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Forest Service History Series

The Forest Service in the Environmental Era

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Cover photo: Mount Shuksan and Picture Lake from roadway below Mt. Baker Lodge, Mt. Baker-Snoqualmie National Forest. Photo: USDA Forest Service

Foreword

This monograph was written several years ago by former USDA Chief Historian Dennis Roth, who currently works for the USDA Economic Research Service, and Frank Harmon, now retired from the Forest Service history section. The manuscript languished unpublished until now. The purpose of the monograph is not to pretend to be a final "history" of the years between 1960 and 1980, but rather to review some of the major conflicts among the agency, national forest commodity producers (ranchers, miners, and the forest products industry), and recreational users. The Multiple-Use Sustained-Yield Act of 1960 was the independent variable that set into motion appeals, demonstrations, and court cases that incrementally altered the agency forever.

Public involvement in shaping agency management policy began with the battle to pass a Wilderness Act (1964), later escalating around preserving the remaining stands of "old-growth" timber, especially in the Pacific Northwest, using the Endangered Species Act of 1973 as a vehicle.

The changes in natural resource management required by the 1973 Act were monumental for the agency, going beyond just protecting songbirds on a district in leaving snags for nesting sites. It called upon national forests to work to maintain biological diversity. By the early 1990's what began as a plan to protect the spotted owl (along with other species in different regions) culminated in the agency endorsing a policy of ecosystem management. The change in the Forest Service was reflected in the changing composition of the work force as ecologists and wildlife biologists came to the fore, diminishing the agency's domination by foresters.

But I am getting ahead of the story told by Roth and Harmon, who focus on the issues that culminated in the passage of the National Environmental Policy Act (1969), the Forest and Rangeland Renewable Resources Planning Act (1973), and the National Forest Management Act (NFMA, 1976). Dr. Roth argues that NFMA "was the most significant law affecting the management of the national forests since the Organic Act of 1897."

Readers who want to learn about the more recent period not covered here are directed to the works of Forest Service Social Historian Jerry Williams.[1] The present publication is for those readers unfamiliar with the conflicts that beset the agency in the decades of the 1960's and 1970's that led to passage of many of the laws that determine our current policy and practices. Typically, this work reflects the interests of the authors, which means this is not an official history of the agency; instead, it is the authors' personal attempt to summarize a variety of topical material into a narrative "history" of an agency in transition.

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Introduction

The passage of the Multiple-Use Sustained Yield Act of 1960 (MUSYA) marked the beginning of a new period in USDA Forest Service history. Before 1960, the agency derived its principal mandate from the so-called "Organic Act of 1897," which stipulated that national forests could not be established "except to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. . . ." Over the years, the Forest Service and the Secretary of Agriculture provided for other uses of the national forests through the general use provision of the 1897 Act, as interpreted by the courts.

In 1929, the Forest Service promulgated its L-29 Regulations, which provided for the creation of a system of primitive areas within the national forests. This was the forerunner of the National Wilderness Preservation System that Congress established on public lands in 1964. In 1939, the agency issued its U Regulations under which the primitive areas were to be restudied and eventually redesignated as wilderness areas. The latter regulations were more rigorous and gave wilderness areas more protection than primitive areas. They prohibited timber cutting; road construction; special use permits for hotels, stores, summer homes, organization camps, and hunting and fishing camps; and most motorboat uses or aircraft landings.

The creation of primitive and wilderness areas signaled that the administration of the national forests was becoming more complex. Agency personnel began to use the term "multiple use" to describe their attempts to harmonize the different ways of using the national forests. In general, the Forest Service was able to accommodate different uses without much conflict until about the end of World War II.[2]

After the war, there arose strong opposition to Forest Service control of livestock grazing, particularly in the Rocky Mountain States of Colorado and Wyoming. Congressional hearings were held in the field during which the Forest Service was often vigorously attacked by graziers and their congressional representatives. Stockmen demanded a proprietary right to their range permits and strongly opposed reductions in grazing that were made necessary by range deterioration. However, no legislation embodying their viewpoints was passed and the ruckus subsided. The end of the war also saw a skyrocketing demand for housing as millions of veterans entered the housing market. For the first time, there were heavy demands for national forest timber, as private supplies began to run out. During the 1950's, timber harvests almost tripled, going from about 3 billion board feet in 1950 to almost 9 billion board feet at the end of the decade. During those years, the Sierra Club and the Wilderness Society also started a campaign for a congressionally legislated wilderness system because they feared that the Forest Service would diminish its own wilderness system to satisfy the demands of the timber industry.[3]

By the late 1950's, the Forest Service decided it needed legislation to support its multiple-use and sustained-yield policies. Its efforts to administer the national forests under these policies were increasingly challenged by growing and conflicting demands for forest resources. Moreover, the legal bases for these policies were, in many instances, questionable.

MUSYA set forth six major uses of the national forests: wood products, recreation, grazing, watershed, wildlife, and fish. The Act defines multiple use as the management of all the various renewable surface resources of the national forests so that they are used in the combination that will best meet the needs of the American people, and coordinated so that they do not impair the productivity of the land. Political scientist Dennis Le Master has commented that the Act was significant because it gave the Forest Service management direction. On the other hand, he believes that it has been

ineffective as a legal tool in resolving conflicts as a balancing mechanism between user groups.[4] This view has been confirmed by the passage of congressional legislation governing the management of the national forests in the 1970's. These will be discussed later.

The Kennedy-Johnson Administration

The organizational structure of the Forest Service has remained remarkably stable during the last 40 years. The agency is administered by a chief, associate chief, and deputy chiefs in Washington, DC, and is divided into three principal divisions—the National Forest System, which manages 186 million acres of forest and rangeland; State and Private Forestry, which provides technical and financial assistance to States and private landowners; and Research, which conducts basic and applied forestry research.* In the early 1960's, the agency's budget averaged approximately $375 million, most of which was (and is) spent by the National Forest System. In the 1980's, the budget averaged about $2 billion unadjusted. Receipts from timber sales, grazing, and other fees (which go into the general United States Treasury) have averaged about half the expenditures.[5]

In 1961, the National Forest System was divided into 10 regions headed by regional foresters (7 in the West; 2 in the East, Midwest, and South; and 1 in Alaska). In 1966, the Northeastern Region was abolished and its forests transferred to the Great Lakes Region, which was renamed the Eastern Region. That same year, separate offices called Areas were established in Broomall, PA, and Atlanta, GA, to administer State and Private Forestry programs in the Northeast and Southeast. (In 1982, the separate Southeastern Area was abolished and its operations were merged with those of the National Forest Regional Office in Atlanta.)

It is somewhat arbitrary to divide Forest Service history into political administrations. Its leaders have always been promoted from within and have never been installed at the beginning of a new administration. In fact, Forest Service chiefs follow a tradition of retiring before presidential elections so that their replacements have an opportunity to consolidate their positions before a new administration takes office. On the other hand, the Forest Service follows political direction from the Secretary of Agriculture and The White House, thus somewhat reflecting the character of the administration in power.

Richard McArdle was chief in 1961. He assumed office in 1952 shortly before the election, after a 20-year career as a researcher, experiment station director, and deputy chief. Eisenhower economic policies emphasized free markets and growth. As a result, the Forest Service increased production of many national forest resources, especially timber. In some ways, McArdle's tenure was a high point in Forest Service history. Budgets and personnel increased tremendously, and the agency avoided divisive political conflict.

Senator Hubert Humphrey introduced the first wilderness bill in 1956. The Forest Service and the National Park Service both opposed the bill for at least 2 years. They maintained that they could manage wilderness land without legislation. By 1958, the Forest Service dropped its opposition to the bill, but could not openly support it because it was not endorsed by the Eisenhower administration. Soon after taking office in 1961, President John Kennedy voiced his support of the bill. The Forest Service and other Federal land agencies actively testified on its behalf. The Wilderness Act was not signed into law until September 3, 1964, nearly a year after Kennedy's assassination. Most of the political compromises needed for its passage were made during his administration. Prior to 1964, Congress shaped Forest Service land management policies indirectly through the appropriations process. The Wilderness Act marked the first time Congress became directly involved in designating national forest land for a specific use. The Act placed 9 million acres that the Forest Service had administered as "wilderness" into the National Wilderness

* In 1991, the International Forestry division was established to facilitate cooperative forestry programs with international partners.

Preservation System. It required the agency to study another 5 million acres of "primitive" areas for possible inclusion in the Wilderness System.[6]

Edward Cliff became chief in 1962. In the same year, Rachel Carson's *Silent Spring* was published, a book that many historians believe ushered in the modern environment era. *Silent Spring* was an indictment of Government and industry cooperation in distributing DDT, a pesticide harmful to wildlife. Conservationists of an earlier era had generally viewed the Federal Government as an ally. Environmentalists in the years following *Silent Spring*, on the other hand, often saw it as an adversary. Many environmentalists perceived a so-called "commodity bias" in Forest Service policies, and began to see it as an obstacle in their campaign to preserve wilderness and other natural values.

began to write separate functional resource plans for wildlife, recreation, and other resources. At the same time, it experimented with land use zoning. Both of these types of planning were later incorporated into the integrated land and resource planning required by the National Forest Management Act of 1976 (NFMA).

In 1961, the agency began a two-stage planning process to divide the national forests into management zones. In the first stage, all of the nine regions wrote multiple-use planning guides that gave designations, general definitions, and broad management guidelines for several land zones. The second stage required each district ranger to prepare a district multiple-use management plan classifying all the district's land into zones and suggesting how to coordinate its various resources.

Caterpillar tractor building a road on the Mt. Baker-Snoqualmie National Forest. Photo taken by Donald Stickney in 1957. Photo credit: USDA Forest Service

During the early 1960's, the Forest Service implemented MUSYA. The Act required the agency only to give "equal" consideration to all the resources, not to manage them equally. The Forest Service responded to the rather vague language of the Act by increasing its attention to recreation, wildlife, and watershed through planning. This planning took two forms. The agency

These plans were the agency's first systematic attempt to resolve conflicts about the various uses of national forest land. They helped local land managers decide where logging and other Activities should be located. Unfortunately, most of them had chronically poor inventory data on soil stability, wildlife habitats, and other site-specific conditions. As a result, district

rangers were reluctant to establish plans any more detailed than those contained in regional office guidelines.[7]

Recognizing its need for a variety of information on land and resources in order to deal positively with issues, Congress established the Public Land Law Review Commission (PLLRC) in 1964. This was done at the insistence of Congressman Wayne Aspinall, the powerful chairman of the House Interior Committee, as part of a deal to let the 1964 wilderness bill go to the House floor for a vote. The fourth of similar land commissions (the first was in 1880), it was asked to study and recommend changes or additions to the Nation's land law. The PLLRC was composed of 19 members, including 6 senators, 6 congressmen, 6 presidential appointees, and Chairman Aspinall. It received testimony from over 900 witnesses at 10 regional hearings held between 1966 and 1968.[8] The voluminous Commission report, which took almost 6 years to complete, was summarized in 137 recommendations. Apparently out of touch with the rapidly changing times, its authors criticized the Forest Service for spending too much time and money on managing national forest resources. Such views, coupled with the proposal that "dominant use" replace multiple use, caused the otherwise excellent and certainly valuable compendium to lose much credibility with conservationists. It seemed to many that a dominant-use policy would permit timber demands to displace noncommodity uses such as recreation.

The Commission's recommendations stressed three dominant themes. First, it emphasized Congress' need to reestablish and assert its authority for managing public lands. Second, the Commission concluded that all Federal lands not specifically set aside by Congress for a particular use were eligible for disposition; this meant that national forests and national monuments could be sold, since they were set up by the President and not by Congress. The report suggested that Congress review all such reservations to see which lands should be retained and which should pass into State or private control. This proposal alarmed many people. (A decade later, the Reagan administration proposed a similar idea called "privatization." It received an equally poor reception.)

Finally, the report stresse[illegible]odity uses. It urged that timber prod[illegible] financed from timber sale receipts, a[illegible]hat timber management decisions be made "primarily on the basis of economic factors so as to maximize net returns to the Federal treasury." However, grazing permittees were exempted from paying the market value for public rangeland. The Commission was strongly committed to the concept of dominant use, particularly for timber. The Commission's recommendations were internally incompatible. Many of the specific suggestions conflicted with each other or with the basic goal of the report. The recommendations were not acted on by a Congress busy with environmental issues.[9] This was the last time a major congressional commission issued a report so favorable to the commodity uses of public lands.

