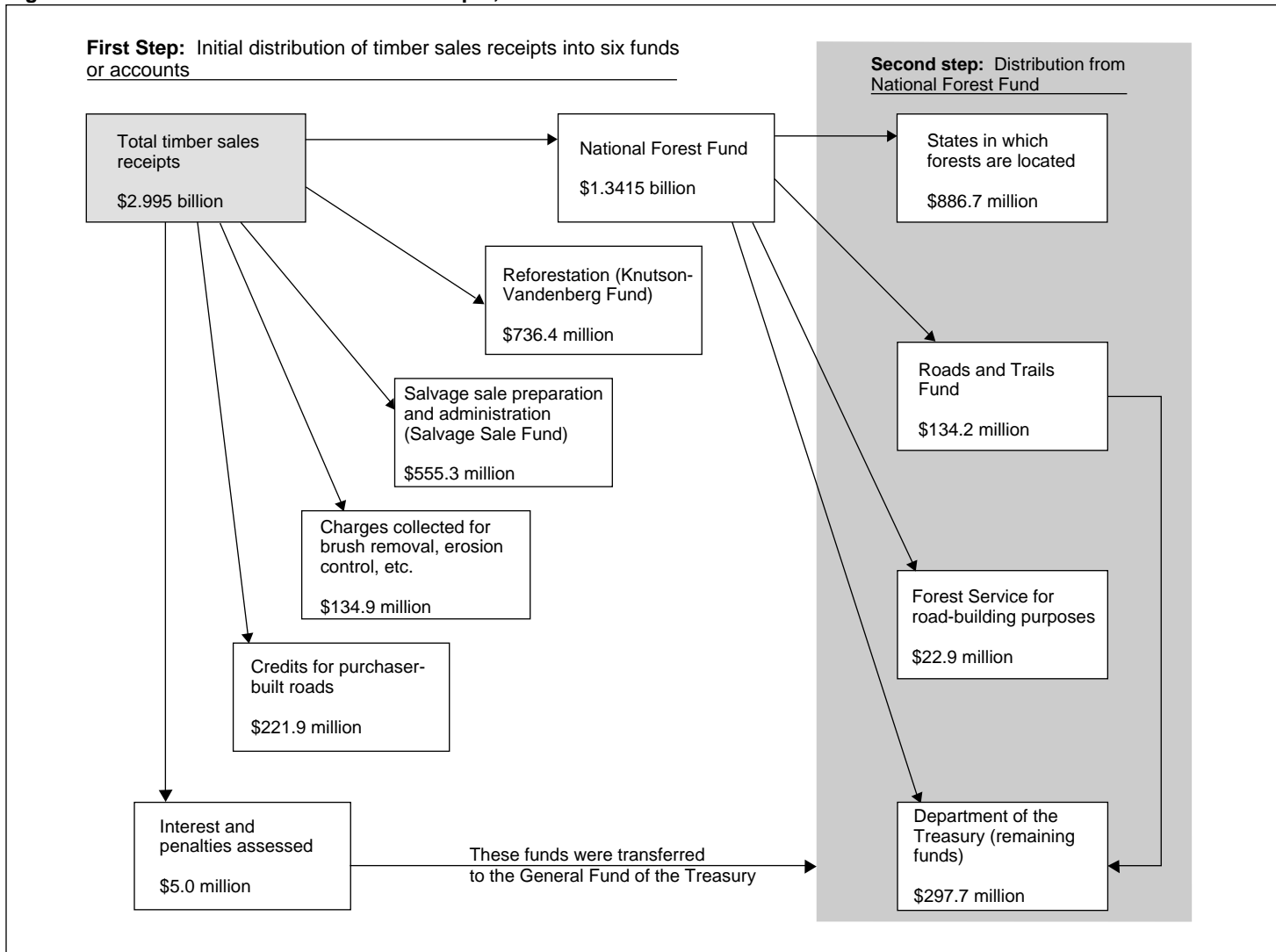
the forests are located.²⁸ The funds can be used by the states to benefit roads and schools in the counties where the receipts were earned. The remaining \$437 million was deposited in, or transferred to, the General Fund of the Treasury.²⁹ (See fig. 3.6.)

²⁸To correct inappropriate payments in fiscal year 1994, distributions from the National Forest Fund to the states should be reduced by about \$145 million, and receipts from the fund deposited in the General Fund of the Treasury should be increased by about \$145 million. See Forest Service: Unauthorized Use of the National Forest Fund (GAO/RCED-97-216, Aug. 29, 1997).

²⁹Forest Service: Distribution of Timber Sales Receipts, Fiscal Years 1992-94 (GAO/RCED-95-237FS, Sept. 8, 1995).

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Figure 3.6: Distribution of Timber Sales Receipts, Fiscal Years 1992-94



Note: The amounts deposited into the Roads and Trails Fund were transferred to the General Fund of the Treasury to offset annual appropriations for the construction and maintenance of roads and trails.

Source: GAO's analysis of data from the Department of Agriculture.

Similarly, 50 percent of the total revenue from livestock grazing on national forests and grasslands is returned to the Forest Service to fund various range improvements, such as fences and water developments, and 25 percent is distributed to the states, even though the revenue does not cover the agency's costs of managing its grazing program.³⁰

Under the Mineral Leasing Act (30 U.S.C. 181 *et seq.*, as amended), 50 percent of the revenue for federal onshore minerals is distributed to the state in which the production occurred. Another 10 percent is distributed to the General Fund of the Treasury and the remaining 40 percent goes to a reclamation fund used for the construction of irrigation projects.³¹ However, in 1991, after the passage of Interior's appropriations bill, states receiving revenue from federal onshore minerals development began paying a portion of the costs to administer the onshore leasing laws—a practice known as “net receipts sharing.” Net receipts sharing became permanent with the passage of the Omnibus Budget Reconciliation Act of 1993, which effectively requires that the federal government recover from the states about 25 percent of the prior year's federal appropriations allocated to mineral-leasing activities. In fiscal year 1996, 41 states received about \$481 million in revenue from the development of federal onshore minerals. The states paid the federal government about \$22 million as their portion of the costs to administer the onshore leasing laws.³² Sharing revenue after deducting these costs may provide a strong incentive for the states to ensure that the costs are contained or reduced.

The Forest Service Has Not Always Obtained a Fair Return for Goods or Recovered Costs for Services as Authorized by Law

The Congress has given the Forest Service the authority to obtain fair market value for some goods or to recover costs for some services. However, the agency has not always taken advantage of this authority, as the following examples from our prior work show.

- In June 1997, we reported that the sealed bid auction method is significantly and positively related to higher bid premiums on timber sales. However, the Forest Service used oral bids at single-bidder sales rather than sealed bids, resulting in an estimated decrease in timber sales receipts of \$56 million from fiscal year 1992 through fiscal year 1996.³³

³⁰Rangeland Management: Current Formula Keeps Grazing Fees Low (GAO/RCED-91-185BR, June 11, 1991).

³¹Under the act, Alaska receives 90 percent of the receipts and the remaining 10 percent is deposited in the Treasury's General Fund.

³²Minerals Management: Costs for Onshore Minerals Leasing Programs in Three States (GAO/RCED-97-31, Feb. 27, 1997).

³³Forest Service: Factors Affecting Bids on Timber Sales (GAO/RCED-97-175R, June 17, 1997).

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- In December 1996, we reported that, in many instances, the Forest Service has not obtained fair market fees for commercial activities on the national forests, including resort lodges, marinas, and guide services, or for special noncommercial uses, such as private recreational cabins and special group events. Fees for such activities are the second largest generator of revenue for the agency, after timber sales. The Forest Service’s fee system, which sets fees for most commercial uses other than ski operations, had not been updated for nearly 30 years and generally limited fees to less than 3 percent of a permittee’s gross revenue. In comparison, fees for similar commercial uses of nearby state-held lands averaged 5 to 15 percent of a permittee’s total revenue.³⁴
- In December 1996, we also reported that although the Forest Service had been authorized to recover the costs incurred in reviewing and processing all types of special-use permit applications since as far back as 1952, it had not done so. On the basis of information provided by the agency, we estimated that in 1994 the costs to review and process special-use permits were about \$13 million.
- In April 1996, we reported that the Forest Service’s fees for rights-of-way for oil and gas pipelines, power lines, and communications lines frequently did not reflect fair market value. Agency officials estimated that in many cases—particularly in high-value areas near major cities—the Forest Service may have been charging as little as 10 percent of the fair market value.³⁵

The Forest Service has been aware for some time of the need to improve its efforts to obtain fair market value for goods or recover costs for services. However, it has studied and restudied issues without reaching closure. For example, in 1987 and 1995, the agency developed draft regulations that, if enacted, would have allowed forest managers to recover the costs incurred in reviewing and processing special-use permit applications. However, the draft regulations were never finalized or published because, according to Forest Service headquarters officials, the staff resources assigned to develop and publish the regulations were diverted to other higher-priority tasks.³⁶

³⁴U.S. Forest Service: Fees for Recreation Special-Use Permits Do Not Reflect Fair Market Value (GAO/RCED-97-16, Dec. 20, 1996).

³⁵U.S. Forest Service: Fee System for Rights-of-Way Program Needs Revision (GAO/RCED-96-84, Apr. 22, 1996).

³⁶U.S. Forest Service: Fees for Recreation Special-Use Permits Do Not Reflect Fair Market Value (GAO/RCED-97-16, Dec. 20, 1996).

The Forest Service Has Not Acted to Contain Costs

The Forest Service has not always acted to contain costs, even when requested to do so by the Congress. Instead, consistent with its tendency to study and restudy issues without reaching closure, the agency has not established a clear sequence or schedule to improve its performance.

Studies comparing federal and state costs to manage programs such as timber and leasable minerals³⁷ have been frustrated by significant differences in legislative and regulatory requirements and guidance, types of lands managed, and funding sources.³⁸ However, reviews of the Forest Service's internal processes and procedures, as well as comparisons with the Bureau of Land Management's operations, have identified opportunities to improve operational efficiency at virtually every organizational level within the Forest Service. For example, in April 1997 we reported that, according to an internal agency report, inefficiencies within the Forest Service's decision-making process cost up to \$100 million a year at the individual project level alone³⁹ and that delays in finalizing forest plans, coupled with delays in finalizing agencywide regulations and in reaching decisions for individual projects, can total a decade or longer.⁴⁰

The process used by the Forest Service to revise the land management plan for the Tongass National Forest in southeastern Alaska illustrates the results of the agency's not being held accountable for making timely, orderly, and cost-effective decisions. The Forest Service originally planned to spend 3 years revising the plan. At the end of 3 years, the agency had spent about \$4 million. However, the Forest Service spent another 7 years and \$9 million revising the plan.⁴¹

Approved forest plans sometimes do not satisfy the requirements of environmental and planning laws. For example, from October 1992 through June 1996, the Forest Service paid almost \$6.5 million in claims for timber sales contracts that were suspended or canceled to protect

³⁷Leasable minerals include oil and gas, coal, geothermal steam, sodium, trona, and potash.

³⁸See, for example, Minerals Management: Costs for Onshore Minerals Leasing Programs in Three States (GAO/RCED-97-31, Feb. 27, 1997) and Public Timber: Federal and State Programs Differ Significantly in Pacific Northwest (GAO/RCED-96-108, May 23, 1996).

³⁹Forest Service Decision-Making: A Framework for Improving Performance (GAO/RCED-97-71, Apr. 29, 1997).

⁴⁰Tongass National Forest: Lack of Accountability for Time and Costs Has Delayed Forest Plan Revision (GAO/T-RCED-97-153, Apr. 29, 1997).

⁴¹Tongass National Forest: Lack of Accountability for Time and Costs Has Delayed Forest Plan Revision (GAO/T-RCED-97-153, Apr. 29, 1997).

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endangered or threatened species. As of October 1996, the agency had pending claims with potential damages of about \$61 million, and it could incur at least an additional \$198 million in damages. Some of the contracts were suspended or canceled because the Forest Service had not developed plans that satisfied environmental and planning requirements.⁴²

Moreover, although the Bureau of Land Management had repeatedly revised its timber sales contract to minimize its liability when it must suspend or cancel a timber sales contract to protect threatened or endangered species, the Forest Service had not. Since the late 1980s, the Forest Service had been developing new regulations and a new timber sales contract that would limit the government's liability on canceled timber sales contracts and redistribute the risk between the agency and the purchaser. However, the Forest Service had not finalized either the regulations or the contract, and agency officials believe that additional congressional appropriations may be required to help pay for pending and future claims.⁴³

Similarly, the Forest Service could incur significant costs because the Eldorado National Forest in northern California failed to comply with the requirements of planning and environmental laws. Forest officials decided to proceed with a number of timber sales on the basis of cursory, out-of-date environmental assessments that did not adequately analyze the sales' potential effects on fish, wildlife, plants, cultural resources, and water quality and did not consider significant new information, as required under regulations implementing the National Environmental Policy Act. The contracts that were awarded have since been suspended. As a result, the Forest Service could incur \$30 million in potential damages.

Concerned with the escalating costs of the Forest Service's timber program, the Congress, in fiscal year 1991, asked the agency to develop a multiyear program to reduce the costs of its timber program by not less than 5 percent per year.⁴⁴ However, in April 1997, the Forest Service was preparing to undertake the third major examination of its timber program in the last 4 years. Meanwhile, the costs associated with preparing and administering timber sales remain significantly higher than in fiscal year 1991. (See fig. 3.7.)

⁴²Timber Management: Opportunities to Limit Future Liability for Suspended or Canceled Timber Sale Contracts (GAO/RCED-97-14, Oct. 31, 1996).

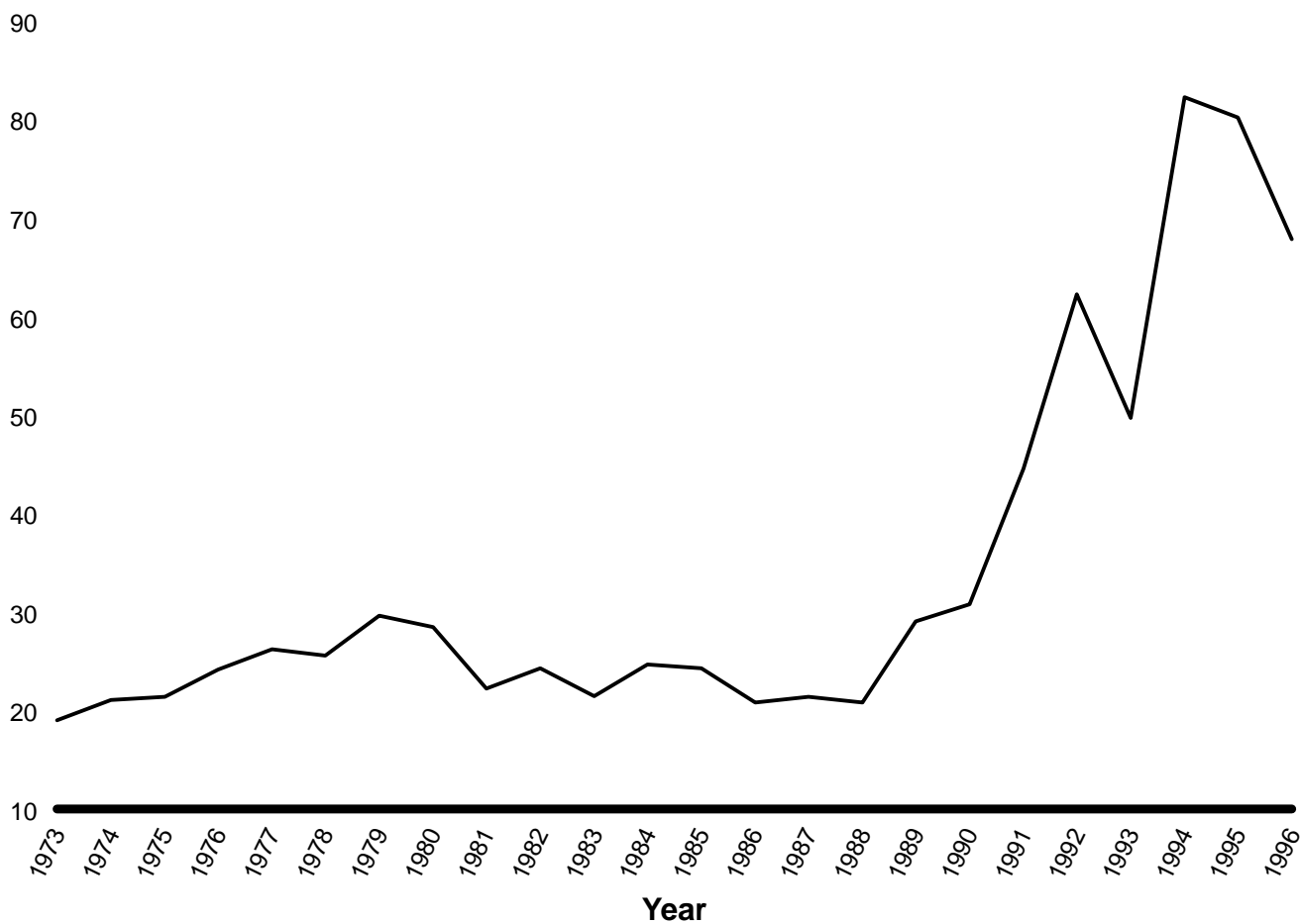
⁴³Timber Management: Opportunities to Limit Future Liability for Suspended or Canceled Timber Sale Contracts (GAO/RCED-97-14, Oct. 31, 1996).

⁴⁴Forest Service: Status of Efforts to Achieve Cost Efficiency (GAO/RCED-94-185FS, Apr. 26, 1994).

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Figure 3.7: Costs to Undertake Timber Sales, 1973-96

Cost per thousand board feet (in constant 1994 dollars)



Source: Forest Service.

Similarly, in mid-1996, the Forest Service began a study to streamline its commercial and noncommercial recreation special-use permit process. However, similar attempts to improve the process had been made in prior years but had met with little success. For example, a National Task Force on Special-Use Management, done in 1993 and 1994, addressed issues

similar to the Forest Service's streamlining effort. The task force identified numerous problems with the program and suggested ways to streamline the permit process and make the program more consistent throughout the agency. But none of the task force's recommended actions were adopted by the agency.⁴⁵

These and other findings led us to conclude in July 1997⁴⁶ that inefficiency and waste within the Forest Service have cost taxpayers hundreds of millions of dollars and that opportunities for economic gains have been lost through indecision and delay. We noted that past efforts by the Forest Service to change its behavior have not been successful and that decision-making within the agency is broken and in need of repair.