Wilderness preservation soon became the dominant issue facing the Forest Service. However, this was not readily apparent to Forest Service personnel. For instance, in late 1964 the agency's director of recreation met with the Wilderness Society, hoping to reach a final agreement on which primitive areas should be recommended for inclusion in the Wilderness System. He was surprised to learn that the Society did not want to negotiate, preferring instead to let the political process determine the ultimate size of the system. The Wilderness Society and the Sierra Club were becoming aware that their strength lay in the commitment of local grassroots organizers to their own favorite wilderness areas. These organizations believed it was to their benefit to avoid political compromises until their local organizers had an opportunity to mobilize public support behind individual wilderness areas.

Within days after the passage of the Wilderness Act, the Forest Service assembled a group of wilderness experts to write guidelines for managing wilderness areas. This group interpreted the language of the act to mean that only pristine, untouched areas could qualify as wilderness, and that once in the Wilderness System, they should be managed strictly to minimize signs of human intrusion.

Anticipating that there would be strong public pressure for wilderness designation, the Forest Service hoped to convince

Congress to limit the amount of wilderness acreage by showing it the "true" costs involved in a "pure" or "strict" constructionist approach to wilderness management. This committee foresaw that the Forest Service would encounter many, perhaps intractable, problems in protecting wilderness if high standards were not used in creating them. It also feared that the agency's longstanding ability to manage the national forests as it thought best would be compromised if too much acreage were put into the Wilderness System.

At one time, many in the environmental movement also subscribed to a version of the "purity doctrine" as it eventually came to be known. In the 1940's, environmentalists had been engaged in a defensive struggle to keep certain activities and structures out of primitive areas so that they could qualify for wilderness status under the Forest Service's U Regulations.

The environmentalists' position began to change after 1964, when they realized that the Forest Service wanted to use the same strict standards to recommend wildernesses as it did to manage them. Their organizations no longer simply tried to preserve the status quo, but attempted to enlarge the Wilderness System. New roles created new perspectives for both the Forest Service and the environmentalists. The Forest Service consciously moved to a purer position when it went on the defensive. The environmentalists underwent a reverse evolution when they took the offensive.

The environmentalists found nothing in the Wilderness Act that required identical standards for management and allocation, nor would they accept the argument that the need to apply certain management techniques justified pure standards. They charged that the purity doctrine was applied selectively when the Forest Service wanted to exclude an area from the Wilderness System, usually for economic reasons.

The first test of the purity doctrine came in 1967–68 on the San Rafael Primitive Area in California. The negotiations between the Forest Service and the Sierra Club went smoothly until they became stuck on 2,200 acres that the Forest Service wanted to use as a firebreak. The agency maintained that a road and an administrative structure on this section of land made it unsuitable for wilderness designation. The environmentalists contended that it was necessary to protect the 2,200 acres as part of the condor flyway. The Forest Service won this round when Congress excluded it from the San Rafael Wilderness.

The next wilderness proposal to be considered was the Mount Jefferson area in Oregon. In that instance, Congress chose to use a more liberal standard for wilderness when it included Marion Lake, which was a semideveloped recreation site for boaters and fishermen containing an administrative site, campground, and boat storage facilities.

In succeeding wilderness bills, Congress strayed even further from the Forest Service's interpretation of the Act. It gradually became clear that wilderness was whatever Congress decided to designate as wilderness.

Two other very important campaigns to preserve wilderness areas began soon after the passage of the San Rafael Wilderness Act. They involved the East Meadow Creek area in Colorado and the Lincoln-Scapegoat area in Montana.

Beginning with the landmark Scenic Hudson Decision of 1965, in which the judge found in favor of local ad hoc conservation organizations opposing a proposed hydroelectric project that was to be licensed by the Federal Power Commission, the courts began to redefine and liberalize the conditions under which the Federal Government could be sued. Before 1965, it was generally accepted legal doctrine that the Federal Government could not be sued without its consent. East Meadow Creek gave wilderness preservationists their first opportunity to enter this new legal terrain.

East Meadow Creek was a largely undeveloped area directly west of the Gore Range-Eagles Nest Primitive Area on the White River National Forest in north-central Colorado. It was about 9 miles north of the ski resort town of Vail, which was built in 1964. In 1962, the Forest Service drew up a plan to log East Meadow Creek, and 2 years later built an access road to the border of the area. In 1968, the Forest Service decided to implement its plan.

Citizens of Vail were especially agitated. They argued that the timber sale had been planned in 1962, before the establishment of their town, which depended on recreation dollars for its existence. They contacted a lawyer, who filed a motion for a preliminary injunction in April 1969. He based his case on a section of the Wilderness Act that stated that "nothing herein contained shall limit the President in. . . recommending the addition of any contiguous area of national forest lands predominantly of wilderness value." On February 17, 1970, Judge Doyle found in favor of the plaintiffs and permanently enjoined the timber sale.

The agency realized that technically the Parker Decision (as this case is known) only applied to the Tenth Circuit. However, it was clear to many in the Forest Service that they would have to bear the decision in mind whenever they wanted to develop lands contiguous to primitive areas anywhere in the National Forest System.

The primitive area reviews and the Parker Case involved land already protected by the Forest Service or contiguous to such land. But there were millions of undeveloped acres of Forest Service land that were either contiguous to established wilderness areas or detached. Neither were covered by the primitive area reviews or the Parker Decision. Environmentalists called these de facto wilderness, a term that the Forest Service usually avoided because of the implication that de jure status was just around the corner. The Lincoln-Scapegoat area, contiguous to the already established Bob Marshall Wilderness in western Montana, was such an area.

The Lincoln back country was originally an area of 75,000 acres of undeveloped forest land on the Helena National Forest. Scenically undistinguished from "literally millions of acres in western Montana," the Lincoln back country was nevertheless an important hunting, fishing, and hiking area for people converging on it from several western Montana towns.

In 1960, the Forest Service was prepared to build a road into the Lincoln back country in order to harvest timber and construct campgrounds. A small but vocal group of local residents was able to delay these plans until 1963, when the Forest Service appointed a forest supervisor who gradually became sympathetic to the idea of preserving the area as wilderness. The Regional and Washington Offices of the Forest Service continued, however, to support partial development of the area. By 1965, the Wilderness Society and Sierra Club became interested in the Lincoln back country. Three years later, the Senate Interior Committee held hearings in Montana on a bill to place the Lincoln-Scapegoat (local wilderness enthusiasts had expanded their concern to include the Scapegoat Mountains as well) into the Wilderness System. The hearings shed some unwelcome light on Forest Service timber harvesting practices in a region subject to landslides and erosion. The bill's passage, however, was temporarily blocked by the Chairman of the House Interior Committee, Wayne Aspinall. It was signed into law 4 years later, thus creating the first so-called de facto area to become a designated wilderness.[10]

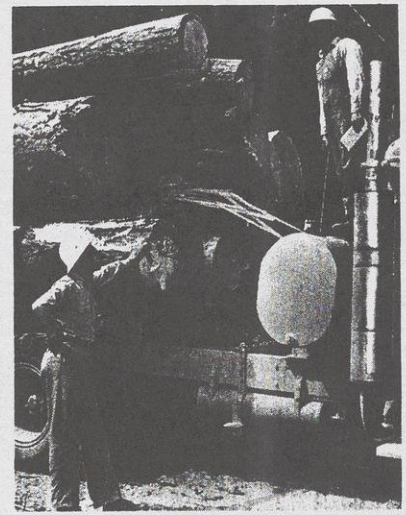
The Nixon-Ford Administrations

The Republican administration came into office seemingly more disposed towards the idea of developing public lands than the previous Democratic administrations. It left office 8 years later after presiding over the passage of some very important environmental legislation.

The National Environmental Policy Act of 1970 (NEPA) has been the most far-reaching legislation. Before NEPA coordination, land management on the national forests was undertaken mainly in consultation with special interest groups such as the timber industry, graziers, or the Sierra Club. Congress and the general public were not involved as directly in the daily operations of the Forest Service.

Most members of Congress did not appreciate the significance and scope of the Act at the time of its passage. Its most important section provided for the preparation of environmental impact statements (EIS's) on proposed actions by Federal agencies.[11] For the Forest Service, the principal actions were roadbuilding, timber harvesting, and spraying of pesticides and herbicides. The statements were to contain: (1) the environmental impact of the proposed action; (2) any adverse environmental effects that could not be avoided should the proposal be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources that would be involved in the proposed action, should it be implemented.[12]

The amount of litigation brought by environmentalists grew very rapidly, which was not anticipated, and the resulting court decisions effectively expanded NEPA's scope. The Forest Service found itself frequently in court because of lawsuits for noncompliance with NEPA. The agency responded in 1971 by altering its planning and decisionmaking processes, particularly those concerning public participation. In 1974, the Council on Environmental Quality praised the Forest Service for its implementation of NEPA. Nevertheless, the agency's courtroom battles over NEPA persisted all through the 1970's.



Ranger LeRoy Sprague on ground beside logging truck scaler on the Boise National Forest. Photo by Bluford W. Muir. Photo credit: USDA Forest Service

During the last half of the 1960's and most of the 1970's, the Forest Service was deeply involved in a major controversy over clearcutting and the increased level of timber cutting on the national forests. NEPA was the basis for lawsuits directed against Forest Service timber policies. Clearcutting (cutting all trees on a site regardless of size) became the major method of timber harvesting on national forests during this period. The foresters' term for the method was "even-aged management," since it resulted in a timber stand of all the same age. Adoption of the method followed Forest Service field studies, and it applied to hardwoods and softwoods in the East as well as the West. Environmentalists disliked it because it often left an unsightly field of stumps and because runoff from denuded land could pollute streams.

In 1964, the Forest Service announced that it would practice even-aged management on the Monongahela National Forest in West Virginia. The same year, terracing was begun on steep slopes on the Bitterroot National Forest in Montana as a method of site preparation for tree planting after harvesting by clearcutting. About this same time, clearcutting began in the high-altitude forests of Wyoming. In 1965, the Forest Service announced a proposed sale of 8.75 billion board feet of timber covering a million acres in Alaska. A few years later, these actions provoked a controversy that raged for over a decade, starting as separate local protests by individuals and groups. On the Monongahela, the principal protagonist was the West Virginia chapter of the Izaak Walton League. On the Bitterroot, it was the recreation committee of the resource conservation and development program of Ravalli County, Montana. The Sierra Club got involved late in 1968. Newspapers and magazines across the country ran sensational articles that were very critical of the Forest Service. Radio and television stations followed suit.

In 1969, the Forest Service set up its own task forces to study timber management practices on the Monongahela National Forest. Late that year, Senator Lee Metcalf of Montana asked faculty members of the School of Forestry at the University of Montana to study cutting practices on the Bitterroot National Forest. The resulting Bolle Report was very critical of the Forest Service. Early in 1970, the West Virginia House of Delegates set up a Forest Management Practices Commission to study clearcutting on the Monongahela. All four of these studies were issued in 1970. A third Forest Service study, of Wyoming forests, was issued in 1971. All the studies criticized the Forest Service. The agency's Monongahela task force found the application of clearcutting was abused greatly, and its Bitterroot task force found that clearcutting was overused and there was too little consideration of esthetics. The controversy spread to Alaska early in 1970. The Sierra Club, the Sitka Conservation Society, and Karl E. Lane brought suit against the Department of Agriculture over a big timber sale on the Tongass National Forest to U.S. Plywood-Champion Papers, Inc. (now Champion International Corp.). Eventually the contract was cancelled.

Timber cutter using a powersaw to fell a medium-size western hemlock on the Tongass National Forest. Photo taken by Leland J. Prater in 1957. Photo credit: USDA Forest Service

The Senate Interior Committee's subcommittee on public lands, chaired by Frank Church of Idaho, held 5 days of hearings on clearcutting in 1971. Ninety witnesses testified in an atmosphere of harsh and polarized conflict between environmentalists and the timber industry. The hearings resulted in a 9-page report that was issued in 1972. It contained 12 guidelines in 3 areas: timber harvest levels, use of clearcutting, and the environmental content of timber sale contracts. They were brief and generally well received. The Forest Service promised to follow them, so the controversy temporarily died down.[13]

As a result of all this, Forest Service officials began to reexamine agency policies. In October 1970, Chief Edward Cliff wrote an interoffice memorandum that was circulated to all agency employees. It said, in part: "Our programs are out of balance to meet public needs for the environmental 1970's and we are receiving mounting criticism from all sides. Our direction must be and is being changed. . . The Forest Service is seeking a balanced program with full concern for the quality of the environment." As a token of this new direction, the Forest Service accepted 13 of the 15 recommendations of the West Virginia Commission.