The Forest Service Is Not Held Accountable for Increasing Revenue or Decreasing Costs

The Forest Service has not obtained fair market value for goods, recovered costs for services, or improved operational efficiency because it has not been held accountable for increasing revenue or decreasing costs. Holding it accountable would require measuring its performance against revenue-generating and cost-reducing goals and objectives. However, the Forest Service's September 30, 1997, strategic plan, developed to comply with the requirements of the Government Performance and Results Act of 1993 (Results Act), contains no goals or performance measures for obtaining fair market value or for reducing or containing costs.

In 1994, we suggested that obtaining a better return for the sale or use of natural resources on federal lands and finding ways to reduce costs should be considered in developing a strategy to reform the Forest Service and that the agency would need to work closely with the Congress to accomplish these objectives.⁴⁷ In our April 1997 report on the Forest Service's decision-making⁴⁸ and our July 1997 testimony on the Forest Service's implementation of the Results Act,⁴⁹ we noted the act requires every executive department and agency to develop a strategic plan that

⁴⁵U.S. Forest Service: Fees for Recreation Special-Use Permits Do Not Reflect Fair Market Value (GAO/RCED-97-16, Dec. 20, 1996).

⁴⁶The Results Act: Observations on the Forest Service's May 1997 Draft Plan (GAO/T-RCED-97-223, July 31, 1997).

⁴⁷Forest Service Management: Issues to Be Considered in Developing a New Stewardship Strategy (GAO/T-RCED-94-116, Feb. 1, 1994).

⁴⁸Forest Service Decision-Making: A Framework for Improving Performance (GAO/RCED-97-71, Apr. 29, 1997).

⁴⁹The Results Act: Observations on the Forest Service's May 1997 Draft Plan (GAO/T-RCED-97-223, July 31, 1997).

includes long-term general goals and objectives—or strategic goals—that form the foundation for holding it accountable for its performance.

The Department of Agriculture submitted its first strategic plan—which included a strategic plan for the Forest Service—to the Office of Management and Budget and the Congress on September 30, 1997, as the act required. The Forest Service’s strategic plan contains no goals or performance measures for generating revenue or reducing costs. For instance, the plan’s objective for recreation does not identify a performance measure for obtaining a fair return for commercial and noncommercial recreation special-use permits. In addition, although the plan says that the agency intends to ensure that “taxpayers receive a fair return for the use and sale of wood fiber” from national forests, it does not identify any performance measures that could be used to hold the agency accountable for obtaining a fair return for timber and other forest products.

Holding a public agency accountable for increasing revenue or decreasing costs from the sale or use of natural resources is not without precedent. As noted in chapter 2, Washington State’s Department of Natural Resources is looking at its current and possible future mix of assets to determine which mix will best generate long-term revenue for its trust beneficiaries. As part of this effort, the department plans to (1) set standards for evaluating the mix of assets on the basis of their profitability, biological diversity, carrying capacity, and overall positioning and (2) develop measurement tools to monitor the trust assets’ ecological, social, and economic performance.

Conclusions

Among the Forest Service’s mission priorities, generating revenue and reducing costs rank below both protecting resources and providing goods and services. Efforts by the Forest Service to implement approaches and techniques to increase revenue or decrease costs—similar to many of the approaches and techniques being employed by the nonfederal land managers whose efforts we reviewed—would face a formidable array of statutory, regulatory, and other barriers. These barriers—which limit the Forest Service’s ability to move toward financial self-sufficiency and limit managers’ flexibility to make choices—include (1) language in federal statutes implying that maximizing revenue should not be the overriding criterion in managing the national forests, (2) requirements in environmental and planning laws necessitating a shift in the Forest Service’s management emphasis to uses that do not generate revenue,

(3) legislative and administrative decisions setting aside an increasing percentage of Forest Service lands for conservation, (4) requirements that the agency continue to provide certain goods and services at less than their fair market value, and (5) disincentives embedded in laws and congressional expectations.

Although the Forest Service's ability to generate revenue or recover costs is limited, the Congress has provided the agency with the authority to obtain fair market value for certain goods or recover costs for certain services. However, the Forest Service often has not done so, nor has it always acted to contain costs, even when requested to do so by the Congress. Underlying these shortcomings is the failure to hold the agency adequately accountable for its performance for increasing revenue or decreasing costs. Revising the strategic plan that it developed to comply with the requirements of the Results Act to include goals and performance measures for obtaining fair market value and for reducing or containing costs would provide the necessary first step for holding the Forest Service accountable for its performance.

Matter for Congressional Consideration

If the Congress believes that increasing revenue or decreasing costs from the sale or use of natural resources should be mission priorities for the Forest Service, it will need to work with the agency to identify legislative and other changes that are needed to clarify or modify the Congress's intent and expectations for revenue generation relative to ecological, social, and other values and concerns.

Recommendation to the Secretary of Agriculture

Because the Forest Service has not exercised its authority to obtain fair market value for certain goods and to recover costs for certain services and has not always acted to contain costs, even when requested to do so by the Congress, we recommend that the Secretary of Agriculture direct the Chief of the Forest Service to revise the strategic plan that the agency developed to comply with the requirements of the Results Act to include goals and performance measures for obtaining fair market value for goods, recovering costs for services, and containing expenses as the necessary first step in holding the Forest Service accountable for its performance.

Agency Comments

We provided copies of a draft of this report to the Forest Service for its review and comment. The agency's comments appear in appendix IX. The Forest Service (1) agreed with the report's conclusions and

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recommendations, (2) stated that the report fairly presents relevant factors that must be understood when comparing land managers or land management within different time periods, and (3) noted that it has made some progress in increasing revenue and improving financial accountability. We revised the report to recognize that the agency is employing some of the approaches and techniques used by the nonfederal land managers to increase revenue and has reduced staffing.

Revenue-Generating Programs and Activities, by Case Study

Revenue-generating programs and activities

Case study	Timber	Outdoor recreation	Wildlife and fish	Rangeland	Subsurface resources	Other
Washington State Department of Natural Resources' trust lands and programs	Timber sales Sales of special forest products, such as floral and Christmas greens			Livestock grazing leases	Mining leases	Agricultural cropland, orchards, and vineyards Agricultural, aquatic, and commercial permits and leases
White Mountain Apache Tribe's Fort Apache Indian Reservation	Timber processing Sales of timber, lumber, and wood products	Permits for camping and outdoor recreation, boating, and river rafting A ski resort	Permits for hunting trophy elk and other big and small game, fishing, and renting a lake	Cattle sales		A casino and other businesses
Texas Parks and Wildlife Department's Parks Division		Fees for camping, park entry, and interpretative services				Retail stores Park-leased soft drink machines
Church of Jesus Christ of Latter-day Saints' Deseret Land and Livestock ranch			Guided and unguided hunting for elk, deer, moose, and antelope Fly fishing	Cattle sales Sheep grazing leases		Lease for gas pipeline right-of-way
The Nature Conservancy's Niobrara Valley Preserve	Wood product sales		Hunting for deer and turkey	Cattle grazing leases Bison sales		Donations
National Audubon Society's Paul J. Rainey Wildlife Sanctuary				Cattle grazing leases	Natural gas production	Donations
International Paper's Southlands Experiment Forest	Timber sales		Five types of hunting and fishing arrangements			Agricultural leases

The Washington State Department of Natural Resources' Trust Lands and Programs Highlights

- The mission of the Washington State Department of Natural Resources (DNR) is to (1) generate long-term sustainable revenue for designated public trust beneficiaries and (2) ensure healthy resources so future generations of beneficiaries and residents will enjoy the benefits that the state's residents enjoy today. DNR must also comply with a state multiple-use law on state trust lands; however, these uses must be compatible with the agency's obligation to generate revenue for the trust beneficiaries.
- DNR's lands and programs are divided between a proprietary side and a regulatory side to accomplish the department's mission. Proprietary programs are managed primarily to generate long-term sustainable revenue for the trust beneficiaries on lands granted to the state at statehood or acquired under forest board statutes of the 1920s and 1930s.¹ Regulatory programs are managed to meet regulatory objectives for the protection of public resources and include forest fire prevention and suppression, forest practices such as timber harvesting, and surface mining.
- Because state trust lands are expected to generate revenue, the department has developed several programs to (1) transfer, sell, or exchange some trust lands that have a limited potential for generating revenue or are more suited for conservation or non-revenue-generating recreation and (2) purchase or otherwise acquire replacement lands capable of generating revenue. Under these programs, between 1981 and 1994, DNR repositioned 355,000 acres, or 11 percent of its land base, including transferring about 59,000 acres from commodity production to conservation status. The state legislature provided funds to DNR as compensation in accordance with the trust mandate requiring fair market value for products or lands that are sold.
- DNR's proprietary side is funded from gross revenue and generates considerable net income for the trust beneficiaries, primarily from timber sales. DNR's regulatory side generates little revenue and is supported primarily by legislatively appropriated funds.
- Mandated to manage its trust lands for the long-term benefit of the trust beneficiaries, DNR has initiated efforts to increase revenue and reduce costs. The department has (1) entered into an agreement with two federal regulatory agencies to provide regulatory certainty and predictability to its

¹During this period, various state statutes authorized the agency to acquire tax delinquent logged-off lands for reforestation.

Appendix II
The Washington State Department of
Natural Resources' Trust Lands and
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revenue-generating timber program for the trust beneficiaries while meeting the requirements of the federal Endangered Species Act; (2) modified its timber program to increase net income, introducing the direct marketing of forest products to better control the timing and environmental impact of logging operations; and (3) shifted the emphasis within its agriculture program from livestock grazing, which generates relatively little revenue, to more profitable agricultural production.

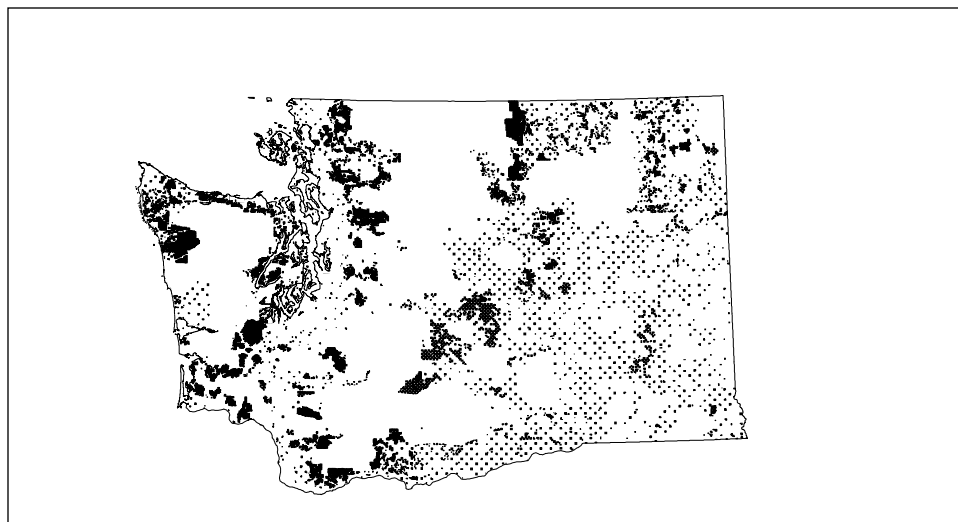
- Conversely, social, economic, ecological, and other values and concerns, such as federal legislation to limit the export of raw timber harvested on state lands and to protect species threatened with extinction, reduce net income from DNR's lands and programs.
- On its proprietary side, DNR is accountable primarily to its trust beneficiaries; however, trust lands also benefit the state's residents. On its regulatory side, DNR is accountable primarily to the state's residents and the state legislature.

Background and Goals

Created in 1957 to consolidate several land-management functions and resources, DNR manages more than 5 million acres of state lands. These lands include about 2.1 million acres of forestland, another 2.1 million acres of aquatic lands, 861,000 acres of rangeland (331,000 acres of which are forestland that is also used for grazing), and over 70,000 acres managed for resource conservation and preservation, as well as 141 recreation sites and 400 miles of maintained trails. (See fig. II.1.) DNR's overall mission is to "generate long-term sustainable revenue for designated public trust beneficiaries and assure healthy resources so future generations of beneficiaries and residents will enjoy the benefits that [the state's residents] enjoy today."

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The Washington State Department of
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Figure II.1: Location of DNR's Lands Within the State of Washington



DNR's lands and programs are divided between a proprietary side and a regulatory side. The proprietary side includes about 2.9 million acres of land that DNR manages in trust, primarily for the long-term benefit of the trust beneficiaries.² Revenue-generating programs include the sale of valuable materials, such as timber, and the leasing of lands to others for agriculture, aquaculture, mining, and commercial uses. Regulatory programs carry out state regulations governing surface mining, forest management, and forest fire prevention and suppression. These statewide regulations apply to state and private lands and directly affect 12 million acres of forested nonfederal lands in the state. The department can penalize state and private landowners for violating the regulations as well as charge them for the costs of repairing the damages.

As required by the 1889 Enabling Act, which granted federal lands to the new state; the state of Washington's Constitution; and subsequent legal decisions, DNR (acting as the trustee) must fulfill the fiduciary responsibility of the state to its residents by (1) managing trust lands for the primary benefit of the trust beneficiaries, including state schools, state colleges and universities, local services in many counties, prisons, public buildings at the state capitol, and other public agencies and charitable institutions within the state; (2) holding all trust lands for all of the state's residents and not selling, transferring, or using the lands for less than their

²Our analysis was limited primarily to DNR's trust lands and to three programs—timber, special forest products, and agriculture. We did not review mining leases or agricultural, aquatic, and commercial permits and leases.

fair market value; and (3) acting with undivided loyalty and prudence toward the trust beneficiaries to the exclusion of all others, including timber purchasers. DNR must also comply with a state multiple-use law. However, multiple uses will be provided only to the extent that they are compatible with the agency's obligations to generate revenue for the trust beneficiaries. DNR officials said that the agency expends a great deal of energy to create compatibility between multiple-use and revenue-generating activities.

Although DNR's lands and programs are divided between a proprietary side and a regulatory side, the department's field staff work on both regulatory and proprietary programs. For example, a district forester may prepare a timber sale one day (a proprietary program activity) and enforce a surface mining regulation on private land the next day (a regulatory program activity). DNR also has specialists in areas such as surface mining, farm forestry (providing technical assistance to private forest landowners), geology, and fish and wildlife management. In addition, DNR field staff are often trained in several areas. For instance, most field staff are trained to fight fires.

Revenue Generation and Financial Self-Sufficiency

DNR's proprietary and regulatory sides consume about 65 percent and 35 percent, respectively, of the department's resources. DNR's proprietary side is funded from gross revenue and also generates considerable net income for the trust beneficiaries. For example, in fiscal year 1996, proprietary programs generated \$311 million, or 92 percent, of the department's \$337 million in gross revenue. Therefore, 65 percent of DNR's staff and resources generated 92 percent of DNR's revenue.

In contrast, DNR's regulatory side generates little revenue (8 percent of the department's gross revenue in fiscal year 1996) and is supported primarily by legislatively appropriated funds. In addition, regulatory programs receive about 1.5 percent of their funding from a share of the state's gasoline sales taxes. Other sources of revenue include forest fire protection assessments paid by state and private landowners, sales from the state forest nursery, and nominal revenue from federal grants. (See table II.1.)

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Table II.1: DNR's Revenue, Expenditures, and Net Income, Fiscal Years 1992-96

Dollars in millions					
DNR's programs ^a	Fiscal year				
	1992	1993	1994	1995	1996
Total revenue	\$235	\$269	\$194	\$277	\$337
Total expenditures	(\$115)	(\$114)	(\$101)	(\$184)	(\$115)
Net income	\$120	\$155	\$93	\$93	\$222

^aIncludes all of DNR's regulatory and proprietary programs.

By state law, 75 percent of the revenue generated on lands originally granted to the state by the federal government is distributed to the state trust beneficiaries. The remaining 25 percent may be appropriated by the state legislature to DNR to administer revenue-generating programs on these trust lands.

Of the \$311 million generated by proprietary programs in fiscal year 1996, \$281 million (90 percent) was from timber sales and related activities. Agriculture and special forest products—the other programs included in our review—generated \$7.4 million and \$332,000, respectively, in fiscal year 1996. DNR's agricultural program includes not only a variety of crops, such as apples, grapes, and wheat, but also livestock grazing. The special forest products program includes floral and Christmas greens, mushrooms, medicinals, firewood, and at least 200 other specialty forest products. Revenue from both programs has been increasing yearly and is expected to continue to do so. (See table II.2.)

Table II.2: DNR's Revenue From Timber, Agriculture, and Special Forest Products

Dollars in thousands					
Program	Fiscal year				
	1992	1993	1994	1995	1996
Timber sales and timber-related activities	\$165,542	\$165,938	\$120,470	\$186,232	\$280,537
Agriculture	\$4,840	\$5,424	\$6,907	\$5,725	\$7,400
Special forest products	^a	^a	\$149	\$213	\$332

^aNot available.

**Efforts to Increase
Revenue or Reduce Costs**

Mandated to manage its proprietary lands for the long-term benefit of the public trust beneficiaries, DNR has initiated efforts to increase revenue and reduce costs.

**Optimizing the Highest and
Best Land Uses**

At statehood, the state became entitled to certain federal lands within its borders. When it took title to these lands, more productive federal lands had already been granted to private owners. As a result, in parts of the east side of the state, the state lands form a checkerboard of drylands suitable only for livestock grazing. Because lands on DNR's proprietary side are expected to generate revenue and livestock grazing generates little revenue, the department has developed several programs to (1) transfer, sell, or exchange some of these and other trust lands that generate little revenue or are more suited to conservation or recreation and (2) purchase or otherwise acquire replacement lands capable of generating more revenue. As a result, between 1981 and 1994, DNR repositioned 355,000 acres, or 11 percent of its land base. Agency officials told us that livestock grazing lands are an important part of the diverse trust land base, but the conversion of some of these lands to higher and better uses helps to diversify trust land assets.