In 1970, the Forest Service attempted to counteract criticism that it was overcommitted to timber management and clearcutting rather than multiple-use management by adopting a document entitled "Framework for the Future." The document defined a broad range of goals and policies for future action, but it was vague and the goals too general to be implemented. More significant, while never quite confessing major management mistakes, the agency reached out to its antagonists in a way that implicitly acknowledged past errors.

Publicly recognizing and responding to critics was the agency's first step to involve the public in its decisions. It represented a significant departure from the view that foresters alone know what is best for the forest. A second publication had a more developed concept of public involvement. "Timber Management in a Quality Environment," published in 1971, went beyond assertions of improved intentions and used a question-and-answer format, photographs, historical narrative, and a brief primer on harvest techniques to raise and respond to many of the issues posed by Forest Service critics. Public involvement was expanded to mean informing people about what was being done and why. These sincere explanatory efforts proved inadequate and simply increased the outrage of many already angered citizens. Activists sought power to influence decisions, not agency show-and-tell programs.

"The Environmental Program for the Future" was the third stage of Forest Service efforts to involve the public. In it, the agency attempted to translate the goals of "Framework for the Future" into specific management programs tied to particular target dates and a 5-year program budget. It was implemented by introducing the unit planning process on the regional, area, and unit levels. The public was encouraged to participate in setting priorities and land use planning rather than simply being educated by agency personnel. This cooperative planning process explicitly attempted to overcome the timber bias of former multiple-use plans by inventorying and planning for all uses at once. The plans began by assessing land use capabilities rather than production requirements. The system emphasized managing the land rather than using it to yield products. The Forest Service described the new approach as "making plans responsive to the economic and social needs of the people involved," including both rural and urban populations, by involving the public in plan formulation and by continually adapting the plans to change. The first step in this new phase was getting public reaction to the "Environmental Program for the Future." The Forest Service spent much time soliciting and compiling public comments on the new program, then prepared a massive volume to publicize the undertaking and its results.[14] Full implementation of the program, however, was prevented by the major NEPA and Resources Planning Act (RPA) legislation that overtook it.

The evolving public involvement and planning developments were recast and redirected by NEPA's passage. The Forest Service's first reaction was that its activities protected or enhanced the environment already. Several rounds of NEPA litigation broadened its applicability and clarified the

requirements of preparing EIS's. The Forest Service responded by incorporating NEPA's rules into its new planning process, providing for a formal analysis of each project—from the building of a fence to a timber sale. This environmental assessment report concludes with a finding that either an EIS is or is not required.[15]

A major Act affecting Forest Service planning was the Forest and Rangeland Renewable Resources Planning Act of 1974, called RPA for short. It provided for a periodic renewable resource situation assessment that would include: (1) a detailed discussion of present and anticipated uses and demand for and supply of these renewable resources, with consideration of the international resource situation; (2) a general inventory of these present and potential renewable resources and opportunities for improving the yield of tangible and intangible goods and services; (3) a description of Forest Service programs and responsibilities in their interrelationships, and the relationship of these programs and responsibilities to public and private activities; and (4) a discussion of important policy considerations, laws, regulations, and other factors expected to significantly influence and affect the use and management of these lands.[16]

A renewable resource program section was included with the aim of guiding management and development of National Forest System cooperative assistance to State and private forest landowners and Forest Service research. It was to be prepared in relation to the findings of the December 31, 1974, assessment, and every 5 years thereafter. The program was to include: (1) an inventory of a full range of specific needs and opportunities for both public and private program investments; (2) specific identification of program outputs, anticipated results, and benefits associated with investments in such a manner that the anticipated costs could be directly compared with the total related benefits and direct and indirect returns to the Federal Government; and (3) a discussion of priorities for accomplishing inventoried needs. The drive behind the bill was a desire to increase congressional control over national forest management and budgetary decisions.[17]

This effort was partially successful. The Forest Service budget is often regarded as being vulnerable to cuts by the President's Office of Management and Budget when annual presidential budget requests are made. One reason for this vulnerability is that 71 percent of the Forest Service budget is controllable, i.e., within the immediate discretionary control of the President and Congress. Budgets are uncontrollable to the extent that they are affected by programs with fixed provisions of law, and outlays are made as a result of prior-year contracts and obligations. Only 26 percent of the Department of Agriculture budget, including the Forest Service, is controllable—mainly because of food stamp and price support programs. Another reason for the vulnerability of Forest Service budgets is that expenditures for forest and range management often are regarded as postponable in the short term. Since the initial costs are substantial and usually several years away, they tend to be looked upon as easily delayed until more urgent business has been completed.

However, by providing Congress with a long-term funding plan, RPA did increase Forest Service appropriations. In 1977, the first year of the 1975 RPA's effect, they increased 47 percent over fiscal year 1976. They had risen 62 percent between 1971 and 1976, but they increased 94 percent between 1976 and 1981. But RPA has not resulted in more balanced funding. Timber sales administration, management, reforestation, and stand improvement received an average of 97 and 82 percent, respectively, of the amounts called for in the 1975 RPA program. The budget for timber may have been even higher had it not been for a recession in timber prices.

In contrast, recreation, wildlife, and fish habitat management; rangeland management; and soil and water management received averages of 74, 64, 62, and 58 percent, respectively, of the amount called for in the 1975 recommended program.[18] (In 1988 and 1989, recreation and wildlife budgets began to increase significantly.)

The National Forest Management Act

The Izaak Walton League brought suit against Forest Service timber harvesting methods in Federal District Court in West Virginia. The 1973 decision stated that the harvesting of timber on the Monongahela National Forest violated the Organic Act of 1897, which provided that "dead, matured, or large growth of trees" could be sold. Since clearcutting was being used, the Forest Service was in violation of the Act. The Fourth Circuit Court of Appeals affirmed the decision in 1975, and said that Congress should resolve the issue. Late in 1975, the Federal District Court for Alaska enjoined clearcutting on the Tongass National Forest, including timber that had already been sold. In response, Congress passed the National Forest Management Act of 1976 (NFMA).

NFMA was basically a bill introduced by Senator Hubert Humphrey (D) of Minnesota. It was an amendment to RPA, which removed the restrictive wording on timber harvesting in the 1897 Organic Act. Legislative action was badly needed because strict application of the Monongahela court decision could have halved national forest timber sales, resulting in reduced supplies of wood products and rapid increases in their prices.[19] NFMA's central purpose was to reform national forest timber management policies. The Act imposed substantive restrictions on timber harvesting in the national forests and became the Forest Service's new organic Act. It established the strongest environmental and silvicultural controls ever imposed by statute legislation dealing with the national forests.[20] But forest management prescriptions were substantially fewer in number and less detailed than in the bill introduced by Senator Jennings Randolph of West Virginia, although some of Randolph's rules were included. The rules are implemented through regulations developed by the Secretary of Agriculture.[21]

NFMA also expanded and refined the forest assessment and planning requirements of RPA. It reaffirmed and further defined the concept of multiple-use sustained yield management, and outlined policies and procedures for land management planning. The Act guaranteed the public full opportunity to participate in land and resource planning for national forests.

The Act states that timber will be harvested from National Forest System lands only where: (1) soil, slope, or other watershed conditions will not be irreversibly damaged; (2) there is assurance that such lands can be adequately restocked within 5 years after harvest; (3) protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bo[illegible]ater from detrimental changes in w[illegible]temperatures, blockage of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat; and (4) 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.

The Forest Service must ensure that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber area are used only where: (1) for clearcutting, it is determined to be the optimum method to meet the objectives and requirements of the relevant land management plan; (2) the interdisciplinary review has been completed and the potential environmental, biological, aesthetic, engineering, and economic impacts of each advertised sale have been assessed, as well as the sale's consistency with the multiple use of the general area; (3) cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain; (4) the maximum size limits for areas to be cut in one harvest operation are established according to geographic areas, forest types, or other suitable criteria; and (5) such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, aesthetic resources, and the regeneration of the timber resource.[22]

The core of NFMA is the provision of standards and guidelines for national forest land management planning, which are to be put into effect through regulations developed by the Secretary of Agriculture. The Secretary was directed to appoint a committee of scientists outside the Forest Service to assist in developing the regulations. Seven college professors were chosen. They reviewed the draft regulations at 18 public meetings. The final regulations went into effect November 5, 1979. They were divided into an introduction, a part detailing the planning procedures, and a part on management standards and guidelines for vegetation manipulation, timber harvesting, protection of riparian habitat, conservation of soil and water resources, maintenance of diversity of plant and animal species, and timber harvest scheduling.

The planning process was designed to take place continuously among national, regional, and individual forest levels. Forest plans were required to address the goals, targets, and objectives contained in the regional plan and to give on-the-ground direction. Planning information goals, targets, and objectives were to flow downward, while information on resource inventories and productive capabilities was to flow upward. The technical quality of the regulations was revised again by the Secretary of Agriculture for simplification, but the revisions caused such controversy that they were again expanded, until they were finally issued on September 30, 1982.[23] NFMA was the most significant law affecting the management of the national forests since the Organic Act of 1897. Before, there had been little congressional and judicial action restricting on-the-ground management of the national forests. NFMA pushed deep into the agency's traditional autonomy with substantive restrictions, almost all of which revolve around timber harvesting. Congress accurately perceived that most Forest Service actions flow from its timber program. NFMA required that the Forest Service involve the public more in its decisionmaking and hire people trained in disciplines other than forestry and engineering.

Timber remains very important to the Forest Service. Until 1988, its budget was heavily tilted toward timber. Half of all Forest Service professional employees are foresters. Many of the draft NFMA plans are oriented toward timber production. But during the last several years, NFMA has demanded that national forest staffs vastly expand their knowledge about other resources.

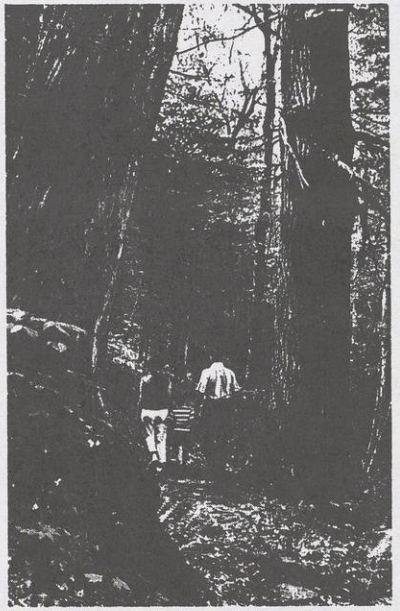
NFMA is one of the most ambitious public land programs ever undertaken. It seeks to preserve the best of traditional practices and procedures that effectively met the needs of fewer people in simpler times.[24]

The environmental movement, of course, has encompassed much more than the issue of timber harvesting. The Federal Environmental Pesticide Control Act of 1972, which amended a 1947 Act, was the first instance of strong Federal control over the application of pesticides. It also placed authority for implementation with the Environmental Protection Agency (EPA), instead of the Department of Agriculture. Amendments passed in 1975 established coordination between the two agencies. A number of pesticides of importance to forest and range managers have been reviewed to determine whether they should be reregistered. These include 2, 4, 5-T, and related herbicides used in plant control and site preparation; endrin, which protects seed from rodent predation in direct seeding operations; and lindane and benzene hexachloride, which are used against woodboring beetles. There are exemptions for Federal and State agencies to use unregistered chemicals in emergencies. In 1973, there was a severe outbreak of Douglas-fir tussock moth in the Pacific Northwest. The Forest Service and the States of Washington and Oregon requested an emergency use permit for DDT, which had been banned in 1972. The EPA granted the permit in 1974, too late to prevent heavy losses of timber. Forest Service policy is now to avoid or postpone the use of problem pesticides, and the Department of Agriculture is committed to developing pest control policies that deemphasize chemical methods.[25]

Two other Acts, the Federal Water Pollution Control Act of 1972 and the Clean Water Act of 1977, have greatly impacted forestry and range management activities, both at the Federal and State levels. The 1972 Act has also illustrated the power of citizen suit provisions in environmental legislation. Sections 208 and 404, which have strong implications for the control of forestry and range activities, both derived their present form from a suit brought by the Natural Resources Defense Council.[26]

Recreation

Recreation encompasses a broad range of activities, including automobile sightseeing, roadside camping, hunting, fishing, hiking, and snowmobiling. The national forests provide 40 percent of all recreational use of Federal lands. One-quarter of the recreational use of national forests is on campgrounds, picnic areas, and similar facilities. Ski resorts, summer homes, and other private facilities in national forests operate under special use permits issued by the Forest Service. These privately operated facilities provide only one-tenth of total recreation use days, yet they contribute over $16 million in receipts.