Moreover, agency officials told us that as opportunities become available, they attempt to optimize short- and long-term income within acceptable levels of risk by shifting to the highest and best land uses in selected geographic areas. For instance, during the past 25 years, DNR has converted more than 34,000 acres of shrub steppe drylands to higher-revenue-producing lands. Some of these lands have been leased competitively for commercial uses, raising revenue significantly. In addition, DNR has significantly changed the makeup of its agricultural lands portfolio within central Washington by converting many acres from less profitable livestock grazing to more profitable agricultural uses, such as growing dryland grains, especially wheat. It has also converted many acres of shrub steppe drylands to irrigated farm lands, grape vineyards, and apple orchards by (1) developing irrigation infrastructures (drilling wells and laying pipes), (2) obtaining and continuing to pursue water rights in the state's water and irrigation districts as well as other surface water and groundwater irrigation rights, and (3) contracting for water from the federal Columbia Basin Irrigation Project.

Through these efforts, the revenue from DNR's agricultural program has increased by nearly 200 percent in the last 15 years. DNR is developing an Asset Stewardship Plan—a long-term land management strategy—that will include a detailed inventory of its lands, their current status, and their

future potential. This inventory will help determine the future mix of lands in DNR's portfolio.

**Providing More Regulatory
Certainty and Predictability**

DNR has also entered into an agreement with two federal regulatory agencies—the Department of the Interior's Fish and Wildlife Service and the Department of Commerce's National Marine Fisheries Service—to provide regulatory certainty and predictability to its revenue-generating timber program. A habitat conservation plan, signed in January 1997, covers 1.6 million acres, or 76 percent of DNR's 2.1 million acres of forestland, and includes a "no surprise policy" under which the federal government (1) will not ask for more land or mitigation funding from the state even if a species protected by the plan continues to decline and (2) the subsequent listing of a species as endangered or threatened under the Endangered Species Act will not result in additional mitigation requirements.

**Increasing Revenue From
Timber Operations**

In addition, DNR has initiated several efforts intended to increase net income from its timber program. For example, it has increased timber revenue by identifying and marketing high-value trees, such as those that can be used as utility or transmission poles or as logs for the log home industry ("merchandising" timber). Since fiscal year 1990, this practice has generated about \$41 million in additional revenue at a cost of about \$2 million in staff salaries. In addition, DNR is performing both precommercial and commercial thinning, and, to a lesser extent, pruning and fertilizing timber stands to spur tree growth. In fiscal year 1996, tree sales resulting from commercial thinning generated some \$17 million in revenue.

DNR officials said they have also (1) increased the efficiency of the department's timber sale appraisal system by adopting an approach that looks only at prior comparable sales; (2) stopped reimbursing contractors for constructing timber roads, thus reducing the costs to monitor the roads' construction as well as avoiding the need to reimburse contractors for inefficient road construction practices; (3) initiated lump-sum bidding procedures under which all timber within a stand is sold, thereby lowering DNR's costs to monitor a bidder's removal of timber; (4) replaced oral bidding of timber sales with sealed bids to avoid artificially suppressing the highest bid value; and (5) pilot-tested a project to contract with a company to harvest timber and then directly market the logs. This last effort—called contract logging—has increased DNR's return by eliminating the "middle man" and allows DNR to better control the timing and environmental impact of logging operations.

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Reducing Overhead Costs

Administratively, DNR has reduced its costs by allowing most field staff to work out of their vehicles and to travel only occasionally to small local work centers or trailers to complete needed paperwork or to access databases or other reference materials. Administrative support, records, and other activities are primarily available in DNR's seven regional offices located throughout the state, as are heavy equipment and other supplies that may be needed by field personnel.

Values and Concerns That Reduce Net Income From DNR's Lands

DNR is mandated to manage its proprietary lands and programs for the long-term benefit of its trust beneficiaries. However, social, economic, environmental, and legal concerns often serve to reduce the net income from DNR's lands and programs.

Social Values

State statutes require that all leases be reevaluated and adjusted every 5 years and be advertised for competitive bids when they expire. Formerly, according to DNR officials, it was not uncommon for grazing leases to be bid and held by the same lessee for many years. However, DNR's livestock grazing program and rangelands often operate at a financial loss, in part because, for the previously discussed historical reasons, the lands are not adjacent to one another. Additional environmental requirements have also increased costs. The depressed selling price of beef cattle has further shrunk the profit margins of many small family ranchers, who have expressed concern about losing their way of life. While DNR might generate more revenue by converting more acres from livestock grazing to agricultural uses, preserving small family ranches has become a political, as well as a financial, issue.

Economic Concerns

In response to regional economic concerns, a 1990 federal law prohibited the export of 75 percent of the raw timber harvested on state lands, beginning in January 1991. In 1993, the Congress extended this restriction to 100 percent of the raw logs harvested on state lands. These restrictions have reduced the revenue to DNR's trust beneficiaries by \$90 million annually, according to DNR's estimates—or by a total of \$350 million since the log export ban began.

Environmental Concerns

Environmental concerns, reflected in the requirements of federal and state environmental laws and their judicial interpretations, have also reduced net income from DNR's lands and programs. Federal and state laws and regulations protecting resources—such as endangered and threatened species, water and air quality, and biological diversity—dictate where and how often timber and other resources can be harvested. Such

requirements also affect the amount of revenue that can be generated from forestland. For example, the 1990 listing of the northern spotted owl and the 1993 listing of the marbled murrelet under the federal Endangered Species Act caused DNR to postpone or halt planned timber sales and to repurchase timber previously sold. DNR responded in 1997 by signing the habitat conservation plan to improve regulatory certainty.

Similarly, state environmental mandates, such as a 1993 law (H.B. 1309) requiring DNR to incorporate environmental standards into all state agricultural leases, have reduced the net income from DNR's lands and programs. DNR officials told us that these mandates are often costly to implement, requiring additional staff with expertise in rangeland management and long-term monitoring. They said that the costs of implementation often exceed the revenue produced on marginally productive rangelands, yet the environmental mandates serve to maintain the long-term health of these lands, including their ability to continue generating revenue.

Liability Concerns

Finally, DNR manages recreation as a non-revenue-generating program and maintains fairly primitive and undeveloped sites on most of its lands because of concerns about liability under a state law that makes the department liable for injuries and accidents that occur on lands where fees are charged for recreational access or uses. However, according to an internal DNR study, without funding for increased infrastructure investment and land management, the contribution of DNR-managed conservation areas to the state's ecotourist economy will diminish. The study suggests initiating fees and charges for recreational uses on DNR's lands and using the revenue to protect and enhance the quality of the resource as well as to support necessary infrastructure investments.

Environmental Management and Protection

In addition to generating long-term sustainable revenue for designated beneficiaries of the public trust, DNR is also charged with ensuring healthy resources so that future generations of beneficiaries and residents will enjoy the benefits that the state's residents enjoy today. DNR emphasizes conserving natural resources while generating long-term sustainable revenue not only to meet today's federal and state environmental laws and regulations but also to help ensure the availability of future opportunities and revenue.

DNR's attention to environmental management and protection is reflected in the department's strategic planning process for managing state trust

forestlands. This process integrates the needs of up to 10 different natural resources with resource commodity uses, such as timber harvesting. Under the process, DNR first identifies a desired future condition for the different natural resources, then describes the planning concepts needed, and finally identifies the general guidelines to be followed to achieve the desired condition over a 10-year period.

According to DNR's policy plan for managing forest resources, the forests that the department manages for income also exist as complex natural ecosystems—a perspective that guides DNR's efforts to protect forest health, wildlife habitat, and aquatic systems. The policy also states that the department will manage its diverse forestlands at different levels of intensity, depending on their biological productivity and economic potential, and that it will reduce the impact of timber clear-cutting by limiting harvest areas to fewer than 100 acres and by providing green buffers along streams in sensitive watersheds. Similarly, DNR's policy plan for managing agricultural and grazing lands includes as one of its key policies to provide environmental protection through the site-specific application of current technology and compliance with environmental laws.

DNR also points to the January 1997 habitat conservation plan as an attempt to generate income from trust lands over the long-term while protecting the environment and wildlife habitat. The plan provides at least 70 years of protection for existing and future endangered species, such as the northern spotted owl, while also protecting streams and habitat critical to the survival of other at-risk fish and wildlife species. Moreover, since 1989, DNR has transferred about 59,000 acres from commodity production to conservation status.

Some environmental groups have expressed concern that DNR's habitat conservation plan emphasizes commodity production over habitat protection. Conversely, some beneficiaries of DNR's trust lands have expressed concern that the plan goes too far in conserving habitat and in limiting revenue-generating activities, especially timber harvesting.

Accountability for Results

DNR is accountable primarily to the state's residents and the state legislature. On its proprietary side, DNR is primarily accountable to the beneficiaries of its public trust. The Board of Natural Resources, the final decision-making authority for the agency, approves departmental policies and plans for state trust lands and reviews all timber sales. The board is

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composed of representatives of the trust beneficiaries. Given this composition, a DNR official said, the board provides a check-and-balance to departmental policies and initiatives. In addition, the Commissioner of Public Lands, who heads DNR, is an elected official, so accountability is inherent in the position.

According to DNR officials, accountability for performance and results begs the questions of to whom, for what, and for how long. DNR's overall mission—to “generate long-term sustainable revenue for designated public trust beneficiaries and assure healthy resources so future generations of beneficiaries and residents will enjoy the benefits that [the state's residents] enjoy today”—includes two potential conflicts—first, between generating revenue and ensuring environmental quality, and second, between current and future generations of beneficiaries and residents. Moreover, as previously discussed, social, economic, environmental, and legal concerns reduce the net income from DNR's lands and programs. Other actions and events, such as Initiative 601 (which limits state tax increases to no more than the rate of inflation), have caused colleges and school districts to seek additional revenue from other sources, including the resources that DNR manages.

To assist in decision-making, DNR applies certain principles, such as the “prudent person doctrine,” which requires the department to exercise skill and care in protecting trust resources; “intergenerational equity,” which requires DNR to strive to manage trust lands and programs to ensure equal treatment for all generations; and “not foreclosing future options,” which requires DNR to manage trust assets so that reasonably foreseeable future sources of income are not forgone by actions taken today. Each of these principles may reduce current income and return on investment over the short term but may be viewed as the most prudent course over the long term.

DNR also has two efforts under way that address accountability. The first is its Asset Stewardship Program, which is to look at the department's current and possible future mix of assets to determine which mix will best generate long-term revenue for the trust beneficiaries. As part of this effort, the department plans to (1) set standards for evaluating the asset mix on the basis of its profitability, biological diversity, carrying capacity, and overall positioning of assets and (2) develop measurement tools to monitor the trust assets' ecological, social, and economic performance. DNR hopes to develop a longer-term management framework that will give

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its managers flexibility to respond to future population and other changes that affect the management of state lands and programs.

The second effort is DNR's March 1997 long-term strategic plan—the "10-Year Direction"—which, among other things, sets out major goals, objectives, and specific strategies to achieve them. According to DNR officials, the plan (1) will be consistent with a statewide performance budgeting system now being developed and (2) parallels the Asset Stewardship Plan by identifying specific targets for managing various trust assets.

The White Mountain Apache Tribe's Fort Apache Indian Reservation

Highlights

- The White Mountain Apache Tribe manages its lands and resources to generate tribal revenue and increase tribal employment while protecting the environment, including wildlife and their habitat, and maintaining cultural and aesthetic values.
- Although the tribe has been fairly successful in developing, managing, and operating some of its business enterprises, it is still financially dependent on the federal government, which has a trust responsibility to help manage and protect Indian forestland. In some years, costs have exceeded the revenue generated from the tribe's natural resources, especially when the federal appropriated funds that were used to supplement tribal funds are considered.
- The tribe has imposed social and ecological values on the management of its forests and ecosystems. These values have reduced the revenue from the tribe's timber and recreational hunting enterprises. For example, unemployment on the reservation approaches 40 percent; therefore, the tribe places a high priority on tribal employment and has been willing to use labor-intensive technologies, rather than more efficient capital-intensive technologies, in its timber operations in return for lower unemployment.
- Environmental concerns have also reduced revenue from the tribe's commercial timberlands. To help ensure sustained yield and to preserve its forests and ecosystems for future generations, the tribe reduced its annual timber harvest level over the past several years by about 40 percent. The tribe expects to reduce the annual harvest level even further to make it more compatible with annual tree growth. Revenue from other tribal enterprises and activities, particularly casino gaming, has helped to mitigate the impact of the reduction in timber revenue.
- Amenity-based recreation—such as hunting, fishing, hiking, camping, boating, river rafting, and snow skiing—is increasing and provides a relatively stable source of revenue by attracting a steady flow of tourists.
- The tribe manages a vertically integrated forest products enterprise that operates two sawmills; a remanufacturing plant to more effectively use the sawmills' low-grade lumber; and a retail center that sells lumber, wood, and hardware products.
- To provide more regulatory certainty and predictability to its revenue-generating timber program as well as to reduce its costs, the tribe

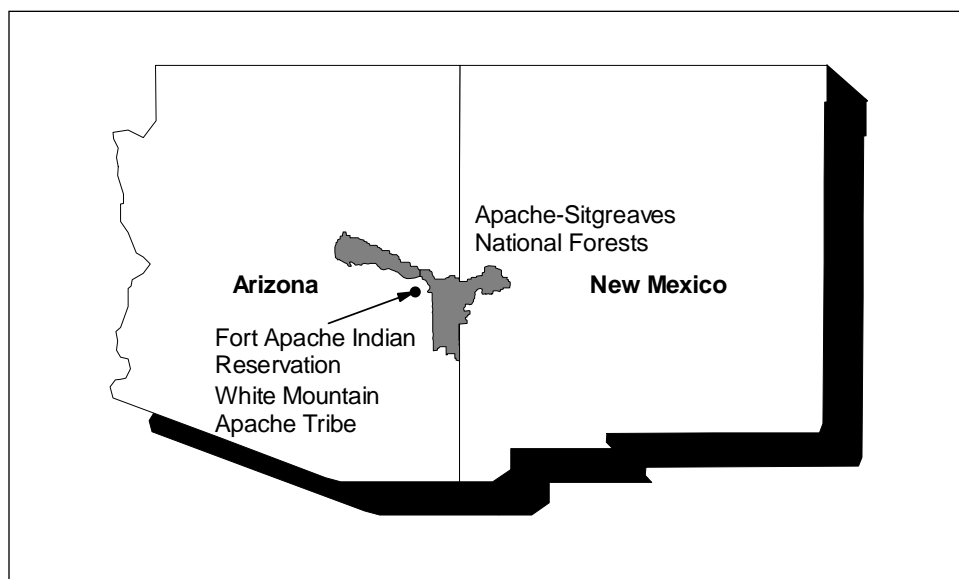
**Appendix III
The White Mountain Apache Tribe's Fort
Apache Indian Reservation**

has assumed responsibility for accommodating the objectives of federal environmental laws, especially the Endangered Species Act, from federal regulatory agencies. The tribe focuses on maintaining healthy ecosystems rather than designating critical habitat for threatened and endangered species.

**Background and
Goals**

The Fort Apache Indian Reservation, home of the White Mountain Apache Tribe, was established in June 1897. The reservation is located in east central Arizona. It is about 75 miles long and 45 miles wide and encompasses more than 1.6 million acres. About 1.1 million acres are forests, high alpine areas, and woodlands. The remaining acres include rangelands, grasslands, agricultural lands, and community areas. About 12,000 of the 14,500 people who live on the reservation are tribal members. (See fig. III.1.)

Figure III.1: Location of the Fort Apache Indian Reservation



The tribe manages its lands and resources to generate tribal revenue and increase tribal employment while protecting the environment, including wildlife and their habitat, and maintaining cultural and aesthetic values.

Revenue Generation and Financial Self-Sufficiency

According to tribal officials, the tribe is recognized as a national leader among Indian tribes in exercising its sovereignty for economic development, with its economy closely tied to its natural resource base. The tribe is working toward becoming more financially self-sufficient while maintaining its culture and traditions. According to the tribal planning staff, the tribe has been fairly successful in developing, managing, and operating some of its business enterprises. However, the tribe is still financially dependent on the federal government, and in some years costs have exceeded the revenue generated from the tribe's natural resources, especially when the federal appropriated funds that were used to supplement tribal funds are considered.

Tribal revenue and expenses have increased in recent years, primarily because of new or expanding tribal enterprises that attract increased tourism, such as a casino, a ski resort that includes 65 ski runs on three mountains, and a trailer park with over 120 sites for recreational vehicles. According to reports provided by the tribal treasurer, tribal revenue totaled about \$85.8 million for fiscal year 1996 and about \$96.5 million for fiscal year 1997, and tribal expenses totaled about \$89.7 million and \$87.9 million, respectively, for these 2 years. The tribe incurred a net loss of about \$3.9 million in fiscal year 1996 and achieved a net income of about \$8.6 million in fiscal year 1997. Federal appropriated funds that were used to supplement tribal funds for timber management and protection and fisheries management averaged about \$6.3 million each year. (See table III.1.)

Table III.1: the Fort Apache Indian Reservation's Revenue and Expenses and Federal Appropriated Funds, Fiscal Years 1996-97

Dollars in millions		
	Fiscal year 1996	Fiscal year 1997
Tribal revenue	\$85.8	\$96.5
Tribal expenses	(\$89.7)	(\$87.9)
Net tribal income/ (loss)	(\$3.9)	\$8.6
Federal appropriated funds	\$6.3	\$6.3

According to the reservation's current 10-year forest management plan, net tribal income averaged about \$6.9 million annually from fiscal year 1980 through fiscal year 1992, of which about \$6.1 million, or 88 percent, was realized from the sale of tribal timber and profits from forestry-related enterprises. However, only about 44 percent of the total revenue for fiscal year 1996 and about 54 percent of the total revenue for fiscal year 1997 were generated from timber sales and enterprises based on natural

resources.¹ The remaining 46 to 56 percent of the revenue was generated from other tribal enterprises and activities, such as the casino, a restaurant and motel, convenience markets that sell gasoline and groceries, and a shopping complex.

Timber Operations

The tribe has a thriving, vertically integrated forest products industry that continues to generate one-third or more of the tribe's gross annual revenue. The major source of income is the Fort Apache Timber Company, which is owned and managed by the tribe. Besides harvesting timber on the reservation's 800,000 acres of commercial timberlands (land that is producing or capable of producing crops of industrial wood), this enterprise operates two sawmills; a remanufacturing plant to more effectively use the sawmills' low-grade lumber; and a retail center that sells lumber, wood, and hardware. According to the tribal treasurer, net income from the tribe's timber operations totaled about \$1.5 million in fiscal year 1996 and \$8.5 million in fiscal year 1997. In addition, 13 percent of the proceeds that the company pays to the tribe from lumber sales is withheld to pay for constructing and maintaining the reservation's forest road system, and the balance is further reduced by a legislatively mandated 10-percent administrative fee deduction to help cover the federal costs related to timber sale preparation and administration, fire protection, forest development, and forest management inventories and planning on the tribe's forestlands.²

Since the early 1980s, the Department of the Interior's Bureau of Indian Affairs (BIA) has provided an average of about \$5.6 million a year to manage and protect the tribe's timber resource. According to BIA's current 10-year forest management plan, about \$1.8 million a year is spent on timber management activities, such as forest inventories, timber sales, reforestation, and timber stand improvement, and the remaining \$3.8 million is spent on resource protection, including fire and pest management. Tribal revenue from timber operations does not reflect these federal costs.

Outdoor Recreation

The reservation is rich in other natural resources, with 25 constructed fishing lakes and more than 420 miles of rivers and streams, as well as a

¹The tribe's fiscal year runs from May 1 to April 30.

²The National Indian Forest Resources Management Act (P.L. 101-630, Nov. 1990) clarified the authority of the Secretary of the Interior to make deductions from the proceeds of the sale of Indian forest products and to ensure that such deductions are used for forestland management activities on the reservation from which the proceeds are derived.

variety of wildlife, including elk, mule deer, white tailed deer, turkey, mountain lion, black bear, and other big and small game animals. Hunting, fishing, hiking, camping, boating, and river rafting provide a relatively stable source of revenue by attracting a steady flow of tourists. Overall, these amenity-based recreation activities generated annual revenue ranging from \$1.9 million to \$2.2 million in fiscal years 1995-97. Related tribal expenses, including the cost of 11 armed game wardens to enforce the tribe's hunting and fishing regulations, ranged from \$1.4 million to \$1.8 million, resulting in net annual income of \$361,000 to \$434,000. According to a tribal report covering the 12-year period from fiscal year 1984 through fiscal year 1995, the tribe achieved a net income from these activities during 8 years and incurred a net loss during 4 years. The annual net income ranged from \$115,000 to \$434,000, and the annual net loss ranged from \$29,000 to \$135,000. The last net loss was in fiscal year 1994. Tribal officials said that the last 3 fiscal years have been profitable because of changes in management and policy.

Recreational Hunting

The tribe manages its trophy elk and other wildlife on a sustainable basis and makes a substantial profit. The tribe hosts an annual internationally renowned trophy bull elk hunt, which by 1995 was generating more than \$850,000 in annual revenue. The tribe does not receive any direct federal funds to supplement its management of the elk, but it benefits indirectly from federal funds spent on forest management.

Before 1977, the state issued about 700 licenses a year, priced at \$150 each, for nontribal hunting on the reservation. Nontribal hunters were also required to obtain a tribal permit, but the tribe did not receive any of the revenue collected by the state. The license and permit entitled a hunter to shoot a bull elk of any size.

In 1977, the tribe informed the state that it would allow elk hunting without a state license and would control all hunting and fishing on the reservation. The state opposed this change, but a federal court ruled in favor of the tribe. The tribe reduced the hunting pressure on immature bulls by ending the general elk hunt and replacing it with the trophy bull elk hunt. The number of elk-hunting permits was reduced substantially, from 700 to 30, while the price per permit was increased from \$150 to \$1,500.

During 1995, the tribe issued 70 permits to hunt trophy elk—66 to nontribal hunters for \$12,000 each to participate in a 7-day hunt, and 4 to

nontribal hunters who paid an average of \$24,000 each through a special auction. Even with the \$12,000 fee, there is a 5-year waiting list of nontribal hunters. The tribe also issued 70 permits to nontribal hunters to hunt trophy elk in 1996 and intended to offer the same number in 1997. The reservation now supports about 12,000 free-ranging adult elk.

Other hunting opportunities are also offered to maintain the proper bull-to-cow ratio in the elk herd and to manage other wildlife species. For example, in 1997 the tribe intended to offer about 500 permits to nontribal hunters to hunt antlerless elk at prices ranging from \$100 to \$300. In addition, the tribe intended to charge nontribal hunters \$50 to hunt small game, \$1,500 to hunt spring gobblers, \$3,500 to hunt antelope, and \$40,000 to hunt one mature bighorn sheep. The tribe expected to issue only two antelope permits and one bighorn sheep permit to nontribal hunters in 1997. Permits for most big game species require that hunters be accompanied by a registered guide.

Recreational Fishing

Tribal fishing permits and recreational fisheries have recently generated about \$750,000 a year in gross revenue to the tribe. However, the Department of the Interior's Fish and Wildlife Service (FWS) spends about \$650,000 a year to supplement tribal funds for managing the reservation's recreational fisheries. About two-thirds of the fish from two FWS-operated hatcheries located on the reservation are used to stock the tribe's lakes and streams. The annual costs of producing, raising, transporting, and stocking the fish are paid with federal funds. Other related costs—for activities such as assessing stock, recommending where to stock the fish and how many to stock, and monitoring the water quality before and after stocking the fish—are also paid with federal funds. Therefore, the tribe's recreational fisheries would not be as profitable without federal funds.

Developed Recreation

The tribe's Sunrise Park Resort provides high-quality skiing to thousands of visitors a year. It includes trails established across three of the reservation's highest mountains and a ski lodge with dining and summertime recreational activities. According to tribal reports, ski operations and related services have generated from \$2.1 million to \$8.1 million in total annual revenue since 1984, but related tribal expenses exceeded the revenue in half of these years.

Other Outdoor Recreation

Tribal game and fish officials told us that camping permits generate about \$150,000 to \$175,000 a year in revenue and river running/white water rafting permits generate about \$140,000 to \$150,000 a year. The tribe also generates revenue from boating permits, outdoor recreation permits to travel on the reservation's unpaved roads, and fees for a rent-a-lake program under which the tribe will rent one of two entire lakes for \$300 a day to groups or individuals seeking an exclusive and totally private lake setting, for example, for family reunions, company picnics, or church meetings. The tribe also receives money from nontribal professional outfitters who pay to guide rafting, hunting, and fishing trips and other activities on the reservation.

Tribal game and fish officials said that the tribe is looking into additional ways of generating revenue from the use of its natural resources. The tribe would like to enhance the marketability of the resources by building toilet facilities at campgrounds and generally improving campsites, expanding rafting to other areas of the reservation, and providing horseback riding.

Livestock Grazing

In the past several decades, the reservation supported a large livestock industry consisting of more than 15,000 cattle. Tribal members estimate that the herd is now down to about 6,000 cows. An estimated 4,000 horses also graze on the reservation. Although livestock grazing is culturally important to some tribal members, it has become more of a hobby than a job, and active management of the herd is limited. Livestock grazing and cattle sales have not generated any net income for the tribe for years. The tribe also has an irrigated farm that produces alfalfa for feed and agricultural products for sale. According to tribal reports, these enterprises have incurred a net loss from their operations every year since 1984.

Efforts to Reduce Costs

To provide more regulatory certainty and predictability for its revenue-generating timber program and to reduce its costs, the tribe has assumed responsibility for accommodating the objectives of federal environmental laws, especially the Endangered Species Act, from FWS and other federal regulatory agencies.

In December 1994, the Chairman of the White Mountain Apache Tribe and the Director, FWS, signed an innovative statement of relationship between the tribe and FWS that recognizes the tribe as the primary manager of the reservation with the institutional ability to ensure that economic activity

does not adversely affect listed and sensitive wildlife and plants. It recognizes the tribe's aboriginal rights, sovereign authority, and demonstrated ability to manage and regulate the lands and resources on the reservation as the self-sustaining homeland of the White Mountain Apache people. The document recognizes FWS' technical expertise in fish, wildlife, and plants as a significant resource for the tribe's management of the ecosystems and associated listed and sensitive species on the reservation. The document also addresses the tribal management plans that are being developed to protect the ecosystems and resources and discusses communication and coordination between the tribe and FWS in resolving environmental issues of mutual concern.

In June 1997, the Secretary of the Interior signed an order that clarifies the responsibilities of the Department of the Interior when the implementation of the Endangered Species Act affects federally recognized Indian land, tribal trust resources, or the exercise of tribal rights. According to the order, the United States defers to tribal conservation management plans and agrees to (1) work directly with Indian tribes on a government-to-government basis to promote healthy ecosystems; (2) offer technical assistance to aid in tribal conservation; (3) be sensitive to Indian culture, religion, and spirituality; and (4) establish channels for tribes to resolve disputes through negotiation.

**Values and Concerns That
Reduce Net Income**

The tribe has imposed social and ecological values on the management of its forests that have reduced revenue from its timber and recreational hunting enterprises. For example, the tribe has been willing to use labor-intensive technologies and outdated equipment in its timber operations to reduce unemployment, which approaches 40 percent on the reservation. According to officials of the Fort Apache Timber Company, their two sawmills are old and outdated; however, the company employs about 300 tribal members at the mill sites and another 150 tribal members in the timber logging operations. The company plans to modernize its sawmills while pursuing the manufacture of other value-added products in order to maintain the current employment level. The company has also started logging dead spruce trees and marketing them as house logs. This effort is expected to net about \$700,000 annually in additional income.

Environmental concerns have also reduced revenue from the tribe's commercial timberlands. To help ensure sustained yield and preserve its forests for future generations, the tribe reduced its annual timber harvest level over the past several years from the maximum allowable cut of

92 million board feet per year determined by BIA to about 55 million board feet per year—a reduction of about 40 percent. The tribe expects to reduce the annual harvest level even further—possibly to as low as 40 million board feet per year—to make the harvest level more compatible with tree growth. According to the tribal chairman, the decision to substantially reduce the tribe's annual timber harvest level represented a tremendous financial sacrifice but demonstrated the firm intention of the tribe to preserve its forests for future generations. Tribal officials informed us, however, that revenue from the tribe's casino gaming, elk hunting, and ski operations has helped to make up for the reduced timber revenue.

Although the tribe charges nontribal hunters an average of \$24,000 to hunt trophy elk on the reservation and there is a 5-year waiting list, in 1997 the tribe intended to offer 25 permits to tribal members for \$100 each to hunt trophy elk in a designated unit of the forest. Furthermore, although nontribal hunters pay \$100 to \$300 to hunt antlerless elk, the tribe intended to offer 90 permits to tribal members for \$50 each to hunt bull elk in three designated zones. Tribal members pay \$2 for a general elk hunt permit, \$10 for a special season archery permit, and \$5 for a late-season antlerless elk permit. Finally, in accordance with the tribe's culture, only tribal members are permitted to hunt deer on the reservation.

Environmental Management and Protection

Conservation has been deeply ingrained in the tribe's culture and spiritual ways, and the Apache tradition of stewardship continues to guide the tribe's natural resource management philosophy. According to tribal officials, the Apache way has always been to preserve nature while, at the same time, sustaining the tribe's needs. The tribe takes great pride in being able to live harmoniously with nature despite its increasing population and economic needs.

Because the tribe has acted to protect the environment and preserve the forests for future generations, it has occasionally disagreed, for different reasons, with both BIA and FWS. For example, BIA initially opposed the tribe's decisions to (1) reduce the reservation's annual timber harvest level by about 40 percent, (2) reduce the amount of timber harvested by clear-cutting and on steep canyons, and (3) remove several proposed old-growth timber sales. The tribe has also insisted on selectively harvesting trees of different ages (uneven-age harvesting) that are susceptible to insect infestation or disease to produce a more natural-looking forest.

Conversely, the tribe and FWS formerly disagreed over whether federal environmental laws and regulations apply to the tribe's lands. The tribe maintained that the Endangered Species Act does not apply to its reservation, or to Indian lands in general, and that tribes have the sovereign right to manage and regulate their own lands to protect the environment and resources without being required to designate critical habitat for threatened or endangered species. FWS disagreed. The December 1994 statement of relationship between the tribe and FWS resolved this controversy. It reinforces the tribe's sovereign right to manage and regulate its lands and resources and limits FWS' role to providing technical expertise and assistance on environmental issues and mitigation measures only when requested by the tribe. FWS officials said that they would like to have more input into proposed timber sales on the reservation but are often not consulted unless the tribe believes that a proposed sale may affect a sensitive or listed species.

The tribe has chosen to accommodate the objectives of the Endangered Species Act and other federal environmental laws by implementing an approach that incorporates the "coarse filter" concept of conservation biology. This concept holds that a strategy focused on maintaining the function, composition, and structure of an ecosystem as a whole will be adequate to meet the needs of most species. For example, in developing a management plan to protect the Mexican spotted owl after the owl was listed as threatened under the Endangered Species Act, the tribe based its plan on protecting the ecosystem, rather than on protecting individual owls. FWS reviewed the tribe's plan and determined that it afforded more protection to the owl than would result from designating thousands of acres of the tribe's forest as critical habitat for the species. As a result, the tribe was allowed to continue harvesting timber while other areas in Arizona and New Mexico, including national forests, were required to shut down their timber operations until studies could be conducted to determine the effects of timber harvesting on the owl.

Accountability for Results

The tribal council—the final decision-making authority for the tribe on financial, economic development, and natural resources management matters—is accountable solely to the tribe's approximately 12,000 members. The council's chairman, vice-chairman, and nine district representatives are elected officials, so accountability is built into their positions.

Appendix III
The White Mountain Apache Tribe's Fort
Apache Indian Reservation

The tribe has begun to link decision-making to results. It works closely with BIA and holds itself and BIA accountable for these decisions. The tribal government maintains financial records of the revenue and expenses associated with specific tribal enterprises and obtains an independent audit of the reasonableness of the tribe's annual financial statements.

Tribal officials cited the council's decision to establish casino gaming on the reservation as an example of accountability for expenditures and results. The goal was to broaden the economic foundation of the tribe and to reduce the pressure on the forest resources, on which the tribe's economy had depended. According to the tribe's planning staff, the casino's success has spurred expansion of the casino complex, increased tribal jobs, increased tourism-related revenue, and stimulated the tribe's overall economic development. The casino provides the tribe with revenue that it can use for any purpose, including funding capital expenditures and offsetting losses in other tribal operations.

The Texas Parks and Wildlife Department's Parks Division

Highlights

- The Parks Division's primary goals are to (1) manage and conserve the state's natural and cultural resources and (2) provide for outdoor recreation, conservation education, outreach, and cultural/historical interpretation. The philosophy of the agency, as stated in its 1997 strategic plan, is to seek a balance between conserving the state's natural and cultural resources and providing for outdoor recreation as the division strives to achieve greater financial self-sufficiency through more and better public services.
- Faced with a revenue shortfall that was expected to result in park closures and staff shortages, the Texas legislature in 1993 authorized the division to initiate a new program—the Entrepreneurial Budgeting System (EBS)—to increase net income from park fees by returning a portion of any increased revenue and budget savings to the parks. EBS was pilot-tested in fiscal year 1994 and implemented divisionwide in fiscal year 1995.
- Under EBS, park managers were given increased flexibility and were encouraged to explore innovative entrepreneurial ideas. Park managers responded by, among other things, (1) increasing entrance and campground fees, sometimes by 100 percent; (2) managing retail stores previously contracted to concessionaires and opening new ones; (3) installing park-leased soft drink machines; (4) increasing the number of fee-based interpretative and tourist-oriented programs; (5) reducing the number of hourly employees; (6) increasing the number of campground volunteers and hosts; and (7) using prison inmates to perform routine cleaning, renovation, and improvements at park facilities as well as other services.
- EBS increased park-generated net income—primarily from entrance and campground fees—from \$14.8 million in fiscal year 1993 to \$18.5 million in fiscal year 1995, a gain of 25 percent. In addition, expenditures for operations were reduced by almost 10 percent over the 2 years.
- In developing EBS, the division assumed that the number of visits to state parks and the revenue generated from these visits would continue to rise each year. Thus, the division never foresaw or planned for periods of decreasing revenue. As a result, it had no contingency plan in place when a prolonged statewide drought, combined with higher entrance fees, resulted in fewer visits to the parks in fiscal year 1996 and a \$2 million budget shortfall. The Texas Parks and Wildlife Department responded to this shortfall by suspending EBS and not returning \$837,000 owed to the parks from fiscal year 1995. Although EBS continues to generate revenue,

none of the revenue is now being returned to the parks, and the program's incentive to reduce costs by accruing budget savings into subsequent fiscal years has been removed.

- According to some within the division, as well as representatives of some environmental groups with whom we spoke, implementing EBS disrupted the balance between the goals of conserving the state's natural and cultural resources and providing for outdoor recreation. Achieving financial self-sufficiency, they said, became a primary mission priority rather than a means to accomplish the division's stated goals.
- Under EBS, managers were not held accountable for meeting or exceeding revenue and budget savings targets, according to division officials. A new program, which is to replace EBS in fiscal year 1998, will hold managers accountable for either meeting revenue targets or reducing expenditures to make up for any shortfall.