Family on hiking trail on Pisgah National Forest, Craggy Mountain Scenic Area, in 1966. Photo: USDA Forest Service

Because recreation is a personal and social phenomenon, rather than a physical commodity like water, timber, or forage, planning for it requires different inventory data and management concepts than does planning for other resources. The subjective nature of the recreation experience also makes it more difficult to compare the value produced by recreation management to the value created by commodity resource management.

Recreation was viewed as a secondary, incidental use of the national forests until after World War I. Gifford Pinchot, the founder of the Forest Service, believed that timber production, grazing, and water power took precedence. Congress first recognized recreation as a use of the national forests in 1915, when it authorized the Forest Service to grant permits to build summer homes, stores, and hotels in the national forests. The Forest Service began to give serious consideration to recreation in national forest planning. Recreation visitors tripled in number between 1917 and 1924. In 1919, Pinchot's successor, Henry Graves, suggested modifying timber sales to protect scenic features, roads, camping places, and the like against loss of attractiveness. In 1921, Chief William Greeley declared recreation to be a major [illegible] the national forests. Also in 1921, forester Aldo Leopold published an article urging that developed recreation sites and resource exploitation should be excluded from large areas where wilderness recreation was the highest use.

The Forest Service's departure from its original doctrine met with resistance both from inside and outside of the agency. Congress at first refused to appropriate funds for recreation, claiming that the National Park Service was in charge of recreation on Federal lands. Approval came gradually. By the 1940's, many elements of the Forest Service's current recreation planning system were already in place. They included visual management of highway and water corridors, limitations on motorized recreation, and classification of land areas for various types of recreation use.

After a temporary decline during World War II, use of national forests for recreation increased and diversified rapidly. Although funds increased, they could not keep up with demand. The increase in recreational use provoked conflicts among different recreation interests, as well as between recreationists and commodity interests. Proposals for ski areas and other developed sites encountered resistance from some conservation groups.

In 1960, MUSYA confirmed the Forest Service's authority to regulate recreation use and put outdoor recreation first in its list of multiple uses. In 1964, the Wilderness Act reaffirmed Forest Service wilderness areas and permitted future expansion of the system. In 1965, the Land and Water Conservation Fund Act authorized the Forest Service to purchase recreation lands and to charge user fees. In 1968, the Wild and Scenic Rivers Act gave priority to recreation over water development projects on rivers so classified. The National Trail System Act of 1968 forbade motorized vehicles on certain scenic trails. Also, Congress began to create national recreation areas (NRA's) on national forest lands. Each NRA was established by statute that gave detailed management direction.

The Forest Service undertook a three-part recreation planning effort in the early 1960's. Recreation management plans inventoried and classified all suitable lands

in each national forest. Composite plans gave management direction for specific areas with outstanding recreational features. Multiple-use plans identified visually sensitive areas as travel and water influence zones.

In 1973, the Forest Service began a new landscape management program to broaden consideration of visual resources throughout an entire forest rather than only the most scenic or heavily travelled areas. During the early 1970's, there was controversy over motorized recreation. In 1972, President Nixon issued an executive order requiring the agency to designate specific areas and trails of the national forests where the use of off-road vehicles (ORV's) would be permitted, and other areas where they would be excluded. By 1978, plans had been completed for 150 of the 154 national forests.[27]

Although in most cases the Forest Service recreation program was successful, in one instance it was strongly resisted when it conflicted with wilderness preservation. In December 1965, the Forest Service accepted the proposal of Walt Disney Productions for a large recreational development in Mineral King Valley, part of Sequoia National Forest bordering on Sequoia National Park in the California Sierras. A major part of the plan was for a ski area. In January 1969, the Forest Service accepted Disney's master plan, but before it issued a 30-year permit, the Sierra Club successfully filed suit in a Federal court in San Francisco to stop the project.[28] Finally, in the spring of 1978, Congress made Mineral King Valley a part of Sequoia National Park.

The Forest Service's authority over recreation has been affirmed by a series of court decisions interpreting the Organic Act of 1897 and MUSYA. NFMA regulations specifically require planning for recreation on lands not dedicated by law for any particular purpose. The regulations apply to zoning, visual resources, and ORV's. Zoning of land and water for various recreation uses is a traditional function of Forest Service planning that has become even more important in the NFMA planning process. NFMA regulations require that a broad array of outdoor recreation opportunities be included in national forest plans. The Forest Service has generally met this need through a planning system called Recreation Opportunity Spectrum (ROS). Its basic objective is to provide a diverse set of recreation opportunities to satisfy the wide range of public tastes and preferences. The ROS system divides recreation activities, settings, and experiences into six classes ranging from "primitive" to "urban."

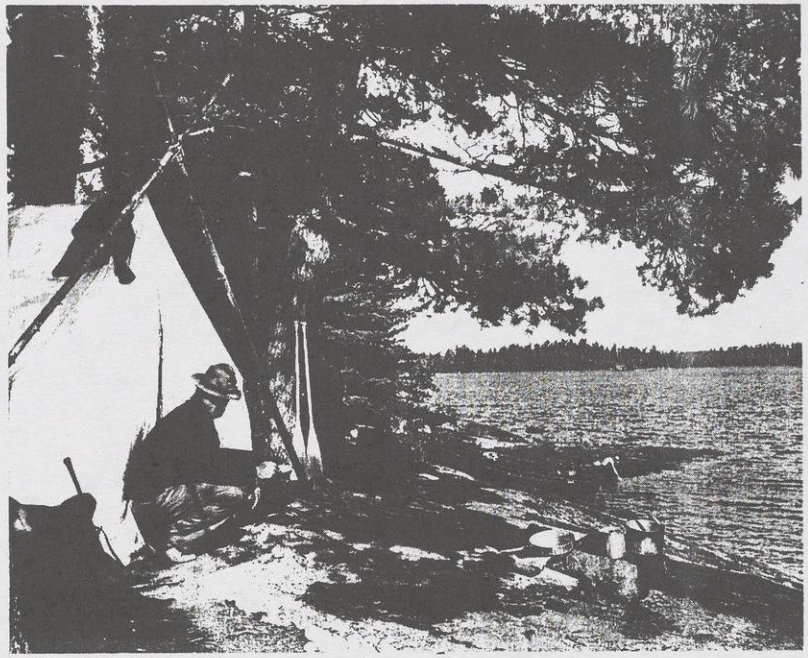
NFMA regulations call for judging the landscape's visual attractiveness and the public's visual expectation. Planners must set visual quality goals for land use zones, ranging from preservation to maximum modification. The Forest Service has broad discretion to set visual quality objectives to control the effect of various uses on visual resources, including ski resorts, mining, and timber harvesting.[29]

ORV use has increased pressure on national forests because it has caused more air, noise, and visual pollution. In particular, noise pollution disrupts wildlife and impairs the enjoyment of other recreationists. The forest plans drawn up under NFMA must minimize: (1) damage to soil, watershed, vegetation, and other resources; (2) harassment of wildlife and disruption of habitat; and (3) conflicts between ORV use and other recreation users.

The national forests encompass many rivers designated as wild, scenic, or recreational rivers by the Wild and Scenic Rivers Act of 1968. This Act requires Federal agencies to study rivers designated by Congress as potential additions to the system. The Act tells the agencies to consider potential Wild and Scenic Rivers in all planning for the use and development of water and related land resources.[30] In 1981, the Forest Service began evaluating such rivers.

Mining

Although not mentioned in MUSYA, minerals are an important resource of the national forests. The Surface Resources or Multiple-Use Mining Act of 1955 was passed to combat widespread abuses of the General Mining Law of 1872. It allowed multiple use of the surface resources of forest land under Forest Service management. Miners locating claims no longer had the right to exclusive possession of the area within their claims. This provision closed off a way often used to gain access to valuable timber stands or recreational lands. During the 1960's, the Forest Service studied the effects of strip and surface



Canoe camp on Superior National Forest, Boundary Waters Canoe Area, in 1961. Photo: USDA Forest Service

mining on the other forest resources and investigated various reclamation methods.

In 1969, American Smelting and Refining Co., applied for a special use permit to build an 8-mile access road into a molybdenum claim, located in a very scenic and remote area of the White Cloud Mountains in Idaho. Conservationists objected because the project posed a threat to wildlife, water quality, and scenic values. The Forest Service held three public hearings on the issue. The company then withdrew its application and suspended work on the claim. Since then, there has been no development on the claim because of its political sensitivity and a declining market for the mineral.[31]

The Forest Service issued new mining regulations in 1974, which were influenced by NEPA. They have greatly strengthened local Forest Service control over mining operations. The hardrock miner must file a notice of intent with the local district ranger for any operation that might cause resource disturbance. If the ranger concludes that it will likely cause significant disturbance, the miner must submit a plan of operations. The final plan must include surface environmental protection and reclamation requirements, as well as a bond to cover costs of damage or unfinished reclamation. The Forest Service can also ask the Bureau of Land Management (BLM) to initiate a challenge to the validity of unpatented (unproven) claims in western national forests.

The Mineral Leasing Act of 1920 governs leasable minerals, particularly oil, gas, oil shale, and coal. The BLM issues the leases in cooperation with the Forest Service. Coal leasing in national forests is subject to the Surface Mining Control and Reclamation Act and coal leasing amendments of 1975. It requires that national forest lands deemed unsuitable by the Forest Service for surface coal mining be withdrawn from entry.[32] The Mining and Minerals Policy Act of 1970 reaffirms the policy of the Federal Government to encourage private enterprise in the development of economically sound and stable domestic mining and mineral industries, as well as the orderly development of domestic mineral resources. The National Materials and Policy Act of 1980 strengthened the 1970 Act. Although neither RPA nor NFMA mention minerals as a resource, the 1979 NFMA regulations

instructed the Forest Service to significantly expand its minerals planning program.[33]

Wildlife

Forest Service wildlife work at first meant killing predators to protect game and domestic livestock. About 1915, the agency closed certain limited range areas to livestock grazing in order to protect game animals and birds from molestation or extinction. It cooperated with States and the Federal Bureau of Fisheries in stocking streams with fish. The major objective of wildlife management (or game management, as it was then called) was to provide good hunting and fishing.

In 1936, the Forest Service created a Division of Wildlife Management in the Washington Office. An area of the Los Padres National Forest was closed to protect a colony of California condors. During World War II, the division was greatly reduced. Several years passed before wildlife management returned to its prewar level. Wildlife habitat management consisted of coordinating and adjusting other resource management and cooperative habitat improvement projects with the States. MUSYA stated for the first time that fish and wildlife management was an important purpose of the national forests. But it maintained state control of wildlife on national forests, with the Forest Service limited to managing habitat.[34]

After 1960, the Forest Service implemented a species richness program in the East and Midwest to maintain viable numbers of many different kinds of animals within a national forest. (Until the late 1970's, this meant mainly game species or threatened and endangered species as covered in the Endangered Species Act of 1973.) The featured species program was applied primarily in the Southeast and was adapted to southerners' interest in specific animals such as deer, squirrels, and turkeys. It accomplished much the same thing. A national forest would be broken up into units, each of which emphasized a different species. The end result was the promotion of several different animal populations within a national forest or group of national forests.

These programs focused on species whose habitat needs could be defined and then meshed with the production of timber or other resources. The concept was ideal for dealing with rare, threatened, or endangered species, particularly those who habitats were threatened by other resource management activities. The system was much more difficult to implement with nonthreatened species. Choosing one particular species might result in management being undertaken that was incompatible with the needs of other species. At that time forest managers were often reluctant to reduce timber production to accommodate wildlife needs, especially if they were nonthreatened.[35]

The Endangered Species Act of 1973 listed required limits on all land use decisions that might adversely affect the habitat of any threatened or endangered species listed by the Secretary of the Interior. For other species, the Forest Service could establish wildlife management priorities in relation to forest resources.[36]

NFMA treats wildlife management in several ways. The provisions dealing with fish habitat are quite specific. National forest planning must "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives."[37] This provision was meant to limit timber management, including the conversion of hardwoods to conifers in eastern national forests. It requires agency planners to treat wildlife as an equal factor in forest management and as a limitation on timber production.

NFMA regulations for wildlife require: (1) that populations of forest vertebrates be maintained and distributed well in each national forest; (2) that certain species be used as indicators of the effects of management on forest ecology; and (3) that regulations limit management practices that result in adverse effects on fish habitat.[38]

Monitoring wildlife populations is one of the major tasks facing Forest Service planners. NFMA regulations provide that "population trends of the management indicator species will be monitored and relationships to habitat changes determined." Monitoring the populations of management indicator species is required to confirm and, if necessary, modify assumptions about the effects of timber harvesting and other management activities on wildlife. In order to meet this requirement, planners must obtain adequate inventories of wildlife populations and their distribution. NFMA regulations have significantly increased the role of wildlife planning in the Forest Service. Their principal objective is to provide sufficient habitat to sustain viable and well-distributed wildlife populations on all the national forests.