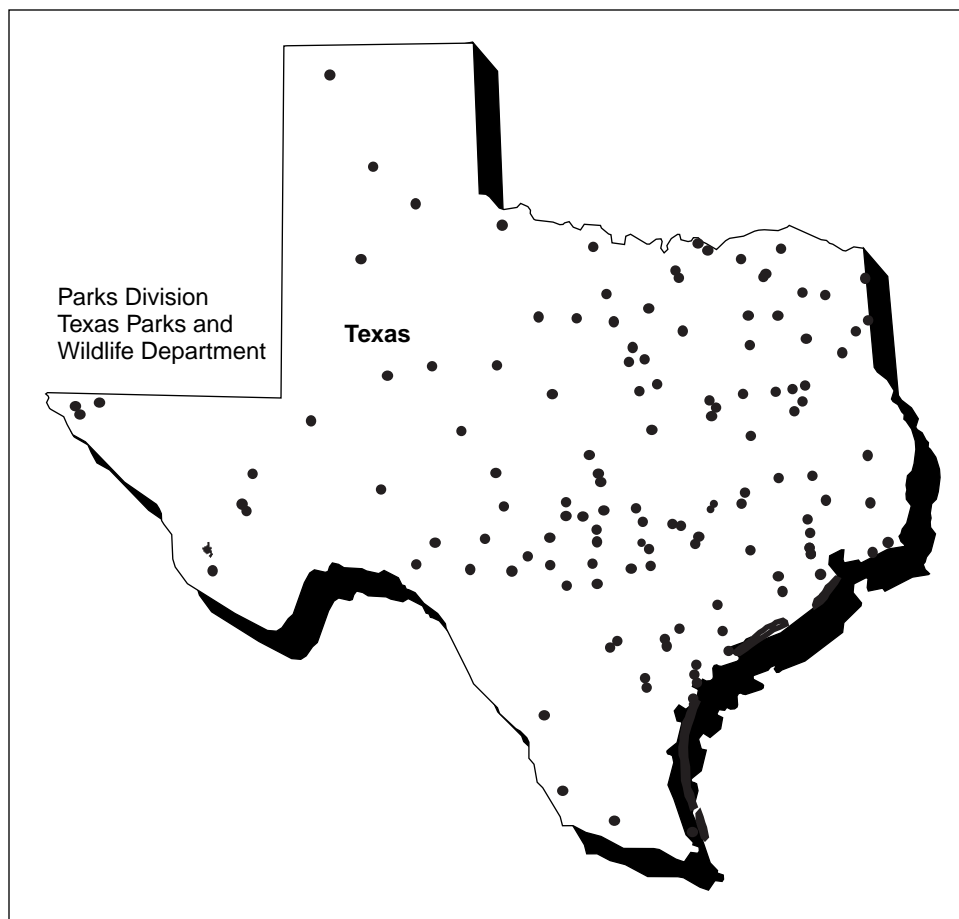
Background and Goals

The Texas Parks and Wildlife Department was formed in 1963 by merging the former Parks Board and Game and Fish Commission. It provides outdoor recreational opportunities for the public by (1) acquiring and managing parkland and historic areas and (2) managing and protecting wildlife and their habitat. The department's Parks Division is currently composed of 93 units that manage 81 parks, 37 historical parks and sites, and 7 natural areas scattered throughout the state.¹ (See fig. IV.1.) Twenty-six of these parks, sites, and natural areas were added to the system between 1986 and 1996. Together, the units encompass over 669,000 acres and range in size from the 270,000-acre Big Bend Ranch Complex State Park in southwestern Texas to some small historical sites of 1 acre or less.

¹Our analysis was limited primarily to the Parks Division and excluded lands and programs managed by the department's Wildlife Division.

Appendix IV
The Texas Parks and Wildlife Department's
Parks Division

Figure IV.1: Location of Texas State Parks



The Parks Division's primary goals are to (1) manage and conserve the state's natural and cultural resources and (2) provide for outdoor recreation, conservation education, outreach, and cultural/historical interpretation. The philosophy of the agency, as stated in its 1997 strategic plan, is to seek a balance between conserving Texas' natural and cultural resources and providing for outdoor recreation as the state strives to achieve greater financial self-sufficiency through more and better public services.

The Parks Division is a hierarchical organization whose management is highly decentralized among (1) the agency's headquarters, located in Austin; (2) 8 regional offices spread throughout the state; and (3) 125 field offices located on the parks, historic sites, and natural areas. During fiscal

year 1997, the Parks Division employed 850 full-time and 300 hourly or seasonal employees, about 94 percent of whom were located in the 125 field offices, according to a Parks Division official.

Revenue Generation and Financial Self-Sufficiency

The Parks Division's yearly budget is divided between operations and capital costs and renovations. The operations budget funds employees' salaries as well as the costs of routine maintenance, such as painting and roof repairs. The division's capital and renovation budget funds new land acquisitions and construction, as well as major repairs and renovations to existing facilities.

In fiscal years 1992 and 1993, the Parks Division's operations were funded from (1) park entrance and campground fees, (2) a state sales tax on cigarettes, (3) unclaimed motorboat fuels tax refunds, (4) appropriations from general tax revenue, and (5) other park revenue² and appropriations from various funds. However, faced with a revenue shortfall that was expected to result in park closures and staff shortages, the Texas legislature decided in 1993 to fund the division's operations budget primarily from direct and indirect user fees. As a result, it (1) created a new sales tax on sporting goods so that revenue from the state sales tax on cigarettes and general revenue could be used elsewhere and (2) authorized the division to initiate EBS to increase net income from park fees. (See table IV.1.)

²Includes revenue from mineral leases, public hunts, donations, and sales of capital goods and equipment.

**Appendix IV
The Texas Parks and Wildlife Department's
Parks Division**

Table IV.1: Texas Parks and Wildlife Department's Revenue Available for State Park Operations, Fiscal Years 1992-97

Dollars in millions

Fiscal year	Appropriations from general tax revenue	Unclaimed motorboat fuels tax refunds	Cigarette tax	Sporting goods sales tax	Park entrance and camping fees ^a	Other park revenue and appropriations ^b	Total
1992	\$6.25	\$9.55	\$13.58		\$16.25	\$1.44	\$47.07
1993	\$6.25	\$9.75	\$13.37		\$17.17	\$2.45	\$48.99
1994		\$12.50		\$13.14	\$21.63	\$1.39	\$48.66
1995		\$12.50		\$13.08	\$20.31	\$1.64	\$47.53
1996		\$12.50		\$15.50	\$20.93	\$2.09	\$51.02
1997 (est.)		\$12.50		\$15.50	\$22.30	\$1.79	\$52.09

Note: This table includes revenue data for the entire Texas Parks and Wildlife Department because a Parks Division finance official was unable to separate the sources of revenue available to the Parks Division from those available to the Wildlife Division and other programs and functions.

^aIncludes revenue from the sale of conservation passports, which allow entrance to all units within the system. These passports are sold primarily by the Parks Division's headquarters, and the revenue from their sale is retained by the division.

^bIncludes revenue from mineral leases, public hunts, donations, and sales of capital goods and equipment.

The Entrepreneurial Budgeting System (EBS)

EBS was pilot-tested in fiscal year 1994, implemented divisionwide in fiscal year 1995, and suspended in fiscal year 1996. The program increased revenue and reduced costs in both fiscal years 1994 and 1995. Although the program continues to generate revenue primarily from increased entrance and campground fees, none of this increased revenue is now being returned to the individual state parks, according to a Parks Division official. In addition, the program's incentive to reduce costs by accruing budget savings into subsequent fiscal years has been removed.

EBS had two components—one intended to increase revenue, the other intended to reduce costs—within existing laws and regulations. Under the revenue-generating component, 35 percent of the earned revenue above certain targets was to be returned to the individual state park where the revenue was generated; 40 percent was to be returned to the Parks Division to support general operational expenses; and the remaining 25 percent was to be placed in a special account to provide start-up funding as additional parks adopted EBS. Returning 35 percent of the earned revenue above certain targets to the individual state park that

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generated the revenue was expected to provide an incentive to the parks to increase revenue.

EBS' budget savings component gave individual state parks an incentive to reduce costs. Individual park budgets were to be reduced by 5 percent a year with no inflation factor built in. Budget savings above this target amount could be accrued into subsequent fiscal years.

EBS departed from earlier management approaches under which the Parks Division penalized, rather than rewarded, park managers for reducing their dependence on general revenue. According to a departmental assessment of EBS, "although parks had provided innovative programs in the past, they were essentially penalized for saving budgeted dollars. Many times the following fiscal year budgets were reduced by the amount saved. Attempts at increasing revenue were rarely acknowledged much less rewarded."

The parks appeared to respond enthusiastically to EBS, and the program seemed to spark a "new entrepreneurial culture" within the division, according to Parks Division officials. Seventy-two units applied to participate in the pilot test in fiscal year 1994. Of the 42 units selected to participate, 38 met or exceeded their revenue targets by a total of over \$1.1 million, of which \$323,000 was returned to these parks in fiscal year 1995. Similarly, 71 of the division's 93 units met or exceeded their fiscal year 1995 revenue targets by a total of over \$1.4 million, of which \$504,000 was to be returned to the parks in fiscal year 1996. (See table IV.2.)

Table IV.2: EBS Revenue for Fiscal Years 1994 and 1995

Dollars in thousands

Fiscal year	Target revenue	Actual revenue ^a	Actual revenue less target revenue	Number of parks meeting or exceeding target	Amount to be returned to the parks
1994	\$7,429	\$8,590	\$1,161	38 of 42	\$323
1995	\$16,591	\$18,008	\$1,417	71 of 93	\$504

^aExcludes revenue collected from the sale of Texas conservation passports (annual park passes), leases and permits, and other miscellaneous sources.

In addition, 39 of the 42 units that participated in the fiscal year 1994 pilot test met or exceeded the goal of reducing expenditures by 5 percent, making \$407,000 available for subsequent fiscal years. Similarly, 54 of the division's 93 units met or exceeded their fiscal year 1995 budget savings

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targets, making an additional \$333,000 in budget savings available for subsequent fiscal years. (See table IV.3.) In total, expenditures for operations were reduced by almost 10 percent over the 2 years.

Table IV.3: EBS Expenditures for Fiscal Years 1994 and 1995

Dollars in thousands

Fiscal year	Target expenditures	Actual expenditures	Target less actual expenditures	Number of parks meeting or exceeding target	Amount to be returned to the parks
1994	\$10,582	\$10,110	\$473	39 of 42	\$407
1995	\$10,211 ^a	\$10,219	\$(8)	54 of 93	\$333

^aExcludes approximately \$4 million in salaries that was not considered in calculating either the 5-percent budget reductions or the amounts to be accrued into subsequent fiscal years.

Under EBS, park managers were given increased flexibility and were encouraged to explore innovative entrepreneurial ideas to increase revenue. Park managers responded by increasing entrance and campground fees, sometimes by 100 percent.³ As a result, revenue from these activities rose from \$14.8 million in fiscal year 1993 to \$18.5 million in fiscal year 1995, a gain of 25 percent. (See table IV.4.) Park managers also increased revenue by managing retail stores previously contracted to concessionaires, as well as by opening new ones, installing park-leased soft drink machines, and increasing the number of fee-based interpretative and tourist-oriented programs.

³In May 1996, the department replaced the daily per-vehicle entrance fees with daily per-person entrance fees ranging from \$1 to \$5 per adult.

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**Table IV.4: Texas State Parks
Entrance, Concessions, and
Campground Fee Collections, Fiscal
Years 1993-96**

Dollars in thousands				
Fee source	Fiscal year			
	1993	1994	1995	1996
Park entrance fees	\$5,970	\$6,521	\$6,604	\$6,176
Concessions and recreation fees	\$3,338	\$3,704	\$5,189	\$5,864
Park campground fees	\$8,355	\$9,402	\$10,299	\$9,146
Other receipts ^a	\$122	\$147	\$196	\$223
Gross receipts	\$17,785	\$19,774	\$22,288	\$21,409
Deductions ^b	\$2,929	\$3,122	\$3,788	\$4,095
Net revenue	\$14,856	\$16,652	\$18,500	\$17,314

^aIncludes collections of state sales and hotel taxes.

^bIncludes deductions for facility and hotel tax refunds, among other deductions.

Under the pilot test, park managers were also allowed to count as budget savings any unspent salary funds resulting from not filling vacant full-time staff positions. Park managers responded by reducing the number of hourly employees and increasing the number of campground volunteers and hosts and using prison inmates to perform routine cleaning, renovation, and improvements at park facilities as well as other services. They also reduced the number of months worked by seasonal employees. In fiscal year 1995, volunteers were donating about 495,000 hours worth about \$2.6 million, or work equal in value to that of about 238 full-time employees, while the value of inmates' labor was estimated at about \$2.4 million over the last 2 fiscal years.

In fiscal year 1995, the department made several changes to EBS. Participation, which had been voluntary in fiscal year 1994, was made mandatory. In addition, although all units were expected to increase revenue by at least 0.5 percent, the revenue target above which 35 percent of the earned revenue would be returned to a park was increased from 1.4 to 3.0 percent, making it more difficult for parks to meet or exceed the targets. Furthermore, net income from park entrance, camping, and other fees decreased by \$1.2 million from fiscal year 1995 to fiscal year 1996 (see table IV.4), creating a budget shortfall that (1) offset budget savings from unspent salary funds resulting from unfilled vacancies, thus reducing the managers' ability to meet the budget savings target and (2) curtailed

funding for the special account established to provide start-up funding for EBS, according to a Parks Division official.

In developing EBS, the department assumed that the number of visits to state parks and the revenue generated from these visits would continue to rise each year. However, in fiscal year 1996, it had a \$2 million budget shortfall because a prolonged statewide drought in the spring and summer of 1996, combined with higher park entrance fees, resulted in fewer visits to the parks.⁴ For example, the number of state park visitor days declined by 4.5 percent, from 24.4 million in calendar year 1995 to 23.3 million in calendar year 1996. As a result, the department suspended the program in September 1996 and did not return the \$837,000 (\$504,000 in earned revenue and \$333,000 in budget savings) owed to the parks from fiscal year 1995. According to the department's chief financial officer, about \$375,000, or 45 percent, of the \$837,000 was returned to the parks in December 1997, and the remainder is expected to be returned in the future, once park revenue improves. The department intends to replace EBS with a similar program—the Portfolio Initiative—which is to begin in fiscal year 1998 and be fully implemented in fiscal year 1999, according to a Parks Division official.

Funding for the Parks Division's Capital and Renovation Expenses

In fiscal years 1992 and 1993, revenue from park fees and the state sales tax on cigarettes was used to service the debt on \$75 million in general obligation bonds authorized in the 1960s to finance the Parks Division's capital and renovation budget. In fiscal years 1994-97, revenue from park fees and a tax on sporting goods was used to service the debt. However, faced with a backlog of deferred park maintenance and reconstruction costs that had risen to \$231 million,⁵ the Texas legislature decided in August 1997 to issue \$60 million in general obligation bonds for the department's capital needs and to service the debt from general tax revenue rather than from park fees and the sporting goods tax. Between half and two-thirds of the \$60 million authorized for Texas Parks and Wildlife capital projects will be spent on Parks Division projects, according to a Parks Division finance official. As a result, while the Parks

⁴According to Texas Parks and Wildlife finance officials, the estimated \$2 million budget shortfall in fiscal year 1996 resulted from (1) declining sales of Texas conservation passports and (2) the \$1.2 million decrease in net income from park entrance, camping, and other fees from fiscal year 1995 to fiscal year 1996.

⁵Of this total, an estimated \$76 million is needed for critical repairs—i.e., for those needed to avoid a facility's closure or required for health and safety reasons—including upgrading parks' electrical, water, and wastewater treatment systems and renovating aged park facilities and buildings, according to a Parks Division official.

Division's operations budget is now funded almost entirely from direct and indirect user fees—including a new sales tax on sporting goods—the percentage of the division's capital and renovation budget funded from these fees will decrease, and general tax revenue will be used to finance the Parks Division's capital budget.

Environmental Management and Protection

According to its 1997 strategic plan, the Parks Division seeks to balance the goals of conserving the state's natural and cultural resources and providing for outdoor recreation as the division strives to achieve greater financial self-sufficiency through more and better public services. However, according to some within the division, as well as representatives of some environmental groups with whom we spoke, implementing EBS disrupted this balance, and achieving financial self-sufficiency became a primary mission priority, rather than a means to accomplish the division's stated goals.

Two of the four nonprofit organizations we contacted maintained that the division's emphasis on generating revenue under EBS led to recreational development on environmentally sensitive lands or on lands that should have been designated as natural areas. For example, officials of the Lone Star Chapter of the Sierra Club and the Texas Committee on Natural Resources said that the expansion of a golf course at Bastrop State Park, located southeast of Austin, may have destroyed habitat critical to the survival of the endangered Houston toad. In addition, an official with the Texas Committee on Natural Resources said that lands formerly set aside as natural areas are now being developed into state parks. As a case in point, the official cited plans for Devils River State Park, where habitat critical to endangered birds will be used by recreational vehicles.

These officials are concerned that the division is emphasizing recreational uses, such as park-run retail stores, on lands that can generate revenue over conservation of the state's natural and cultural resources. For example, the officials said that since 1993, the Parks Division (1) has not designated any lands as natural areas and (2) has discontinued its natural heritage program. In contrast, officials with the Texas Association of Campground Owners and the Texas Recreation and Parks Society supported EBS and said that the division was doing a good job of balancing revenue generation and conservation.

According to the Director of the Parks Division and other agency officials, efforts to increase revenue and/or decrease costs under EBS complied with

all applicable requirements of federal and state environmental laws and regulations. Moreover, in the case of the golf course expansion at Bastrop State Park, a concessionaire is now making a contribution annually to mitigate the habitat of the endangered toad, according to a Parks Division official. However, the director acknowledged that EBS placed too much emphasis on generating revenue and that some park managers may have gone too far in emphasizing revenue generation at the expense of conservation and the protection of natural resources. A 1996 survey of park employees by an outside consultant found that employees lacked a clear sense of the agency's mission and welcomed more emphasis on conservation and resource management within the division.

According to the director, the Parks Division must emphasize to its employees that programs like EBS are not ends in themselves, but rather a means to help the agency achieve its primary goals of managing and conserving the state's natural and cultural resources and providing for outdoor recreation. Toward this end, the division plans to complete an inventory of all naturally significant lands and historic areas held by the department and to designate areas of statewide natural significance as natural areas within existing state parks. This, together with other initiatives, will help bring a sense of natural resources management back into the division, the director said.

Accountability for Results

In general, individual park managers are not held accountable for their performance, largely because neither the division's performance measurement system nor individual managers' annual performance appraisals are tied to the agency's goals and objectives. However, the new Portfolio Initiative will hold managers accountable.

Under EBS, the responsibility for operational and financial decision-making was shifted from headquarters to the division's 125 field offices. Park managers signed annual EBS contracts (performance agreements) that held them accountable for meeting or exceeding revenue and budget savings targets. However, neither the agency's performance measurement system nor individual managers' performance appraisals were linked to the agency's objective of achieving greater financial self-sufficiency through more and better public services, according to a Parks Division official.

Under EBS, managers who did not meet or exceed revenue and budget savings targets were not held accountable and, with the suspension of the program, managers again will not be rewarded when they exceed the

Appendix IV
The Texas Parks and Wildlife Department's
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targets. According to division officials, the Portfolio Initiative, which is to replace EBS in fiscal year 1998, will hold managers accountable for either meeting revenue targets or reducing expenditures to make up the shortfall. In the future, meeting revenue and budget savings targets will be tied to individual performance agreements, as well as to pay and promotion standards.

The Church of Jesus Christ of Latter-day Saints' Deseret Land and Livestock Ranch

Highlights

- The mission of the 201,000-acre Deseret Land and Livestock (DLL) ranch, located in north central Utah, is to maximize profit while improving the lands' resources, be a part of the neighboring community, and be an ensign of the Church of Jesus Christ of Latter-day Saints. DLL is purported to be the largest land-owning ranch in the state.
- According to the ranch manager, DLL is a financially self-sufficient, tax-paying business. The ranch generates revenue primarily from cattle sales and from fees for hunting big-game wildlife. While revenue from cattle sales varies from year to year with the selling price of beef cattle, total revenue from DLL's wildlife program, which includes hunting, has increased nearly every year and in 1997 generated net revenue of about \$342,000.
- The ranch has not always been financially self-sufficient. However, establishing a clear expectation that the ranch would be financially self-sufficient and providing incentives to increase net income—such as refusing to further subsidize the ranch's operations and rewarding managers and other employees for their performance—have resulted in innovative approaches and techniques to increase revenue and decrease costs. Such innovative approaches and techniques include (1) introducing unconventional livestock grazing practices and (2) managing big game as a profitable resource. Both approaches require active management.
- Although DLL manages its lands primarily to improve forage for cattle and habitat for big game, in doing so, it also protects, restores, and maintains other resources, including riparian areas, other wildlife, and water quality. For example, by limiting the length of time and designating the time of year that cattle are allowed to graze an area and by resting several pastures every year, DLL has been able to increase plant density and forage diversity and production, as well as reduce runoff and soil erosion.
- DLL is accountable to the church's Farm Management Company. The ranch prepares a 5-year plan, sets annual goals, and prepares an annual operations budget each October. Ranch employees help set yearly goals for their programs, and performance appraisals are based on how well the employees achieve those goals.

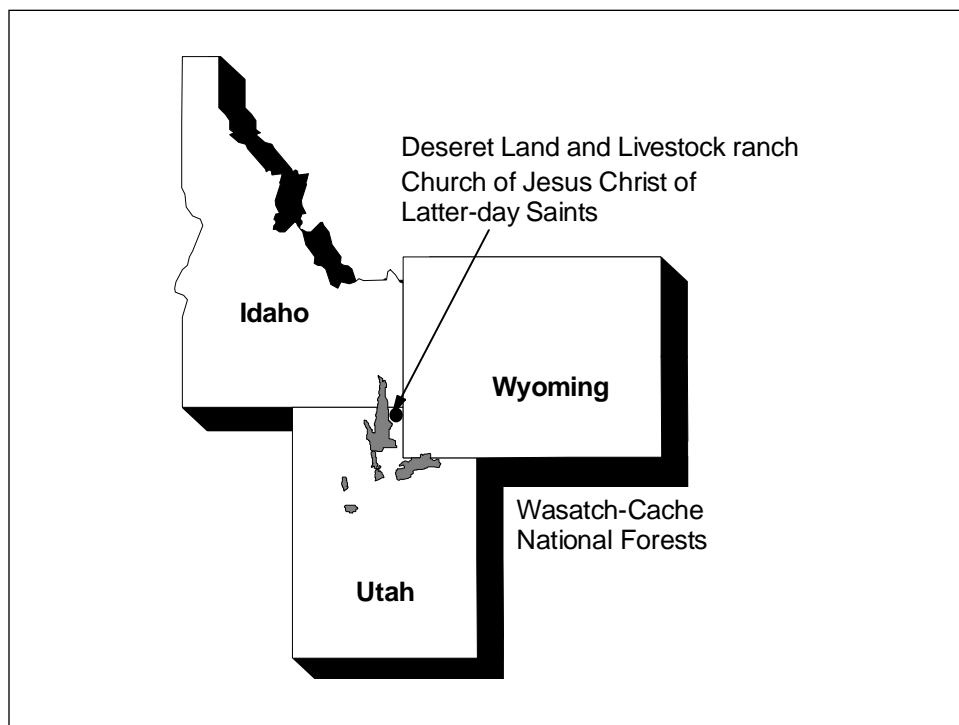
Background and Goals

Deseret Land and Livestock is a 201,000-acre ranch located in Woodruff, Utah, about 110 miles northeast of Salt Lake City, Utah. (See fig. V.1.)

Appendix V
The Church of Jesus Christ of Latter-day
Saints' Deseret Land and Livestock Ranch

Within the ranch's boundaries are about 14,000 acres leased from the Department of the Interior's Bureau of Land Management and about 640 acres leased from the state.

Figure V.1: Location of the Deseret Land and Livestock Ranch



The ranch, which borders the Wasatch-Cache National Forests, is purported to be the largest land-owning ranch in Utah and has been owned since 1983 by the Church of Jesus Christ of Latter-day Saints. DLL is one of a number of the church's agricultural properties in the United States and other countries. The Farm Management Company, a tax-paying entity of the church, provides oversight management of DLL.

The rolling eastern half of the ranch is managed primarily for cattle grazing, while the higher-elevation, more rugged western half is managed primarily for hunting and fishing. DLL is located in an arid area of the state known for its extremely cold temperatures and short growing season of about 52 days.

DLL's written mission is to "maximize profit while improving the resources" and to "be a part of the community and an ensign of the church." The ranch manager informed us that while he considers social and environmental values and concerns in reaching decisions, his number one mission priority is to maximize profit. He noted, however, that managing for the long-term health of the land is the key to sustainable production.

Revenue Generation and Financial Self-Sufficiency

According to the ranch manager, DLL is a financially self-sufficient, tax-paying business. Like the church, DLL generally does not accept federal or state subsidies. The ranch's annual revenue covers both operating and capital costs, including \$280,000 a year paid to the church to repay land acquisition costs. Any annual net income generated by DLL goes to the church through the Farm Management Company.

The ranch generates revenue primarily from two activities—cattle sales and hunting (included within DLL's wildlife program) four species of free-ranging big game—mature rocky mountain bull elk, shiras moose, buck mule deer, and pronghorn antelope. The wildlife program's other revenue sources include fees charged for high-quality fly fishing on the ranch's ponds and streams and for bird watching. Recently, the wildlife program had begun to generate more revenue than the ranch's historically significant cattle sales, but in 1997, cattle sales accounted for over 50 percent of net income. While total revenue from the wildlife program has increased nearly every year, revenue from cattle sales varies annually, primarily with changes in the selling price of beef cattle. For example, according to the ranch manager, when closing data for 1997 are compiled, DLL's wildlife program will generate net income of about \$342,000 for the year and is projected to generate \$400,000 in the year 2001. In contrast, the cattle program's net income, which averaged about \$158,000 between 1991 and 1995, should increase to between \$400,000 and \$550,000 in 1997. Revenue projections for the cattle program in 2001 range from as low as \$49,000 to \$746,000, depending on cattle prices. Other revenue-generating uses and activities on the ranch include leasing land annually for sheep grazing and leasing land for a 7-mile, 100-foot-wide gas pipeline right-of-way, for which DLL receives \$20,000 per year.

Efforts to Increase Revenue or Reduce Costs

The ranch has not always been financially self-sufficient. The former manager, who was hired by the ranch's previous owner and managed the ranch for about 17 years, told us that when he was hired in 1978, the ranch was losing about \$500,000 a year. The former owner created incentives for

financial self-sufficiency by (1) giving him greater discretion in managing the ranch, (2) refusing to continue subsidizing the ranch's operations, and (3) allowing any profits to be kept on the ranch to enhance its value. The former manager found that the increased flexibility and clear expectation that the ranch would be financially self-sufficient resulted in innovative approaches and techniques to increase revenue and decrease costs. The former manager claims to have added \$100,000 a year in revenue to the ranch, increased the size of both the cow herd and the elk population, and improved the quality of the deer population.

The church acquired the ranch in 1983 and expects DLL to remain financially self-sufficient. The Farm Management Company desires that DLL earn a 5-percent return on investment on its operation and expects a potential 6-percent return on any contemplated purchases of new property.

Any annual net income generated by DLL now goes to the church through the Farm Management Company rather than staying on the ranch. However, the ranch's employees have two incentive plans—one based on the ranch's net income and the other based on annual, individual goals. Under the ranchwide plan, management and nonmanagement personnel can earn up to 10 percent and up to 5 percent of their salaries, respectively, on the basis of exceeding DLL's profit target. According to the ranch manager, this incentive is hard to achieve because exceeding the profit goal requires covering the \$280,000 annual payment to the church for the ranch's land acquisition costs. However, management and nonmanagement personnel can also earn up to 5 percent and up to 10 percent of their salaries, respectively, if they achieve their individual goals. According to the ranch manager, this incentive is often achieved and its costs are included in the ranch's annual budget.

Livestock Grazing

DLL is one of a small, but growing, number of ranches that practice what is often referred to as "time-control" or "time-managed" grazing. On DLL, this management practice involves developing an annual written plan that (1) sets the time of year and limits the length of time that cattle are allowed to graze an area and moves them among fenced pastures rather than allowing them to graze on open rangeland and (2) rests pastures every year by not allowing cattle to graze on them. During the ranch's brief growing season, pastures are generally grazed for short periods of time by a relatively large number of cattle. This approach allows long periods of rest and recovery for the plants. For example, on a typical June day, cattle

will be grazing on 10 percent of the ranch, while 90 percent is recovering from grazing or growing forage for future use.

From 1983 to 1997, the number of mother cows on the ranch increased by 85 percent and the number of weaned calves by 103 percent. In addition, DLL expects the numbers of mother cows and weaned calves to increase by about 10 percent and 14 percent, respectively, by the year 2001. However, the ranch manager observed that time-control grazing on DLL has been successful because of an abundance of water, the use of fencing, and active management. For example, the ranch manager informed us that DLL has an “incredible” water right that predates statehood, as well as most other state water rights. These water rights entitle the ranch to a flow rate of 134 cubic feet of water per second. Irrigated pastures represent less than 4 percent of the ranch’s acreage but provide over 55 percent of the total cattle forage. In addition, segmenting pastures by fencing is necessary but can be expensive; maintaining fences on the ranch costs about \$37,000 a year.

Although DLL does not now own any sheep, it leases land annually to sheep owners who graze about 3,300 head on the ranch. According to the ranch manager, this grazing is also time-controlled by moving the sheep to new areas every few days. Control is achieved by herding rather than by fencing. He stated that sheep seem well suited to the ranch’s summer range.

Recreational Hunting

DLL also manages big game and other wildlife as a profitable resource rather than as a cost of doing business. Game species in Utah are managed by the state, which charges hunters \$35 a year for a license and sets hunting seasons and bag limits. However, under Utah state law, private property being managed for the benefit of livestock and wildlife can be designated as a “cooperative wildlife management unit.” The landowner can then charge a fee for access to recreational hunting on the property. In 1996, DLL charged hunters up to \$8,500 for guided trophy bull elk hunting. (See table V.1.) Fees for elk hunting generated the highest total revenue from recreational hunting on the ranch, followed by fees for deer, antelope, and moose hunting. DLL also sponsors a “Dedicated Sportsman” program, under which mule deer hunters are allowed to take only two trophy bucks every 5 years. Hunters in this program generally hunt all 5 years, paying their annual \$1,300 fee but harvesting only two trophy bucks. These hunters also give 8 hours of service annually to DLL’s wildlife programs. DLL offers unguided hunts for mule deer and pronghorn antelope most years. Hunts for antlerless deer and elk are also usually

available annually; 90 percent of the permits for these hunts are free through a public draw.

Table V.1: Fees Charged for Recreational Hunting on the Deseret Land and Livestock Ranch in 1996

Species	Hunting days	Amount
Trophy bull elk (guided)	5	\$8,500
Management bull elk (guided)	5	\$5,500
Shiras moose (guided)	6	\$5,000
Buck mule deer (guided)	5	\$5,000
Buck mule deer (unguided)	10	\$1,300
Pronghorn antelope (guided)	4	\$1,300

DLL's wildlife program, which generates most of the ranch's revenue through recreational hunting, has returned a profit every year since 1982. Furthermore, DLL expects the net income per acre from its wildlife program to increase by over 50 percent between 1995 and 2001. However, like time-control grazing, managing wildlife as a profitable resource entails costs and effort. For example, according to DLL officials, DLL spends about \$25,000 a year for security. In addition, the ranch employs two full-time wildlife staff to (1) feed wildlife in the winter, (2) monitor and maintain data on the composition of its wildlife herds over time, (3) prepare a yearly management plan for the state, (4) perform research to improve wildlife health and habitat, and (5) monitor environmental indicators, such as the number of birds, as part of the U.S. Fish and Wildlife Service's national breeding bird survey.

The ranch manager said that DLL has encountered some opposition to the fees it charges for hunting. The manager said that the complaints have generally gone away over time as people have learned to accept DLL's operation and have seen the evolution of DLL's wildlife program. He maintained that people will accept change if they feel good about what is being accomplished.

Cost-Reduction Efforts

According to DLL officials, as part of its effort to maximize profit, DLL lowered its costs per cow per year from \$244 in 1983 to \$171 in 1989, a reduction of 30 percent. To achieve this, DLL officials said, DLL now grazes cattle of a size and type suited to the environment and has aligned the cattle's breeding and calving seasons with the growing season of the forage. Moreover, cows that do not produce "reasonable" calves or are not healthy are culled out, thereby reserving forage for productive cows and their calves.

Staffing changes have also lowered costs. DLL has reduced the number of full-time employees on the ranch from 24 to 11 and has hired contractors to provide security, construct fences, and operate heavy equipment. In addition, DLL benefits from volunteer work on the ranch. For instance, some church service missionaries have donated many hours of service in their professional fields to promote the lands' health, preserve water rights, and improve the ranch in other ways, and youth groups have volunteered to do service projects on the ranch.

Values and Concerns That
Reduce Net Income

Although DLL's first mission priority is to maximize profit, the ranch is also a part of the community and a representative of the church. As such, it sometimes makes management decisions that emphasize social values and concerns rather than net income. For example, half of the revenue from the sale of big game antlers, shed annually by animals on the ranch and collected by youth groups for fund raising, is donated to charity. The other half of the revenue is retained by the participating youth groups.

In addition, under an agreement with the state, 15 percent of the permits available to hunt bull elk and buck mule deer on the ranch are offered free to the public through a drawing. Thus, for the normal \$35 state license fee, the selected hunters can be part of a guided 5-day hunt that includes food and all of the other amenities afforded to hunters paying up to \$8,500.

Bison were once raised on DLL; however, the ranch ended its bison program because the high fences, necessary to contain the bison under a time-control grazing regime, although financially feasible, were not built because they would have blocked the migration of wildlife, such as elk, deer, and antelope.

Social considerations reduced DLL's profits when, during the severe winter of 1993, the ranch fed game animals 1,200 tons of hay, in part to keep hungry elk from moving onto its neighbors' lands where they might have knocked down fences and raided hay stacks. According to DLL officials, DLL provides for the wildlife on its property not only because it profits from its participation in the state's cooperative wildlife management unit program but also because DLL believes that it has a responsibility to care for its neighbors' rights.

Environmental Management and Protection

DLL manages its lands primarily to improve two resources—forage for cattle and habitat for big-game wildlife. However, in doing so, according to DLL officials, DLL also protects, restores, and maintains other resources, including riparian areas, nongame wildlife, and water quality.

For example, according to DLL officials, time-control grazing has been found to be compatible with the local environment and may improve wildlife habitat as well as increase net income, restoring the lands' health while generating cash flows. Time-control grazing achieves a balance between the use of forage and the time needed for plants to recover and regrow. Through this approach, plants have increased in density and variety, and bare areas have filled in. Denser plant cover increases water infiltration into the ground, increasing forage diversity and production and reducing water runoff and soil erosion. Consequently, the watershed is better able to store, purify, and slowly deliver water into the natural system. DLL's experience further suggests that grazing sheep with guard dogs discourages elk from grazing in riparian and other fragile areas because elk do not seem to like being around the sheep and dogs.

By providing habitat for big game, nongame species that rely on this habitat are also protected, and wildlife are very abundant and diverse on the ranch. Nongame wildlife observed on the ranch to date include 187 species of birds and 30 species of small mammals.

The current ranch manager observed that the business is operated to maximize profit. He said that even though money is important, DLL will not take environmental risks that will jeopardize future earnings. While protecting the environment entails short-term costs, it also enhances future opportunities for generating revenue.

The ranch manager told us that DLL and the church understand the financial and political reasons for being environmentally accountable, but they also believe that landowners—particularly large landowners—have an ethical responsibility to the public to protect the environment. He explained that the Farm Management Company asked all of the church's farms and ranches to do something good for the environment in 1997, beyond what they are already doing. The company is asking each farm and ranch to develop a plan of action that includes collecting ideas to share with others, establishing a baseline of where they are and a vision of where they want to go, and a plan for achieving their objectives.

Accountability for Results

DLL is accountable to the church's Farm Management Company for its annual performance. DLL prepares a 5-year plan that includes (1) its mission statement; (2) specific 5-year goals addressing the company's guiding principles, such as being a land-based, profit-motivated organization; (3) its financial statement for the previous year; (4) trend data on gross or net income for prior years; and (5) a report highlighting recent achievements and trends in indicators, such as the number of cattle and big game. Additionally, DLL develops annual plans for each of its programs focused on its 5-year goals. The plans are very specific and provide the basis for the yearly budget that DLL presents to the Farm Management Company for approval each October. The ranch manager said that DLL has met its budget goals most years.

The ranch manager noted that although it is relatively easy to evaluate DLL's financial accountability, it is difficult to develop outcome measures for, and measure progress toward improving, the ranch's natural resources. Without such measures, DLL uses indicators or proxies, such as wildlife population counts showing increases or decreases in the number and kinds of wildlife.

DLL's management sets annual goals for employees through discussions with them and bases performance appraisals on how well the employees achieve these goals. The ranch's management believes that specific, measurable goals will give employees incentives to try different approaches and techniques to meet their goals.