The Forest Service generally has chosen not to test the extent of its organic authority to regulate wildlife. However, in the mid-1920's, it disregarded State game laws and hired hunters to reduce an explosive deer herd on the Kaibab National Forest in Arizona in order to protect the rangelands and young trees from destruction by overgrazing. This power was upheld by the Supreme Court. In 1934, the Secretary of Agriculture issued regulations giving him the authority to set hunting and fishing seasons, set bag and creel limits, and collect fees if he determined a State was not doing an adequate job. These regulations angered the States and were replaced in 1941 by ones that recognized the States' authority to control the taking of most fish and game. These regulations are still in effect.[39]

The Forest Service has cooperated with the States on wildlife matters since 1905. In 1970, the PLLRC recommended that formal cooperative agreements be used to coordinate Federal and State wildlife programs. The Sikes Act Extension of 1974 enacted this recommendation into law. It permits the States and the Forest Service to plan and put into effect wildlife habitat construction and improvement programs. These agreements must include provisions for range rehabilitation, control of ORV's, and protection of species listed as threatened and endangered.[40]

NFMA stipulates coordination of land management planning with the planning processes of State and other Federal agencies. It calls for consultation with State fish and wildlife biologists to coordinate planning. The monitoring of management indicator species is to be done cooperatively with State agencies. The Forest Service obtains most of its inventory data from the States.

Wilderness

From 1972 to the present, the issue of roadless areas (formerly called de facto wilderness) has been at the forefront of wilderness politics. Congress continued to pass individual wilderness bills based primarily on primitive area studies, but they were overshadowed by several "omnibus" wilderness initiatives and the Forest Service's Roadless Area Review and Evaluation (RARE) studies.

In 1967, the Forest Service manual directed regional foresters to review and report by 1969 on roadless areas that might have wilderness potential. Later, that deadline was changed to 1972. The Lincoln-Scapegoat controversy had shown Forest Service officials the growing importance of de facto wilderness and convinced them of the need to conduct national RARE studies.

Associate Chief John McGuire, who was promoted to chief in 1972, recalls that he "sold" the idea to high-level departmental officials by arguing that the recently signed NEPA-required EIS's before roadless areas could be developed and that RARE would constitute a national EIS. But he also remembers that neither he nor most of his Forest Service colleagues foresaw the full implications of NEPA. They thought the Act called for relatively brief impact statements and not the massive, detailed tomes that the courts eventually required in most cases of Federal actions affecting individual sites.

Between the fall of 1971 and the summer of 1972, the Forest Service inventoried and studied 1,449 roadless areas containing 55.9 million acres. The agency held 300 meetings and received more than 50,000 written and oral comments, which, at that time, made RARE the most extensive public involvement effort ever undertaken by the Federal Government. The agency selected a list of 274 areas that could be protected while undergoing further study (the New Wilderness Study Areas). They consisted of 12.3 million acres, of which 4.4 million previously had been committed to study either by the Forest Service or Congress.

The Forest Service's hope that RARE would settle the problem of roadless areas was dashed when the Sierra Club sued it for attempting to log an area in California that had been found unsuitable for further wilderness study. The Circuit Court issued a preliminary injunction in August 1972, but before the case went to trial the Forest

Service Chief issued instructions to comply with NEPA before developing any roadless area. In most cases, this meant writing an EIS before developing an area. The court then dismissed the Sierra Club suit.

At that same time as the Forest Service was preparing for RARE, its employees were discussing alternatives for managing undeveloped areas in national forests east of the 100th meridian. Public pressure for the designation of wilderness areas in the East had developed slowly after the passage of the Wilderness Act, which placed only two such areas into the wilderness system.

In the summer of 1971, the regional foresters in Milwaukee and Atlanta proposed a "Wildwood Heritage System" (soon changed to "Wild Areas") that was to be distinct from the National Wilderness Preservation System. The public first became aware of Forest Service plans when Associate Chief John McGuire spoke before the Sierra Club's Biennial Wilderness Conference in Washington, DC, on September 24, 1971. McGuire told the audience that the Forest Service wanted to provide "primitive outdoor recreation opportunities" in the East, but in a way that would not place eastern areas in the Wilderness System. According to the agency's "purity" doctrine, eastern areas, almost all of which had once been cut-over and showed the imprint of past human activity, could not qualify as wilderness. Forest Service officials feared that if cut-over eastern areas were allowed into the system, a precedent would be established that could be used to permit the designation of "substandard" western areas.

McGuire's speech provoked a vigorous debate with and within the environmental community. The Wilderness Society was adamant in its insistence that eastern areas could qualify as wilderness. Some leaders in the Sierra Club, however, were willing to compromise with the Forest Service in the hope that eastern areas might be protected in a separate "Wild Areas" system. The Sierra Club eventually endorsed the Society's position, but not before there had been difficult meetings and some bad feelings between officials of the two organizations.

In 1973, the Senate Interior Committee (later the Energy and Natural Resources Committee) and Agricultural Committee agreed to share jurisdiction over eastern wilderness legislation, with the understanding that eastern areas would be protected under the Wilderness Act of 1964. By early 1973, the Forest Service had dropped the idea of a separate "Wild Areas" system. On January 3, 1975, President Gerald Ford signed into law the "Eastern Wilderness Act" (it actually had no name) designating 15 wildernesses and 17 wilderness study areas.[41]

The Carter Administration

In 1976, the Sierra Club thought the time was ripe to introduce the first omnibus western wilderness bill since the Wilderness Act of 1964. Most of the areas they chose were near western cities and had been excluded by the Forest Service for wilderness recommendation because they were subject to urban sights and sounds, which was the agency's last variation of its "purity" doctrine. The areas were encompassed within proposed legislation known as the Endangered American Wilderness Bill.

During most of 1976, congressional mail had been running against the bill, but by autumn the Sierra Club's campaign gained momentum, and Congress began to receive more mail and delegations of citizens favoring the bill. President Jimmy Carter's election in November 1976 considerably increased the chances that the bill would pass. During the election, Carter's staff had promised the environmentalists strong support and, in one case, had even gone beyond what they had asked for by offering to place a development moratorium on all roadless areas.

The Endangered American Wilderness Bill was still being debated (it was signed in early 1978) when Rupert Cutler became the new Assistant Secretary of Agriculture responsible for the Forest Service. Cutler had been an assistant director of the Wilderness Society before becoming a professor of natural resources at Michigan State University. Previously, the Forest Service had not taken a position on the bill, but Cutler persuaded agency officials to support it. However, Cutler had some reservations because although he was urging the Forest Service to liberalize its definition of wilderness, he did not have any criteria by which to judge whether the endangered areas were worthier of wilderness designation than the hundreds of other roadless areas in the National Forest System.

The prospect of Cutler as assistant secretary distressed some timber industry officials because of his former tenure with the Wilderness Society. Cutler met with some of them and expressed sympathy for their difficulties in making investment decisions when so much national forest land was either being studied for wilderness designation or was tied up in lawsuits.

Cutler decided to begin a second roadless inventory soon, called RARE II. Unlike RARE I, which only selected areas for further study as wilderness, he wanted as much as possible to resolve the uncertainty by recommending some areas for wilderness designation and "releasing" others. He proposed a national EIS to satisfy the requirements of NEPA. Forest Service officials did not think the idea would work and would not have done it if left to their own devices, according to Deputy Chief R. Max Peterson, who became chief in 1979. But once the order was given, the agency responded with enthusiasm. For the next year, the agency studied 62 million acres of roadless land on all of the national forests. In the process, the agency identified many potential wilderness areas of which environmentalists were not aware. Over 200,000 public responses were received, ranging from preprinted postcards to detailed letters.

On January 4, 1979, the Forest Service released its findings. It recommended 15 million acres for wilderness, 36 million acres for nonwilderness, and 11 million acres for further planning. The timber industry, which had done a good job getting its constituency to send in letters and cards, was relatively pleased with the results, although it was reluctant to admit it publicly. The environmentalists were disappointed, especially in Oregon and Washington where the amount of land recommended for wilderness was small.

After announcing the RARE II results, the Carter administration declared that all nonwilderness lands would be released for other uses under the first cycle of forest plans mandated by NFMA. The Sierra Club and the Wilderness Society did not want to sue the Forest Service because they feared that Congress might permanently release land that the agency had not recommended

for wilderness designation. However, the California Department of Natural Resources decided not to follow the advice of the wilderness organizations and brought its own suit. As a result, a Circuit Court enjoined development on 47 California roadless areas mentioned in the suit.

This lawsuit brought to the forefront the issue of "release," which was to occupy the Forest Service for the next 4 1/2 years. In 1980, Congress passed wilderness bills for the States of Colorado and New Mexico covering areas studied in RARE II. These bills stated that land considered for but not designated as wilderness would be released for other uses during the life of the first forest plans, or about 10 to 15 years. If after that period they were still undeveloped, the Forest Service could once again recommend them for wilderness designation. This formula became known as "soft" release to distinguish it from permanent or "hard" release. The Colorado, New Mexico, and Alaska bills were the only statewide wilderness bills passed during the Carter administration.[42]

Proposed Reorganization

Since the administration of Warren Harding, there have been attempts to move the Forest Service out of the Department of Agriculture into a reconstituted Department of the Interior. The Nixon administration proposed such an action. It also sought to make the Forest Service conform to the structure of "ten standard regions" followed by many other Federal agencies. Both of these proposals were overtaken by the Watergate crisis and dropped.

The most serious effort of the postwar era came during the Carter administration. President Carter pushed for the creation of a new Department of Natural Resources that would be composed primarily of Department of the Interior agencies and the Forest Service. Proposals of previous administrations had been thwarted in part because of the timber industry's opposition. This time the Carter administration secured the industry's neutrality when it agreed not to make a large RARE II wilderness recommendation in the Pacific Northwest. But this was still not enough to overcome congressional resistance, so the plan was abandoned in 1980, when the administration was preoccupied with the Iranian hostage crisis.

Three Forestry Bills

Three forestry bills were passed in 1977: the Cooperative Forestry Assistance Act, the Forest and Rangeland Renewable Resources Research Act, and the Renewable Resources Extension Act.

From its earliest days, the Forest Service has been giving forestry assistance and advice to States and private landowners. One of the agency's three divisions, State and Private Forestry, is devoted to this work. The Cooperative Forestry Assistance Act brought together in one statute authority for 10 programs in cooperative assistance: cooperative forest fire control and cooperative tree seed and plant production previously authorized by the Clarke-McNary Act of 1924; general forestry assistance previously authorized by the Department of Agriculture Organic Act of 1944; forest insect and disease management previously authorized by the Forest Pest Control Act of 1947; cooperative forest management and urban forestry previously authorized by the Cooperative Forest Management Act of 1950; cooperative tree improvement previously authorized by the Agricultural Act of 1956; rural community fire protection previously authorized by the Rural Development Act of 1972; the forestry incentives program for tree planting and timber stand improvement previously authorized by the Agriculture Act of 1970 and the Agriculture Consumer Protection Act of 1973; and white pine blister rust control previously authorized by the Act of that name of 1940.

The Cooperative Forestry Assistance Act: (1) integrated the cooperative tree seed and plant program, the cooperative forest management program, and the cooperative tree improvement program into one program of rural forestry assistance; (2) authorized financial assistance to State foresters to carry out silvicultural practices on non-Federal lands when private vendors of such practices are not available; (3) clarified the role of the State forester in the administration of the forestry incentives program; (4) limited the benefits of the incentives program generally to owners of 1,000 acres or less of private forest land; (5) expanded the forest insect and disease program to the protection of wood products, stored wood, and wood in use; (6) integrated the cooperative forest fire program with the rural community fire protection program; (7) established a rural fire disaster fund that would be available to the Secretary of Agriculture to assist States overwhelmed by a disastrous fire situation; and (8) formally established programs in management assistance, planning assistance, and technology implementation.

John Benzie counting reproduction on a mixed swamp conifer study plot, Dukes Experimental Forest, North Central Forest Experiment Station. Photo: USDA Forest Service

The Research Act authorized a comprehensive research program for forest and rangeland renewable resources, while repealing the existing, more restricted authority of the McSweeney-McNary Act of 1928. The Act authorized the Secretary of Agriculture to conduct a comprehensive program of renewable resources research in management, environment, resource protection, resource utilization, and resource assessment.

The Renewable Resources Extension Act authorized an expanded extension program to increase yields of forest and rangeland renewable resources from private lands through education. Funding of the Cooperative Forestry Assistance Act is the same as funding of the State and Private activities of the Forest Service, which have been funded at levels substantially less than those called for in the 1975 and 1980 RPA recommended programs. The 1980 RPA program called for a reduced role for State and Private Forestry. Implementation of the Extension Act has been frustrated by a lack of funding.[43]

Grazing

More land in the national forests is used for grazing domestic livestock than for any other economic use. The national forests contain 50 million acres of open rangeland, more than one-fourth of the entire system. The Forest Service also permits grazing on roughly an equal amount of forested land, raising the total to 102 million acres. Grazing is light in many areas and is usually seasonal due to the high elevation of most national forests. Commercial grazing is limited to permit sufficient forage for wildlife and to prevent the land from overgrazing.

Grazing income is not large. Fees have always been below the market value and agency costs for grazing management always exceed revenues. During the early 1980's, the Forest Service permitted 1.4 million cattle and 1.2 million sheep and goats to graze for an annual return of about $8.6 million.[44]

Passage of the 1891 amendment creating the forest reserves marked a change in Federal range policy. The Government continued to ignore grazing on public domain lands, but began to regulate grazing on the new forest reserves. At first, attention was directed to the destructive effects of sheep grazing. Although Congress did not mention grazing in the 1897 Organic Act, the Department of the Interior used its general statutory authority to regulate occupancy and to impose severe restrictions on sheep grazing. Naturally, sheepherders were outraged and were able to get the order modified. An annual permit system was established for all livestock in December 1901, and an order of preference was established for permit applicants in January 1902. The next month, the Department of the Interior decided to allow sheep owner associations to recommend the allotment of grazing permits, provided they ensured that all rules were followed. By 1903, the grazing permit system was forcing reductions in the number of livestock grazing on the national forests. Sheep owners and cattleowners competed fiercely for permission to graze. Many graziers who did not get permits simply ignored the regulations. The General Land Office obtained injunctions against unauthorized grazing in some cases, but could not get indictments.

After the Forest Service took over the reserves in 1905, several criminal prosecutions were upheld, however. In 1906, fees were imposed. Graziers' hostility to fees was mollified by recognizing advisory boards appointed by livestock associations. The boards consulted with the Forest Service on numbers and distribution of livestock. But trespass cases increased. In May 1911, the U.S. Supreme Court upheld the Forest Service's right to regulate grazing and to charge grazing fees.[45]

The Forest Service reduced livestock grazing when it was found that the range was being damaged by too many animals. These restrictions were removed temporarily after the United States entered World War I. When the excess livestock was removed, ranges were found to have been damaged, requiring further reductions. The Forest Service began to prepare range management plans for each grazing allotment, in cooperation with the permittees. In 1925, 10-year permits were issued to qualified applicants. Between the world wars, grazing was reduced by more than 50 percent, and big-game wildlife use more than tripled. By 1947, the reductions had provoked intense hostility among stockmen and strong political opposition in the West. The National Livestock Association asked Congress to curtail Forest Service authority. The House Public Lands Committee conducted public hearings in the West and made six recommendations, including a 3-year moratorium on permit reductions. The Secretary of Agriculture accepted all of them except the moratorium. Congress did not Act on the question and the controversy subsided.

Three statutes enacted in the 1970's provide general guidance for Forest Service range planning: the Federal Land Policy and Management Act of 1976 (FLPMA), the National Forest Management Act of 1976 (NFMA), and the Public Rangelands Improvement Act of 1978 (PRIA).

FLPMA requires Forest Service planners to consult with the allottees, to plan for range improvements, and to prescribe how livestock operations will be conducted. The Act gives the agency broad discretion to modify the numbers of stock and set limits on seasonal use of grazing lands. Grazing permits and leases are subject to cancellation, suspension, or modification, in whole or in part. agency planners are authorized to reexamine range conditions at any time and to adjust grazing accordingly. In general, current allottees must receive preferences on permit renewals. For the most part, the Act confirmed existing Forest Service practices.

NFMA requires that resource plans and permits be consistent with land management plans. One NFMA regulation requires planners to identify lands suitable for grazing and browsing, determine their present and future condition, and plan appropriate action to restore lands that have deteriorated. This basically restates the central purpose of Forest Service range policy. The regulation also protects wildlife on the range.[46]

PRIA established a national policy of improving soil quality, wildlife habitat, watershed, plant communities, and other elements of range condition. The PRIA also amended FLPMA to emphasize that allotment management plans must have assistance from the allottee, advisory boards, and State agencies. Third, the allotment management plans must be geared to the specific range conditions and must be reviewed periodically to find whether they have improved range conditions. Finally, Congress directed the Forest Service to begin experimental stewardship programs, a provision with potentially far-reaching effects on range planning. Their purpose is to motivate grazing allottees to improve range conditions by reducing grazing fees, which continue to be a periodic source of controversy. Allottees are allowed to spend up to one-half of their grazing fees on range improvements such as fences, stock ponds, and stock trails. The program is intended to benefit ranchers by reducing grazing fees, and the Forest Service by improving range conditions without additional appropriations. Congress has rarely faulted traditional Forest Service grazing policy; consequently, rigorous legislative standards have not been imposed.[47]

In recent years, Congress has intervened directly only once in the management of Forest Service rangelands. During RARE II, some ranchers feared that they would no longer be able to construct range improvements and use motorized vehicles in areas that became designated wilderness. Before RARE II, most of the land that went into the Wilderness System had been administered as wilderness or primitive areas for many years by the Forest Service. In most cases, grazing improvements and motorized equipment had been kept out of these areas. However, this was not the case with roadless areas in RARE II. Many of them were being used under normal Forest Service grazing procedures. Improvements and motorized equipment were common in some of these areas. Environmentalists predicted that a strict interpretation of the Wilderness Act's grazing provision would stir up political opposition and would keep some areas out of the Wilderness System. The Forest Service did not want wilderness grazing to become so permissive that it violated the Wilderness Act.

The House Subcommittee on Public Lands successfully mediated among the Forest Service, the environmentalists, and the livestock industry. Its staff drew up guidelines that permit the upkeep of improvements and the use of motorized equipment where such practices had been customary before an area went into the Wilderness System. The Forest Service agreed to apply these guidelines throughout the National Forest System, albeit with some initial reservations about their conformance with the Wilderness Act's ban on motorized vehicles. The guidelines were given greater authority when the Colorado Wilderness Act of 1980 directed the Forest Service to implement them on all the national forests. In November 1980, the agency distributed a list of "questions and answers" dealing with practical situations in wilderness grazing to all field units. The guidelines and the Forest Service's practical instructions appear to have solved the problem, for there has been general peace on the wilderness range since their promulgation in 1980.[48]

The Reagan Administration

During the last year of the Carter administration, the so-called "Sagebrush Rebellion" erupted in the West. Legislatures in Nevada and Wyoming passed bills calling for the transfer of Federal land to the States. For the most part, these bills were a reaction to the passage of a new organic Act for BLM, FLPMA. The BLM administers several hundred million acres of land in the West, many of which are contiguous to national forests. Before 1976, commodity interests (graziers, miners, oil companies, and the timber industry) were BLM's principal clients. By recognizing wildlife, recreation, and wilderness as additional uses of BLM land, the agency became more like the Forest Service.

The resentment of some western constituencies against FLMPA and other aspects of Federal land management helped elect Ronald Reagan as president. After carrying all of the States west of the Mississippi, he came into office promising to increase economic activity on public lands. His first response was to appoint James Watt, Director of the Mountain States Legal Foundation, as Secretary of the Interior. Watt was a committed foe of eastern environmentalists and a strong proponent of economic development.

Reagan's election also brought to a halt all action on State wilderness bills. The industry no longer would accept the "soft" release formula, but felt it now had the political strength to require permanent or "hard" release. In early 1981, a national "hard" release bill was introduced in the Senate. At first its chances appeared good, but it soon ran into difficulties and stalled in committee. During the next 2 years, less rigorous variations of "hard" release were proposed, but were blocked primarily by Congressman John Seiberling (D, OH), chairman of the House Public Lands Subcommittee. In the meantime, Secretary James Watt was encountering severe criticism and rousing opposition to his development policies. The political strength of environmentalists was rising, while that of the timber industry was declining. In the early 1980's, lumber prices collapsed and many purchasers of national forest timber in the Pacific Northwest found they could not economically harvest what they had contracted to buy. Distracted by this problem, the industry could not focus entirely on the release issue. Moreover, it was difficult to argue against the creation of wilderness areas at a time when there was too much timber on the market. In 1983, Congress passed so-called "buy-back" legislation that allowed many of these companies to escape from their contracts.

In December 1983, the Oregon Natural Resources Council filed a lawsuit against harvesting on Oregon roadless areas that was similar to the California lawsuit of 1980. Senator Mark Hatfield (R, OR) was concerned that his State might suffer economically and introduced a State wilderness bill with "soft" release. This action broke the impasse over release. Congressman Seiberling and Senator James McClure (R, ID), chairman of the Senate Energy and Natural Resources Committee and an advocate of "hard" release, negotiated a new release formula that was basically a modified version of "soft" release. Once this problem was settled, Congress proceeded to pass 18 State wilderness bills, placing nearly 7 million acres of national forest land into the Wilderness System. This was the greatest single increase in the national forest component of the Wilderness System since the Wilderness Act of 1964. Montana, Idaho, and Nevada were the only States not to receive wilderness Acts in 1984. (At the time of this writing in 1989, bills for these States remain stalled.)

Like his predecessor, Rupert Cutler, Assistant Secretary for Conservation and Natural Resources John Crowell (1981–84) was actively involved in establishing Forest Service policy. Before Cutler, assistant secretaries generally monitored Forest Service decisions but rarely dictated them. The growing influence of assistant secretaries is, in part, the result of the political conflict over the national forests during the last 20 years. Crowell urged the Forest Service to increase timber harvests.

In one case, he countermanded the regional forester in Portland and directed him to begin timber sales in RARE II roadless areas in order to relieve pressures on other parts of the national forests. Environmentalists responded by criticizing the Forest Service for selling timber at "below cost," i.e., selling timber for less than it cost to prepare and administer the sale. The agency argued that in many cases the costs of building roads and other improvements, usually deducted from the sale price, should be amortized over many years because they indirectly benefit recreation, fire suppression, and wildlife. In other words, using a cost accounting system that spreads the costs over several years would show that many apparent "below-cost" sales actually benefit the Government through the creation of external economies. In any case, the "below-cost" debate once again focused public attention on the Forest Service's timber program.[49]

Forest Service-BLM Land Swap

In the West, land administered by the BLM is often contiguous to Forest Service land. For many years it has appeared that management could be simplified and made more cost-effective by consolidating land through an interagency land exchange. The difficulty with this idea is that towns are frequently reluctant to relinquish Forest Service offices both because of the prestige they confer and the jobs they provide.

In 1985, the administration proposed a 35-million acre land swap between the two agencies. The Forest Service leadership was not enthusiastic about the idea, but during the next year spent considerable time planning the exchange. It soon became clear, however, that many in Congress opposed it. For instance, Nevadans were chagrined to learn that under the plan they would lose their two national forests when they were transferred to the BLM. On the other hand, Oregonians feared that the transfer of BLM's heavily timbered Oregon and California lands to the Forest Service would decrease the amount these lands paid into the State treasury. Similar concerns were expressed in other States. By the beginning of 1986, the plan was dead.

The Pilot Project

In February 1987, 46-year-old Dale Robertson succeeded Max Peterson as chief, making him the youngest chief in over 50 years. Robertson is the first chief since the Forest Service's founder, Gifford Pinchot, and his immediate successor, Henry Graves, who has been neither deputy regional forester, regional forester, or experiment station director. He came to Washington, DC, in 1980 after being a forest supervisor in Oregon and was made associate chief in 1982. During his career, Robertson became impatient with the voluminous regulations that govern Forest Service operations. While still associate chief in 1985, he began a pilot program in which several field offices were given the freedom to simplify their methods and procedures. Their only restriction was that they not do anything illegal. Several pilot units showed significant increases in productivity while lessening administrative controls. In 1987, the project was expanded to include all of the Eastern Region, as well as the Washington Office.

Backfire hits head of Brushy Creek Fire, Salmon National Forest. Photo: USDA Forest Service

Fire Control

Protecting the national forests from fire has been a major duty of the Forest Service since its beginning. Two of the handtools first used, the axe and mattock, are still used, often as a combination of both of them—the pulaski, a tool invented soon after the great northwestern fires of 1910 in Idaho and Montana. A major edict self-imposed on the Forest Service in 1935 was the 10 a.m. policy that required that all efforts were to be concentrated on putting fires out by 10 a.m. of the day following their occurrence. Smokejumpers and the dumping of water and later chemical retardants on fires began in the 1940's.