The Nature Conservancy's Niobrara Valley Preserve

Highlights

- The 55,000-acre Niobrara Valley Preserve in Nebraska is unusual among The Nature Conservancy's land units in that most of its revenue is generated by a commercial activity—grazing—rather than by fund-raising efforts and/or income from an endowment. While grazing revenue varies with factors such as weather conditions and the price of beef cattle—and in some years grazing revenue has not covered Niobrara's costs—grazing, on average, provides at least 80 percent of the preserve's total revenue.
- Over about the last 10 years, revenue from all activities on the preserve have covered both operating and capital costs, apart from the costs to acquire the land, which were paid by the Conservancy.
- While the preserve is expected to strive to be self-sufficient and is heavily reliant on grazing for revenue, the Conservancy manages Niobrara to replicate the historic use—grazing by bison and cattle—that resulted in diverse plants, animals, and natural communities. Thus, bison and cattle grazing, as well as other activities such as the sale of wood products, is used primarily as a tool to achieve a desired ecological condition.
- Although grazing on the preserve demonstrates that a historical commercial activity can, in certain geographical areas and under certain conditions, play a positive role in accomplishing both ecological and economic objectives, the Conservancy has indicated that when a choice must be made, preserving ecological diversity has priority over generating revenue.

Background and Goals

The Nature Conservancy is a nonprofit organization with over half a million members. It has offices and activities throughout the United States, as well as partnerships with organizations in other nations. Under the Conservancy's decentralized management, state offices and land units have considerable autonomy and discretion to interpret and apply the organization's overall mission, policies, and procedures. The Conservancy's land ownership fluctuates because some acquired lands are resold to other organizations, including government agencies.¹ Recent data indicate that the Conservancy owns about 1 million acres of land in about 1,500 preserves and has management agreements, easements, and other arrangements on several million more acres. Some, but not all, of the Conservancy's preserves are open to the public.

¹See, for example, Federal Lands: Land Acquisitions Involving Nonprofit Conservation Organizations (GAO/RCED-94-149, June 15, 1994).

The Nature Conservancy's mission is to preserve the plants, animals, and natural communities that represent the diversity of life on earth (biological diversity or biodiversity) by protecting their habitat—that is, the lands and waters they need to survive. In making decisions, according to Conservancy officials, the Conservancy uses the best available science, keeping in mind the organization's mission of preserving biodiversity.

The Conservancy believes that humans are a component of biological diversity and, as such, their activities and uses must be considered in reaching management decisions. Therefore, the Conservancy believes that environmental protection must be compatible with the local economy, and the Conservancy tries to integrate its preserves with their communities, seeking to develop community support and involvement. Toward this end, the Conservancy recently established a Center for Compatible Economic Development to work with communities to develop businesses, products, and land uses that conserve ecosystems,² enhance local economies, and achieve community goals. In addition, according to Conservancy officials, the Conservancy sometimes voluntarily pays property taxes as a good-will gesture, even though, as a nonprofit organization, it is not required to do so in some states.

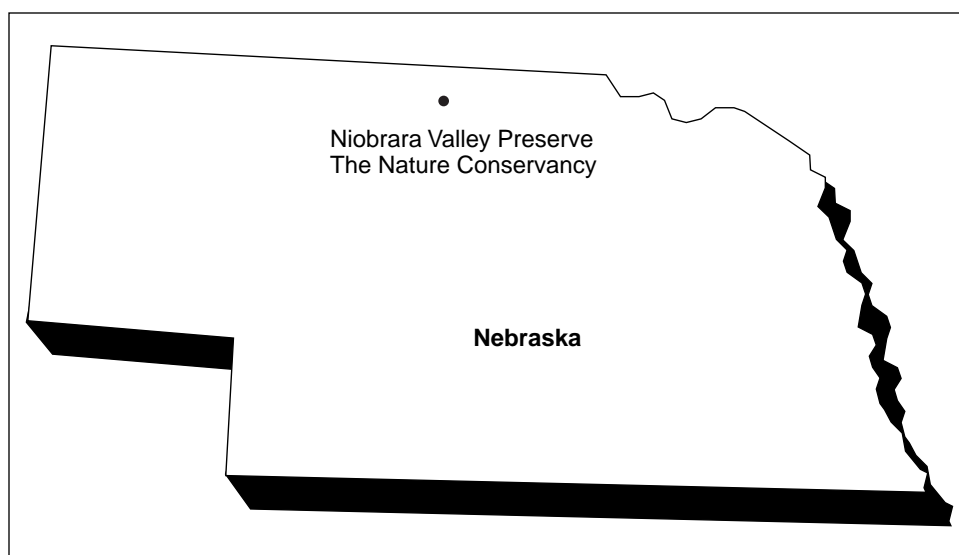
In 1997, the Conservancy announced a long-term, mission-related conservation goal of ensuring the long-term survival of all viable native species and community types through the design and conservation of portfolios of sites within ecoregions.³ To help fulfill this goal, the Conservancy is developing scientific information and tools, including a Natural Heritage Network—a database on species and habitats based on input by federal and nonfederal scientists.

The Conservancy purchased the Niobrara Valley Preserve in the early 1980s. Comprising about 55,000 acres—mostly prairie grasslands, with some riparian woodlands—the preserve is bordered by the Niobrara River near Johnstown, Nebraska. (See fig. VI.1.) A small part of the preserve is owned by the state of Nebraska.

²One definition of an ecosystem is a distinct ecological unit that is formed when interdependent communities of plants and animals, which can include humans, interact with their physical environment (soil, water, and air).

³Ecoregions are delineated on the basis of combinations of similar climate, landforms, and vegetation.

Figure VI.1: Location of the Niobrara Valley Preserve



Niobrara was one of the first preserves acquired by the Conservancy to maintain and/or enhance biodiversity at the landscape scale rather than to protect an individual species. Niobrara also has a research program.

Revenue Generation and Financial Self-Sufficiency

As a nonprofit organization, The Nature Conservancy does not have a goal of making a profit. However, its ability to spend money to fulfill its mission depends on its ability to raise money. Nearly all of the Conservancy's revenue comes from dues, contributions, grants, gifts, investment income, and land sales. In fiscal year 1996 (ending June 30, 1996), these sources accounted for 97 percent of the Conservancy's \$326.2 million in total revenue. The remaining 3 percent came from other sources, including activities such as grazing on the organization's lands. Conservancy officials told us that because of the organization's preservation mission, some members generally do not favor revenue-generating activities on its lands.

The Conservancy requires all of its preserves and other land units to strive to be self-sufficient, generating revenue to cover both their operating and capital costs. In the past, the Conservancy acquired lands for retention without endowments to cover their operating costs. While the Conservancy now tries to have endowments, generally funded by contributions and gifts, for all of its lands, few land units have large enough endowments to generate the revenue required to cover their operating costs. As a result, they supplement their endowments with

revenue generated by fund-raising efforts. Moreover, while the preserves and other land units are also expected to cover their capital costs, land acquisition costs are paid by the Conservancy's state offices and are not included in the preserves' annual budgets.

Because all of the Conservancy's land units are expected to strive to be self-sufficient, the preserves generally retain the revenue they generate. Revenue generated by the Conservancy's home office, usually through donations, after covering the home office's costs, is allocated as much as possible to the preserves in the geographical areas where the funds were raised. However, because not all preserves are able to generate enough revenue to cover their costs, the Conservancy funds their shortages. The Conservancy does not require its preserves to fund the home office's or other preserves' costs, but state offices have the authority to propose transferring funds among preserves and other land units.

In the organization's view, although the Conservancy thinks of itself as entrepreneurial, striving for environmental and economic compatibility, and although each preserve must strive to be self-sufficient, everyone in the organization must support its overall mission. A Conservancy official told us that employees do not have difficulty accepting transfers of funds from their preserve to another preserve that cannot cover its costs because they believe in and are dedicated to the organization's overall mission. A preserve may also borrow funds from a reserve in the home office, but borrowed funds must be repaid.

The Niobrara Valley Preserve is unusual among the Conservancy's land units in that most of its revenue is generated by a commercial activity—grazing—rather than by an endowment and/or fund-raising efforts. While grazing revenue varies with factors such as weather conditions and the price of beef cattle—and in some years grazing revenue has not covered Niobrara's costs—grazing, on average, provides at least 80 percent of the preserve's total revenue. Over about the last 10 years, revenue from all activities on the preserve has been sufficient to cover both operating and capital costs, other than the costs to acquire the land, which were paid by the Conservancy.⁴

Grazing

To achieve its goal of maintaining and/or enhancing biodiversity, the Conservancy manages Niobrara to replicate the historic use—grazing by

⁴The Conservancy's home office pays a small part of the salary of Niobrara's manager because he performs some duties for the entire organization.

bison and cattle—that resulted in diverse plants, animals, and natural communities. Thus, bison and cattle grazing is used primarily as a tool to accomplish a desired ecological condition. In addition, grazing on the preserve demonstrates that a historical commercial activity can, in certain geographical areas and under certain conditions, play a positive role in accomplishing both ecological and economic objectives by restoring or maintaining the health of the land while generating cash flows and maintaining a way of life.

Niobrara obtains grazing revenue from two sources—leases for use by privately owned cattle and sales of Niobrara-owned bison. The preserve uses information on grazing lease values in the area to negotiate fair-market-value lease rates annually. Bison grazing was added to diversify the revenue sources while maintaining the historic use of the land.

Other Activities and Uses

In addition, the Conservancy allows, but does not encourage, public access for other activities and uses, including deer and turkey hunting, which is limited to certain areas of the preserve. The Conservancy also gives canoeists access to the preserve, which is bordered by the Niobrara River. Fees are charged for hunting on Niobrara. In the past, these fees were set to recover only the costs of administering the activity rather than to make a profit. However, beginning in 1997, Niobrara increased hunting fees for season permits to \$100 for deer and \$50 for turkey. The Niobrara manager considers these rates fair market value because they are based on rates charged for access to private lands in other states. However, Niobrara's rates are somewhat lower than those rates because hunting fees generally do not exist in the vicinity of Niobrara.

Some wood products are also sold. However, harvesting wood products, like bison and cattle grazing, is used as a tool to accomplish a desired ecological condition. Thus, unwanted trees are removed to maintain the desired diversity of plants, animals, and natural communities. In addition, some hay is sold. Niobrara occasionally receives funds from the Conservancy's Nebraska state office for specific projects—for example, the state office is currently providing funds to build a corral; this funding is reflected in Niobrara's operating budget as a contribution, offsetting normal operating expenses.

The Conservancy is considering trying to generate revenue from other activities on Niobrara. For example, it planned to try to lease a part of the

preserve to a hunting outfitter for \$1 an acre, which is believed to be fair market value for similar leases in other states, although such leases are not normal in the vicinity of Niobrara. The outfitter would have exclusive access to that part of the preserve and would be free to establish a rate for individual access. In addition to generating revenue for the preserve, this approach would demonstrate to other ranchers in the area that they could lease their lands for similar activities, generating revenue while maintaining biodiversity. The Conservancy is also considering charging canoeists for using Niobrara, thus better controlling public access to the preserve. Finally, Niobrara has been approached by ranchers to sell its expertise on prescribed burning, which it has been using on the preserve to allow fire to play its natural role in accomplishing desired ecological conditions.

Niobrara did not have an endowment when it was purchased. However, as the Conservancy has moved to require that all of its lands be endowed, Niobrara has developed an endowment from surplus revenue, fund-raising, and sales of some of its land. Funds generated by the endowment are annually budgeted as part of the preserve's revenue. However, in years when revenue from other sources is adequate to cover operating costs, endowment funds are not used.

Because it is expected to strive to be self-sufficient, the preserve has also taken actions to reduce its costs. For example, it has consolidated facilities and replaced inefficient equipment.

As is consistent with the Conservancy's policy of transferring funds from a profitable preserve to another preserve that cannot cover its costs, revenue generated on Niobrara has occasionally been transferred to other land units. For example, in recent years revenue generated on Niobrara has been transferred to another preserve in Nebraska.

Environmental Management and Protection

The Conservancy's mission is to preserve biodiversity by protecting species' habitats. Niobrara is managed to achieve historical ecological conditions, including diverse grassland plants, animals, and natural communities. While the preserve is expected to strive to be self-sufficient and relies heavily on grazing for revenue, grazing is viewed primarily as a tool to accomplish the desired ecological conditions, according to Niobrara's manager.

The Conservancy monitors and evaluates the condition of Niobrara's grazing pastures annually and matches their condition with lessees' needs. It then uses this information to plan where, when, and by how many animals grazing will be allowed. According to the terms and conditions of the leases, the Conservancy reserves the right to move or rotate the lessees' cattle among the preserve's pastures during the grazing season in accordance with range conditions.

Although grazing on the preserve demonstrates that a historical commercial activity can, in certain geographical areas and under certain conditions, play a positive role in accomplishing both ecological and economic objectives, the Conservancy has made clear that when a choice must be made, preserving biodiversity has priority over generating revenue. For example, while prescribed burning on the preserve allows fire to play its natural role in accomplishing desired ecological conditions by controlling tree growth and returning valuable nutrients to the soil, it may reduce the revenue from grazing that might otherwise have been generated in certain years. In addition, the Conservancy controls hunting, visitation, and other activities that give the public access to the preserve and may thus impede the maintenance of historical ecological conditions.

Accountability for Results

Under the Conservancy's decentralized management, state offices and land units have considerable autonomy and discretion to interpret and apply the organization's overall mission, policies, and procedures. Accordingly, the Conservancy holds its managers at every organizational level accountable for meeting their fiscal and performance goals. Each state office and land unit prepares both an annual budget, which must include justifications, and an annual operating plan, which must include performance goals. The budgets and plans are reviewed and approved by officials in the Conservancy's state, regional, and home offices. Unit managers then report quarterly on their progress in meeting the agreed-upon goals.

According to Conservancy officials, Niobrara's performance is measured by comparing the extent to which desired ecological conditions are restored and maintained on the preserve and on surrounding lands. Progress toward achieving the desired conditions is measured, in part, by monitoring species' populations and habitats.

The National Audubon Society's Paul J. Rainey Wildlife Sanctuary

Highlights

- The 26,000-acre Paul J. Rainey Wildlife Sanctuary in Louisiana is unusual among the National Audubon's about 100 wildlife sanctuaries in that it is 1 of only 2 that generate significant revenue from a commercial activity—a natural gas well. Revenue from the well is forwarded to Audubon's home office and then distributed with other revenue to the sanctuaries by way of annual operations and capital budgets.
- Cattle grazing on Rainey also generates revenue for Audubon. To achieve the sanctuary's sole objective of conserving bird habitat, Audubon uses grazing as a tool to accomplish the desired diversity of plants, animals, and natural communities. Audubon does not own any cattle. Rather, it leases its land for grazing by privately owned cattle.
- Rainey's managers are not held accountable for generating a certain level of revenue. Rather, they are held accountable for accomplishing the society's mission of conserving and restoring natural ecosystems and the sanctuary's sole objective of conserving bird habitat.
- Audubon officials believe that the gas well and livestock grazing on the sanctuary demonstrate that commercial activities can, in certain geographical areas and under certain conditions, be compatible with conserving and restoring natural ecosystems. However, they stress that the society's mission, Rainey's objective, and the terms and conditions of the lease agreements make absolutely clear that when a choice must be made, conserving Rainey's natural ecosystems and bird habitat has priority over generating revenue and that conflicts will be resolved in favor of protecting biological diversity.

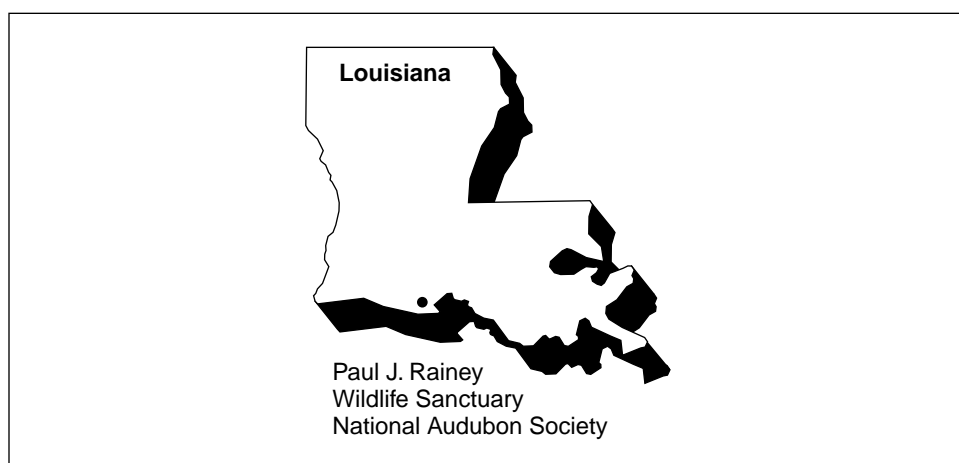
Background and Goals

The National Audubon Society is a nonprofit organization with over half a million members in over 500 local chapters. Its mission is to conserve and restore natural ecosystems, focusing on birds and other wildlife, for the benefit of humanity and the earth's biological diversity (the diversity of plant and animal communities). To help accomplish its mission, Audubon owns and manages about 100,000 acres of land in about 100 wildlife sanctuaries and other nature centers in the United States. In addition, some local chapters own and manage additional lands in other sanctuaries. Audubon also lobbies on behalf of nature conservation and environmental protection and funds environmental awareness education, scientific research, and data gathering.

Appendix VII
The National Audubon Society's Paul J.
Rainey Wildlife Sanctuary

The Paul J. Rainey Wildlife Sanctuary near Abbeville, Louisiana, fronts the Gulf of Mexico and is the largest of Audubon's wildlife sanctuaries, comprising about 26,000 acres (most of which are wetlands), or about 26 percent of the national society's landholdings. (See fig. VII.1.) Land for the sanctuary was donated in 1924 for the sole purpose of providing habitat for birds.

Figure VII.1: Location of the Paul J. Rainey Wildlife Sanctuary



Revenue Generation and Financial Self-Sufficiency

As a nonprofit organization, the National Audubon Society does not have a goal of making a profit. However, its ability to spend money to fulfill its mission depends on its ability to raise money. The majority of Audubon's revenue comes from contributions, bequests, membership dues, and investment earnings. In fiscal year 1996 (ending June 30, 1996), these sources accounted for 78 percent of the society's \$45.7 million in total revenue. Another \$732,000, or about 2 percent, was generated by a natural gas well on Rainey. The remaining 20 percent came from various other sources, including the sale of merchandise, fees for admissions and activities, grants, and advertising in the society's bimonthly magazine.

In the past, Audubon accepted donations of land without endowments to cover operating costs; however, it now requires all donated lands to have such endowments. The sanctuaries do not generally retain the revenue that they generate, forwarding them instead to Audubon's home office. Audubon then distributes the revenue to the sanctuaries by way of annual operations and capital budgets. The home office funds capital expenditures at its sanctuaries, and the sanctuaries then depreciate these costs in their annual operating budgets.

Rainey is unusual among Audubon's sanctuaries in that it is one of only two that generate significant revenue from a commercial activity—a natural gas well.¹ Oil and gas development on the sanctuary began in the 1940s. Audubon officials told us that there is no historical documentation on the process that resulted in the decision to develop the sanctuary's oil and gas resources; however, they believe that the decision was based, at least in part, on the wishes of the donor's heirs. According to Audubon officials, it is known that the document conveying the land to Audubon was amended at that time to split the oil and gas revenue between Audubon and the donor's heirs.

Land at Rainey is leased to an oil and gas development company, which pays Audubon a royalty based on the net value of production. Net value is based on the price obtained by the developer for the gas, and the lease contains controls to ensure that the price is the market price and is beneficial to Audubon. For example, the developer would not be allowed to dump the gas on the market at a low price if a higher price were attainable. Audubon believes that the royalty rate is competitive with that of other gas leases in the United States.

Over the years, several wells were developed on the sanctuary, but only one well continues to produce gas today, and its production future is uncertain. At their peak in 1985, the wells provided over \$900,000 in royalties to Audubon. However, in fiscal year 1994, Audubon received only \$96,000, which did not cover all of Rainey's costs that year. Subsequently, production from the well increased and generated about \$732,000 in royalties to Audubon in fiscal year 1996. However, Audubon believes that the well will be shut down before long because the gas supply will run out.

Cattle grazing on Rainey also generates revenue for Audubon. To accomplish the sanctuary's sole objective of conserving bird habitat, Audubon uses grazing as a tool to achieve the desired diverse ecological conditions. Audubon does not own any cattle. Rather, it leases its land annually for use by privately owned cattle. Grazing generally generates revenue of less than \$10,000 a year.

Audubon allows public access to some of its sanctuaries—sometimes at no charge and sometimes for an admission fee. However, there is no public access to Rainey, except by special arrangement with the sanctuary.

¹The other is Corkscrew Swamp Sanctuary, which generates significant revenue from admission fees.

Environmental Management and Protection

As discussed, Audubon's mission is to conserve and restore natural ecosystems, focusing on birds and other wildlife, for the benefit of humanity and the earth's biological diversity, and Rainey's sole objective is to conserve bird habitat. While grazing is viewed primarily as a tool to achieve the desired ecological conditions on the sanctuary, disagreement exists within the organization over the appropriateness of oil and gas development on a wildlife sanctuary, according to Audubon officials. On the one hand, revenue generated by the well is used to support the society's mission. On the other hand, some members believe that such a commercial activity on an Audubon wildlife sanctuary is, by its very existence, incompatible with Audubon's mission.

The lease for the well on Rainey contains stipulations that, according to Audubon officials, are adequate to protect the environment. For example, the lease states that

"The lands described in the lease . . . [are] maintained by the National Audubon Society as a wildlife refuge. Lessee herein takes cognizance of this and agrees to conduct its operations in conformity with these purposes. [Audubon] declares its intention to require that the environment be protected. Lessee agrees to exercise reasonable care and prudence."

The lease charges the lessee with, among other things, (1) avoiding water pollution and well overflow; (2) complying with state wildlife and conservation standards and limits on seismic activities; (3) appropriately disposing of waste from operations and personal waste; (4) obtaining approval from Audubon for the construction of all installations; (5) minimizing marine traffic and limiting its speed; and (6) prohibiting employees from hunting, trapping, and fishing on the sanctuary. According to the terms and conditions of the lease, the lessee is responsible for damages and Audubon is entitled to injunctive relief against the lessee for violations. The lessee also acknowledges Audubon's "absolute right to control surface operations in the interest of wildlife" and states that "in no event will [Audubon] be responsible to lessee in any manner whatever when invoking such control, whether by injunction or other remedy."

The sanctuary manager told us that the sanctuary's employees constantly monitor the well's operation. In addition, because Rainey is adjacent to a state fish and wildlife refuge, a state biologist also monitors the management and operation of the sanctuary.

Audubon officials believe that the gas well and livestock grazing on the sanctuary demonstrate that commercial activities can, in certain

geographical areas and under certain conditions, be compatible with conserving and restoring natural ecosystems. However, they stress that the society's mission, Rainey's sole objective of conserving bird habitat, and the terms and conditions of the lease agreements make absolutely clear that when a choice must be made, conserving Rainey's natural ecosystems and bird habitat has priority over generating revenue and that conflicts will be resolved in favor of protecting biological diversity.

Accountability for Results

Audubon holds its sanctuary managers accountable for meeting fiscal and performance goals. Each sanctuary prepares both an annual operations and a capital budget, both of which include justifications for planned expenditures, and an annual work plan for achieving environmental objectives. The budgets and plans are then reviewed and approved by Audubon's home office. The annual work plans are the sole measure of performance. Sanctuary managers report monthly on their progress in achieving the objectives. There are no personal awards for achieving or exceeding agreed-to objectives and/or reducing expenditures. However, when sanctuaries have special projects that need funding, Audubon usually allows them to retain any funds they may raise in excess of their operating budgets, to be used for their special projects.

Clearly defined mission priorities to conserve and restore natural ecosystems and bird habitat on Rainey allow Audubon to hold the sanctuary's managers accountable for their performance. Audubon uses indicators or proxies of progress, such as bird counts, to measure progress toward conserving and restoring ecosystems. For example, the sanctuary's songbird population has increased in recent years. However, Audubon has no measure of performance for generating revenue, and therefore Rainey's managers are not held accountable for generating a certain level of revenue.

International Paper's Southlands Experiment Forest

Highlights

- International Paper is a business, and its primary goal is to make a profit. The 16,000-acre Southlands Experiment Forest in Georgia is unique within the company's holdings because, in addition to supplying timber, as the company's other forests do, it is the only designated research forest, and its staff participate in developing International Paper's national policy on forestry issues.
- The annual budget for Southlands separates its timber operations from its research and policy functions. Southlands succeeds in managing its timber operations to generate net income.
- Southlands derives about 70 percent of its revenue from timber sales, 25 percent from recreational hunting, and the remaining 5 percent from agricultural leases. This revenue, like that generated at other International Paper forests, is not retained by the forest; rather, it goes to the company. Each forest prepares annual operations and capital expenditure budgets, as well as a timber revenue budget; the company reviews and approves these budgets and funds the expenditure budgets.
- Although its primary goal is to make a profit for its shareholders, International Paper allows the public to conduct certain recreational activities—such as horseback riding, Scout camping, and school use—on the forest at no charge, as a service to the community.
- Southlands is within the historic range of the endangered red-cockaded woodpecker, and some of these birds inhabit Southlands. According to Southlands officials, Southlands manages forest stands inhabited by the woodpecker to protect and enhance the species and its habitat. In addition, according to Southlands' manager, International Paper has been an industry leader in developing and practicing the industry's Sustainable Forestry Principles. These principles set standards for managing industry-owned forestlands that are used for producing timber and address activities such as protecting water quality and riparian areas, clear-cutting, and maintaining biological diversity.

Background and Goals

International Paper is a major publicly owned U.S. corporation that manufactures a wide variety of paper and other products. The company is the majority shareholder in a separate publicly traded business, IP Timberlands, Ltd., that owns or controls most (over 6 million acres) of the U.S. forestlands formerly owned or controlled by International Paper. Over two-thirds of the lands are in the southeast, and the remainder are in

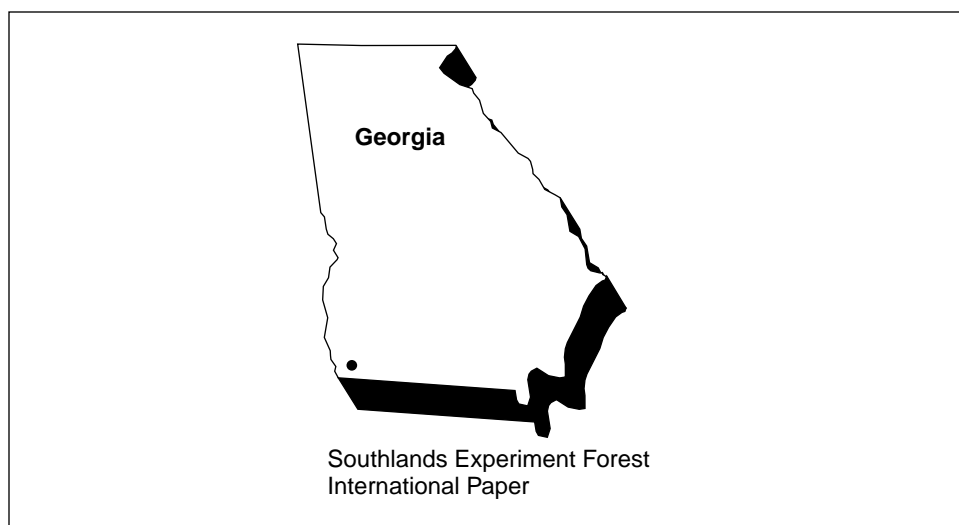
**Appendix VII
International Paper's Southlands
Experiment Forest**

the northeast. Employees of International Paper manage U.S. forests in units as large as 250,000 acres. International Paper also owns interests in forestlands in New Zealand.

International Paper is a business whose primary goal is to make a profit. However, the company also takes pride in being a forest industry leader in trying to operate in an environmentally responsible manner, as evidenced by its motto, "we answer to the world." Essentially, International Paper depends on its lands to make a profit over time, so it must ensure that the lands and their forests remain healthy and productive. Therefore, the company strives to integrate economic and environmental objectives in its decision-making.

One forest still directly owned by International Paper is the 16,000-acre Southlands Experiment Forest near Bainbridge, Georgia. (See fig. VIII.1.) Besides supplying timber, as International Paper's other forests do, Southlands is the company's sole designated research forest, and its staff participate in developing International Paper's national policy on forestry issues. Southlands was designated as the company's research forest in 1957, in part because its soils, vegetation, and topography are representative of those on most of International Paper's southeast U.S. forests.

Figure VIII.1: Location of the Southlands Experiment Forest



Southlands' goal is to demonstrate the long-term sustainability of a forest industry forest. Specifically, International Paper has directed Southlands to conduct research into increasing the company's profits by improving timber operations—that is, by growing higher-quality trees faster. Knowledge developed at Southlands is then transferred to the managers of International Paper's other forests.

Revenue Generation and Financial Self-Sufficiency

In 1996, International Paper's net sales were over \$20 billion. The company manages most of its forests to produce timber and realizes most of its revenue from its timber and manufacturing operations. The company's timber forests also generate a small amount of revenue from other activities, including public access fees for outdoor recreation. The company has also diversified its manufacturing somewhat, moving away from producing mostly paper products, to help smooth the effects of business cycles in the paper industry.

Revenue generated on International Paper's forests is not retained by the forests; rather, it goes to the company. Each forest prepares annual operations and capital expenditure budgets, as well as a timber revenue budget, and the company reviews and approves these budgets and funds the expenditure budgets. The costs to reforest tracts harvested for timber are capital costs.

Timber Operations

About 70 percent of Southlands' revenue is from timber sales. Because Southlands is not located near one of International Paper's mills, it sells its timber to other buyers. Timber is sold by sealed bids on a per-ton basis. Clear-cutting² a tract is the norm, and the buyer is expected to clear the tract within a certain time. Trees are also thinned to achieve specific objectives, such as removing weak or diseased trees, improving the overall vigor of a stand, creating a high-quality stand for hunting, or managing habitat for nongame wildlife species, including the endangered red-cockaded woodpecker.

Recreational Hunting

About 25 percent of Southlands' revenue is from recreational hunting. Southlands did not charge the public to hunt or fish on its lands until the 1970s. Hunters are still required to obtain a state hunting license, and state fish and game officers enforce state hunting regulations on the forest.

²Clear-cutting is a timber-harvesting method that creates an even-aged stand by removing virtually all of the merchantable trees from an area at one time.

According to Southlands' manager, the decision to begin charging to hunt on the forest was made to control public access and to generate revenue.

Southlands currently has five types of hunting arrangements. The forest (1) leases one tract, considered a premium hunting and fishing location, to a hunt club for its exclusive use; (2) periodically leases other tracts to other hunt clubs; (3) conducts one 3-day public hunt each year, for which it charges a fee and requires hunters to receive training provided by Southlands on hunting ethics and deer herd management; (4) charges an outfitter a per-person fee to bring groups of hunters on the forest for 3 days four times a year; and (5) sells season permits to its employees. All leases and fees—other than the employees' season permits—are at fair market value, according to Southlands' manager.

According to Southlands' manager, some members of the public resent Southlands' decision to charge for hunting and some vandalism has occurred, apparently in response to the decision.

Agricultural Leases

The remaining 5 percent of Southlands' revenue is from agricultural leases. The leases are part of a research project to determine how well trees grow on land that has been used to produce agricultural crops. The project is being phased out and will no longer generate revenue.

Cost Reduction Efforts

International Paper's biggest cost is personnel. In the past 10 years, the company has reduced its workforce by employing new technology, including information management systems, that allow the company's foresters to better manage forest and soil inventory data and mapping needs. The Southlands manager told us that it was impossible to quantify the personnel reductions due to cost-reduction efforts at either International Paper or Southlands because other factors, such as acquisitions and disposals of companies and/or properties, cause changes in personnel numbers.

Values and Concerns That Reduce Net Income

Although the primary goal for International Paper is to make a profit for its shareholders, social and ecological values and concerns sometimes reduce net income from its forests. For example, although the company now charges the public to hunt or fish on Southlands, it makes other recreation on the forest available free of charge, as a service to the community. Activities include horseback riding, Scout camping, school use, picnicking,

history-related activities, and hiking. Southlands controls public access to prevent people from being harmed by, or from conflicting with, timber operations.

Complying with the requirements of federal environmental laws reduces revenue. For example, section 9 of the Endangered Species Act and its implementing regulations generally prohibit the taking of threatened and endangered fish and wildlife species.³ To comply with this requirement, International Paper has dedicated certain lands to the protection of listed species and, on other lands, has found ways to minimize and/or mitigate the impact of timber operations on the species and its habitat. Southlands is within the historic range of the endangered red-cockaded woodpecker, and some of these birds inhabit Southlands. Southlands manages forest stands inhabited by the woodpecker to protect the species and its habitat. Nevertheless, according to a Southlands official, the revenue lost through these protective measures is at least partially offset by revenue gained through sales to customers who choose to buy products from International Paper in large part because they perceive the company as being protective of the environment.

Environmental Management and Protection

To provide the raw material required for the wide variety of products that it manufactures, International Paper manages its forests primarily as tree farms. That is, it grows and harvests trees using agricultural production techniques such as clear-cutting, planting replacement stands at optimum densities, periodically thinning the stands, and controlling insect infestations and disease to produce higher levels of timber than would be produced by natural succession. However, the company recognizes that to ensure the long-term sustainability of its timber resource and to continue to generate a profit for its shareholders, it must manage its forests in an environmentally responsible manner and sustain the health of its lands.

International Paper has been an industry leader in developing and practicing the American Forest and Paper Association's Sustainable Forestry Principles. These principles set standards for managing industry-owned forestlands that are used for timber production. The principles address activities such as conducting research on forests and wildlife, reforestation, protecting water quality and riparian areas, clear-cutting, maintaining biological diversity, managing waste, and using chemicals.

³"Taking" is defined broadly and includes killing, harming, or harassing a protected animal species and, in certain instances, modifying the species' habitat.

International Paper has also entered into various partnerships and agreements with environmental organizations. For example, the company has entered into a partnership with the National Audubon Society to manage 30,000 acres in South Carolina for both timber production and environmental protection. Because it is a research forest, Southlands has a greater number of partnerships and agreements with environmental organizations, government agencies, and universities than other International Paper forests. For example, the forest has entered into a partnership with a local nonprofit ecological center to conduct research on the longleaf pine.

An indicator of an organization's compliance with the requirements of federal environmental laws and regulations is the number of legal challenges to its land management decisions and timber sales. According to Southlands' manager, there have been no legal challenges to the forest's management practices. In addition, according to Southlands' manager, local employment levels are good, helping to temper potential opposition to Southlands' environmental protection efforts.

Accountability for Results

International Paper's forests are expected to generate net income for the company and its shareholders. Therefore, the company sets annual revenue goals for each forest except Southlands.

The annual budget for Southlands separates its timber operations from its research and policy functions. Southlands manages its timber operations to generate net income; however, the company recognizes that Southlands' research and policy functions sometimes require operational decisions that do not seek to maximize timber revenue. Consequently, the company does not officially require the forest to make a profit from its timber operations and does not set annual revenue goals for it. Nevertheless, because Southlands' goal is to demonstrate the long-term sustainability of a forest industry forest and the company could eliminate Southlands' research and policy functions if the forest did not generate some revenue, Southlands annually proposes revenue targets for approval by the company. According to Southlands' manager, the company expects Southlands to justify its revenue targets and to measure performance, in part, by the extent to which it meets the targets. The company also occasionally requires Southlands to increase timber revenue to help International Paper's overall performance.

Comments From the Department of Agriculture



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Victor S. Rezendes, Director
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Washington, DC 20548

Dear Mr. Rezendes:

After reviewing the General Accounting Office (GAO) draft report which we understand will be entitled, "Forest Service: Barriers to Generating Revenue or Reducing Costs" (GAO/RCED-98-58), we do not believe it is necessary to conduct a separate meeting to present our comments. The Forest Service is in agreement with the conclusions and recommendations as set forth in the report.

Case studies of other land management areas can provide useful information when the full context of the environment that they operate in is understood. The GAO report fairly presents material regarding administrative decisions, legislative requirements and expectations, regulations, judicial interpretations, types of land managed, funding sources, societal values, and other relevant factors. While we do not have specific comments on the information presented in the nonfederal case studies, a detailed understanding of these factors is important when making comparisons between land managers or management within different time periods.

The GAO material presented on Forest Service revenue generation, costs, and accountability is largely summarized from previous GAO reports which we have already provided comments. We believe to have made some progress in the areas of revenue generation, such as recreation fees under the Recreational Fee Demonstration Program, cost reduction through significant personnel reductions, and procedural changes to improve accountability. In addition, we are implementing the Foundation Financial Information System to address our financial accountability and provide reliable expenditure and revenue information that is fundamental to addressing future progress in these areas.

Thank you for the opportunity to review and comment on the draft report.

Sincerely,

RONALD E. STEWART
Deputy Chief
Programs and Legislation

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