In 1956, the Navy gave the agency a surplus fleet of TBM's as air tankers. A helicopter firefighting program was launched under a cooperative agreement with the U.S. Army Corps of Engineers. In 1960, the Missoula (Montana) Equipment Development Center (EDC) was formally dedicated as an all-service fire lab. It worked on aircraft development and chemical retardants. Missoula EDC specialized in parachute accessories, portable hand and power tools, disposable fireline items, protective clothing, and physiological testing. In 1965, the Arcadia (California) EDC moved to San Dimas. It emphasized heavy equipment, ground tanker and pump testing, and helicopter accessories. In the 1960's and early 1970's, firefighters were completely refitted with flame-resistant shirts and pants, special fire shelters, hardhats, face shields, nomex hoods, and gloves. Remote sensing, data processing, simulation, and telecommunications became firefighting tools. Reducing fires through fires ignited under controlled conditions (known as prescribed fires) became a new strategy. Satellites were used to detect smoke and as communication relays; infrared (IR) mapping became commonplace; remote weather stations automatically relayed data for fire danger forecasts; and computers entered nearly all dimensions of planning, presuppression, and suppression.

In February 1967, a fire policy and procedure review committee sustained the 10 a.m. policy for normal fire seasons, but permitted leeway for pre- and post-season fires. In 1971, a fire policy meeting authorized exceptions for wilderness areas and for periods of low fire danger.[50] The Forest Service revised its fire management policy in 1978. The very rigid direction of control by 10 a.m. the following day was further modified. If a fire escapes initial attack, the land manager makes a fire situation analysis, including cost-effective fire suppression alternatives. Fire protection and use programs will be planned to be cost-effective and to protect lives, property, public safety, and natural resource management programs. The revised policy encourages land managers to make more use of prescription fire to safely burn areas with a dangerous buildup of fuels. The goal is not to control fires regardless of cost or hazard, and some fires are allowed to burn if they meet certain conditions. A national wilderness fire policy was announced in 1985, although many national forests had been following such a policy for several years. Natural or lightning-caused fires are allowed to play a role if they have had a place in producing the present forest. Additionally, agency personnel can ignite prescribed fires to prevent the buildup of fuels that might result in fires that threaten nonwilderness areas.[51] During the summer of 1988, this policy came under scrutiny when parts of Yellowstone National Park and surrounding national forests were burned. Television and newspaper reports led many people to believe that the park had been devastated and that the local tourist industry would decline. A year later it was evident that the damage was not as great as had been feared and that the land was already beginning to recover. In 1989, the new administration ordered land management agencies to put out all forest fires as soon as possible. It seems likely, however, that the natural fire policy will be reinstated in the near future when the results of the Yellowstone fires can be assessed with greater objectivity.

The Chief of the Forest Service reports to the Assistant Secretary for Natural Resources and Environment. He is responsible for the management of 191 million acres of forest and rangeland, the conduct of a nationwide program of forestry research, and the provision of technical and financial assistance to State forestry commissions and private owners of forest land. These responsibilities are encompassed within the agency's three principal divisions known as the National Forest System, Forest Service Research, and State and Private Forestry. An associate chief is second in command. There are deputy chiefs for Programs and Legislation, National Forest System, Research, State and Private Forestry, and Administration, as well as two assistant chiefs for Strategic Planning and Civil Rights.*

July 1, 1962—Edward P. Cliff succeeds the retiring Richard E. McArdle as chief.

March 1966—The Eastern Region of the National Forest System is abolished and its forests merged with those of the North-Central Region (thereafter known as the Eastern Region). One forest, the Cumberland (now the Daniel Boone), is transferred to the Southern Region.

July 1, 1972—John R. McGuire succeeds the retiring Edward P. Cliff as chief.

June 29, 1979—R. Max Peterson succeeds the retiring John McGuire as chief.

July 6, 1982—The Southeastern Area Office of the State and Private Forestry Division in Atlanta, GA, is abolished and its functions and personnel are merged with the Southern Regional Office of the National Forest System.

February 8, 1987—Dale Robertson succeeds Max Peterson as chief.

* The 1990 Farm Bill created a division of International Forestry directed by a deputy chief. Established in 1991, International Forestry facilitates cooperative forestry programs with international partners.

Notes

1. Gerald W. Williams, "Creation of Wilderness in the Pacific Northwest: The Controversy Expands," 1987; "Changing Values and the Management of Natural Resources," 1992; "Ecosystem Management: How Did We Get Here?" 1994; "Ecosystem Management: Putting the People Back In," 1994; "Administrative Units and Reorganization Efforts, 1905–1993," 1994; and "Community Stability and the Forest Service," 1995.*
2. U.S. Forest Service, *Report of the Forester* (Washington, DC: GPO, 1926), p. 36; Dennis M. Roth, *The Wilderness Movement and the National Forests* (College Station: Intaglio Press, 1988), pp. 1–6.
3. U.S. Department of Agriculture, *The Principal Laws Relating to Forest Service Activities*, Agricultural Handbook no. 453 (Washington, DC: GPO, 1978), p. 201; Roth, *The Wilderness Movement*, pp. 6–10.
4. Dennis C. Le Master, *Decade of Change* (Westport, CT: Greenwood Press, 1984), p. 7.
5. U.S. Forest Service, *Report of the Chief*, 1961–86.
6. U.S. Senate, Committee on Interior and Insular Affairs, *National Wilderness Preservation Act, Hearings*, 85 Cong. 2d sess., 1959, p. 310; Roth, *The Wilderness Movement*, pp. 10–12.
7. U.S. Forest Service, *Forest Service Manual* (Washington, DC, 1973), p. 8213; Charles F. Wilkinson and H. Michael Anderson, "Land and Resource Planning in the National Forests," *Oregon Law Review*: 64, Nos. 1 and 2 (1985), pp. 31–34.
8. Richard C. Davis, ed., *Encyclopedia of American Forest and Conservation History* (New York, MacMillan Co., 1983), p. 548.
9. Samuel T. Dana and Sally K. Fairfax, *Forest and Range Policy* (New York: McGraw-Hill Book Co., 1980), pp. 231–235.
10. Report on H.R. 3454 Report No. 95-490, Senate Committee on Energy and Natural Resources, 1977, p. 7; Chief Edward Cliff, "San Gabriel, Washakie, and Mount Jefferson Wilderness Areas," Hearings Before the Subcommittee on Public Lands, U.S. Senate, 90th Cong. 2nd sess., 1968, p. 17; Roth, *The Wilderness Movement*, pp. 13–36.
11. Le Master, *Decade of Change*, pp. 9–10.
12. Ibid., p. 13.
13. Ibid., pp. 14–19.
14. Dana and Fairfax, *Forest and Range Policy*, pp. 307–308.
15. Ibid., pp. 308–309.
16. LeMaster, *Decade of Change*, pp. 41–42.
17. Ibid., pp. 37, 42–43.
18. Ibid., pp. 150–151, 155.
19. Ibid., pp. 55-58.
20. Wilkinson and Anderson, *Land and Resource Planning*, pp. 69–72.
21. LeMaster, *Decade of Change*, p. 59.
22. Ibid., pp. 242–243.

* Copies may be obtained by writing to Gerald W. Williams, USDA Forest Service, Pacific Northwest Region, PO Box 3623, Portland, Oregon 97208. Telephone: 503/326–7744. DG:R06A.

23. Ibid., pp. 156–159.

24. Wilkinson and Anderson, *Land and Resource Planning*, pp. 371–373.

25. Dana and Fairfax, *Forest and Range Policy*, pp. 254–257.

26. Ibid, p. 254.

27. Wilkinson and Anderson, *Land and Resource Planning*, pp. 312–325.

28. Glen O. Robinson, *The Forest Service* (Baltimore: Johns Hopkins University Press, 1975), pp. 132–134.

29. Wilkinson and Anderson, *Land and Resource Planning*, pp. 324–329.

30. U.S. Forest Service, *The Principal Laws Relating to Forest Service Activities* (Washington, DC: GPO, 1985), p. 213.

31. Wilkinson and Anderson, *Land and Resource Planning*, pp. 251–255.

32. *Principal Laws*, p. 388.

33. Wilkinson and Anderson, *Land and Resource Planning*, pp. 266–268.

34. *Principal Laws*, p. 156.

35. Wilkinson and Anderson, *Land and Resource Planning*, p. 289.

36. *Principal Laws*, p. 324.

37. Ibid., p. 447.

38. Wilkinson and Anderson, *Land and Resource Planning*, p. 297.

39. Ibid., pp. 304–307.

40. *Principal Laws*, p. 370.

41. "Eastern Wilderness Act," 93rd Cong. 1st sess., Senate Report No. 93-661, 1973; Ross, *The Wilderness Movement*, pp. 37–45.

42. U.S. Forest Service, *RARE II: Final Environmental Statement* (Washington, DC, 1979); Roth, *The Wilderness Movement*, pp. 46–54.

43. LeMaster, *Decade of Change*, pp. 98–101, 168–169

44. Wilkinson and Anderson, *Land and Resouce Planning*, pp. 91–92.

45. Ibid., pp. 97–104.

46. *Principal Laws*, p. 403.

47. Ibid., p. 527.

48. USDA Forest Service, Washington Office, Legislative Affairs Records, "Wilderness Grazing" folder; Roth, *The Wilderness Movement*, pp. 58–60.

49. Ibid., pp. 1–36.

50. Stephen J. Pyne, *Fire in America* (Princeton, NJ: Princeton University Press, 1982), pp. 437–446.

51. USDA Forest Service, "Friday Newsletter," February 15, 1985.

Cornelia Bryce Pinchot
(1881 - 1960)

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A talk presented to the USDA Forest Service's Management Policy Seminar held at Grey Towers National Historic Landmark, Milford, Pennsylvania.

CORNELIA BRYCE PINCHOT (1881-1960)

By Carol Severance
Grey Towers National Historic Landmark

Cornelia Bryce Pinchot was a Modern Woman. One who wished to excel in her feminine role as wife and mother, while sporting a successful career.

> My feminism tells me that women can scrub a floor, cook a dinner, paint a picture, charm her husband, swim the Channel, bear a child and battle for the Lord - all on the same day, so to speak. And be the better for it. Her child too (CBP Manuscript).

This viewpoint evolved over years of activity in first the Suffrage Movement and later as wife of Gifford Pinchot and advocate for labor reform.

INVOLVEMENT IN THE SUFFRAGE MOVEMENT

Born in Newport, Rhode Island, in 1881, "Leila" was raised in the wealthy Victorian tradition, much as Pinchot was, with frequent trips between New York, Europe, and Newport. She was educated in private schools, and enjoyed competitive sports - especially hunting, polo, and driving. Her family background provided her with an ability to appreciate her status, while working for public good. Her father, Lloyd Bryce was an editor for the *North American Review*, paymaster general of New York and minister to Netherlands at The Hague. Her mother, Edith Cooper was the daughter of one of New York City's mayors, and granddaughter of Peter Cooper - inventor, philanthropist, and founder of Cooper Union, a tuition-free college of science and engineering.

In the spring of 1914, a columnist for the *New York Tribune* wrote: "Miss Cornelia Bryce - beautiful, cultured, charming, with the utmost of wealth & position at her command, she chooses as her chief interest, the causes of the working woman." As a young woman, Cornelia Bryce served on the board of managers of the Bellevue Hospital in New York. Her duties were to visit the hospital, manage the Nurses' Home and run the social service department. She was also involved in the study of employment in New York City, serving as a chairwoman for the women's committee to establish working rooms for women. After the disastrous Triangle Fire in 1911, Cornelia served as the fire inspector for the Committee of Safety. This committee was responsible for developing better safety laws for women employed in buildings.

> I cannot remember just when or how I first became interested in the suffrage movement - but I do know that it came more through my active interest in liberal politics than through the usual resentment against women's political discrimination per se. Many of my family had held elective offices of one kind and another. I remember more than once dining with an ex-president who took me into the smoking room to talk politics with the men after the women had left the table, and it never struck me that this was in any way unusual. I had not learned to think of myself in terms of a downtrodden and disenfranchised female (CBP Manuscript).

> I joined actively in the suffrage fight and gave considerable time to it, but I must admit that quite aside from the essential justice of the proposition, I saw women largely as a new group of voters. I worked to help enfranchise them with even more interest in their responsibilities than in their rights.

PROGRESSIVE POLITICS AND GIFFORD PINCHOT

Her earliest memory in recognition of her political heritage was handing out political literature in her father's campaign at the age of six. She met Gifford Pinchot while campaigning for former President Theodore Roosevelt during the Progressive ("Bull Moose") Party Campaign of 1912. She was one of the few persons whose whirlwind energy matched Pinchot's. And in TR's words, "she had one of the keenest political minds that I have ever known."

With wealth, energy, enthusiasm, political ambition, and the stamp of approval from TR, Cornelia and Gifford were equally matched, and very much in love. (One of Gifford's biographers said he was as much in love as a man half his age.) They were married at her parents home in August, 1914 - during the midst of his first senatorial race (she was 33, and he was 49).

She saw her association with the energetic progressive politician and conservationist as an opportunity and a challenge (Furlow, n.d.: 327). Together they worked to raise the consciousness of humankind - about its place in the world and its responsibilities. Cornelia traversed the state, speaking to individuals and handing out leaflets in support of her husband. On one speaking tour she gave as many as nine speeches a day. A landslide defeat was not a welcome wedding gift, but did not totally deflate the Pinchots.

> And if you are a woman and marry a Pinchot, or if you elect to buck the dominant political machine (and one follows the other as the night the day), you must expect to lose just so often - possibly half the time. But it is a good game. And a little like a love affair, exciting & self-satisfying whether one loses or not (CBP Manuscript)

Commenting on Cornelia's close interaction between her home and the political sphere, a reporter said: "She spends her apparently inexhaustible vitality in a continuous effort to tie up politics more closely to life; to make the two come together, meet, touch...." She believed that through contact provided by political equality, men and women would become more realistic in their relations; that together men & women could know more - "Two minds don't think as one; it would be dreary if true (Furlow, n.d.: 13)."

Her daughter-in-law later seconded this notion, when she commented on Gifford and Leila's relationship. "Gifford was very proper, moral, conventional--for good. Leila was a natural rebel--loved to upset people by doing outrageous things. They complemented each other. It was a delight to be with them."

After their son, Gifford Bryce Pinchot was born, she focussed considerable attention on education and child labor reform. Her demand that women play a vital role in developing educational policy coincided with her hope that the "Early Victorian theory that females should not be educated" was gone forever. (She herself had not been encouraged to go to college, but to fulfill her social obligation with a coming out party.) She later served on the Milford School Board, often commuting from the State Capital, for the meetings.

In order to play a more vital role, women still needed to obtain the vote. Serving as Secretary of the Pennsylvania Woman's Suffrage Association, she used her time, money, and influence to help ratify the 19th Amendment. By 1920, after 52 years of campaigning for suffrage, women could do more than voice their concerns, they could vote for those who represented their interests. Cornelia Pinchot could finally vote for her husband.

Gifford's 1921 campaign for governor of the state was consuming. Starting out with odds of 100 to 1, the Pinchots campaigned vigorously for honesty in government; equal enforcement of laws; and improved economy - "For Cleaning up the Mess in Harrisburg."

Pinchot won the respect of the League of Women Voters during a candidacy luncheon, based on the advice of his wife - "I warned him that women didn't want hot air and generalities." After winning the campaign, Gifford

wrote: "It was due to Mrs. Pinchot & the women she organized, far more than to any other single factor that we won (McGeary, 1960: 285)." The *New York Times* reported that "the greatest fear of the machine leaders was not of the nominee, but of his wife's proved political generalship."

> Leila was always at the center of what was going on. She was wonderful at drawing people out. A very professional politician. Always had ideas. More skillful of the two in terms of politics. The place [Grey Towers] was always filled with high-level people. She had a wonderful use of language (Interview with Mrs. Gifford B. Pinchot).

During these initial years in office, the Pinchot stance believed there was no more important plank than the pledge to make Pennsylvania a better place for women and children. Two related bills went before the legislature: Working hours for women, and working hours for minors. By 1925, Governor Pinchot established the Bureau of Women and Children. At that time, one out of five women, 16 years and older was a wage earner; 15 percent were married; most were native-born. (CBP Papers) Mrs. Pinchot often spoke on behalf of the Governor, to special interest groups, and over the radio. During these years she began to gain her own political confidence.

In 1928, Cornelia Pinchot sought the Republican nomination for the United States Congressional seat from the 15th District of Pennsylvania.

> I am not one of those who believe that women have any better contribution to make politically than have the men; it is not a question of better or worse, but of all together lending a hand. And I believe this combination of housewife and politician will render a real service to the state.

The tone of the Pinchots' campaigns during the 1920's and 1930's (she ran twice more for Congress, losing all three elections) focused on human resources: Labor reform, education, and honest control of the machine bosses.

HUMAN SIDE OF CONSERVATION

Gifford's definition of conservation - the wise use of natural resources for the greatest good, by the greatest number in the long run - was being altered during these years. Adding a human component - the conditions of workers, education for the betterment of society, and securing resources for international peace, Gifford Pinchot began to believe that the principles of conservation must go beyond scientific management of natural resources, to include human resources as well. In a speech he wrote several years later, he stressed:

> The conservation problem is not concerned only with the natural resources of the earth. Rightly understood, it includes also the relation of these resources and of their scarcity or abundance to the wretchedness or prosperity, the weakness or strength of peoples, their leaning towards war or towards peace, and their numbers and distribution over the earth (CBP Papers, Box 43).

This was in large measure due to Cornelia's influence. She believed "a man's view about conservation might well be taken as the acid test to determine his attitude towards public questions of all sorts (Furlow, n.d.: 340-41)." She was also sensitive to the concerns of those who wanted their share of the "public good." During Gifford's second gubernatorial victory in 1930, he concluded:

> I think you'll agree that the strongest weapon I had was Cornelia Bryce Pinchot, whose work against sweats is known throughout the U.S. She is this administration's best contribution to the cause of workers on farm or factory, mill or mine.

A 1933 telegram from Cornelia, to the Hosiery Workers Union read: Regret impossible to be with you. Tied up here with the Sweatshop Committee and then going to Pittsburg to help the steelworkers organize.

During these early depression years, she supported her husband's efforts to secure funding relief from the Federal government. While serving on the Republican Women's Council, she asked the women to join Gifford's plea to President Hoover for Federal funds to the states.

Cornelia was a strong supporter for the people's rights through FDR's "New Deal" programs to combine human and natural resource programs. In 1934, she tangled with the Administrator of the National Recovery Administration, writing:

> I recommend a definite change of policy...your present plan of allowing the steel trust, the automobile magnates, and big business generally to flout the government [is] un-American, utterly wrong, and must inevitably lead to the failure of the NRA.

She also supported her husband's urging for President Roosevelt to call an international conference that would outline a strategy for world peace, based on cooperative efforts among nations to conserve human and natural resources. (FDR received the plea by noting that Pinchot was a "wild man, an individual who could not be controlled.")

At the end of Pinchot's second term as governor, he became ill with shingles. Cornelia managed much of the business at the governor's mansion for almost three months. In his final message to the general assembly, the governor voiced special thanks to his wife,

> Whose advice in this emergency was indispensable. Indeed, throughout both my terms Mrs. Pinchot's assistance in dealing with the human side of government has been invaluable. In her the people of the Commonwealth have an ally impossible to duplicate or replace (McGeary, 1960: 385-386).

In 1943, Cornelia was a founding member of the Committee of 100. This committee was dedicated to the creation of an America of justice and equality for our Negro fellow citizens. Within seven years, the committee had increased the legal defense and education fund budget for the NAACP by $120,000.

After World War II, she organized an exhibition at the Library of Congress, entitled "Warsaw Lives Again." The year following Gifford's death she travelled to Greece. At that time, Greece was having a terrible time - refugees were everywhere. Cornelia reported the conditions of the troubled country to President Truman. People took her quite seriously - all doors were open to what she had to say.

In 1949, three years after Gifford's death, Cornelia Bryce Pinchot attended the United Nations Scientific Conference on Conservation and the Utilization of Resources - the conference Pinchot had envisioned years earlier. Scientists and interested observers from around the world were invited to share their collective wisdom. During this conference she called on the delegates to regain her husband's broad conservation ideal, stating:

> Every true conservationist knows that man himself is a natural resource; that without man's energy, the energy of coal, of electricity, of oil, or atomic fission itself is inert and meaningless. To sidestep the human and political implications of conservation, to deal with it exclusively in terms of materials, matter and technical processes, is to take a long step backward from where we stood a generation ago (CBP Manuscript).

On October 15, 1949, she spoke at the dedication of the Gifford Pinchot National Forest (a ceremony renaming the Columbia National Forest to honor Gifford Pinchot), stating:

> Today this Service is still outstanding in its high morale, its devotion to duty, its creative and imaginitive leadership. It sets a pace that many government departments might well be advised to follow (Cornelia Pinchot 1950).

When the Forest Service celebrated its 50th anniversary, a few years later, she created a series of radio broadcasts for the occassion.

REFLECTIONS ON HER LIFE

In 1935, Cornelia Bryce Pinchot began writing her memoirs - details of childhood, wealthy upbringing, series of suitors, interests in architecture, antiques, and progressive struggles against political bosses. She had sailed the South Seas, ridden a dromedary in Egypt, stalled in a plane over London, been stoned by angry mobs while picketing the working conditions in textile mills. Writing in her manuscript, she claimed:

> At fifty life is never stale, dull, and unprofitable to me. On the contrary it is exciting, constantly opening out fresh vistas of adventure and interest. The fact that these interests are outside of myself and beyond my immediate personal life certainly is an asset - and perhaps what makes a political life so satisfactory to me (CBP Manuscript).

The Pinchot's life together was joined with crusading zeal. They fostered causes which were international, inter-racial, inter-party. They shared a home together where "love was vivid, and vital. Not only romantic love...but the real steady everyday kind of love between husband and wife. Love of laughter and fun, love of work, love of life." They hunted, fished, and camped together. They shared the expenses for their political campaigns, and the upkeep of this estate. Gifford financed the farming and automobile maintenance; Cornelia paid for the mansion's alterations and landscape design. They are remembered by many across the country for their warmth and hospitality as well as their dynamic energy.

Reflecting back on her life as a Modern Woman, for an article in *The Nation* magazine, Cornelia wrote:

> Some years ago I marked down, pursued, and captured one of the few really big men I have ever known - one who never turned his back but marched breast forward - and lived happily ever after (Showalter, n.d.).

REFERENCES

Furlow Jr., John W. "Cornelia Bryce Pinchot: Feminism in the Post-Suffrage Era." *Pennsylvania History*.

Furlow Jr., John W. 1987. "Gifford Pinchot: Public Service and the Meaning of Conservation." *Theodore Roosevelt Association Journal*, Summer.

McGeary, M. Nelson. *Gifford Pinchot, Forester - Politician*. Princeton, NJ: Princeton University Press. 1960.

Milner & Associates, John. 1980. *Grey Towers: Final Historic Structures Report, Historic Landscape Report, and Management Plan*. West Chester, Pennsylvania. (Typescript)

Pinchot, Cornelia Bryce. *Cornelia Bryce Pinchot*. (Unpublished Manuscript).

Pinchot, Cornelia Bryce. 1950. "Gifford Pinchot and the Conservation Ideal [Speech Delivered on Oct. 15, 1949, at the Dedication of the Gifford Pinchot NF]." *Journal of Forestry*, Vol. 48, #2 (Feb): 83-86.

Pinchot, Gifford. 1947. *Breaking New Ground*. New York, NY: Harcourt, Brace and Company. Reprinted in 1972 by the University of Washington Press, Seattle, WA, and in 1987 by the Island Press, Washington, D.C.

Pinchot, Gifford. 1930. *To The South Seas*. Philadelphia, PA: The John C. Winston Co.

Pinchot, Mrs. Gifford B. 1991. Oral history interview (unpublished) by Gary Hines, Ed Vandermillen, and Jean Pablo. Grey Towers collection.

Showalter, Elaine. *These Modern Women: Autobiographical Essays from the Twenties*. The Feminist Press.

Snyder, Amy L. 1988. *Grey Towers National Historic Landmark: Recreating A Historic Landscape*. New York, NY: Cornell University. (Unpublished Masters Thesis).

COLLECTIONS CONSULTED

Guilford, Connecticut:
- Pinchot Family Collection (private)

New York, New York:
- The Cooper Hewitt Museum Library

Roslyn, New York:
- Bryant Library
- Nassau County Museum of Fine Arts

Washington, D.C., Library of Congress papers of:
- Amos R. E. Pinchot
- Cornelia Bryce Pinchot
- Gifford Pinchot

NATIONAL FORESTS -- USE AND DEVELOPMENT FOR RECREATION IN THE WEST

E. Gail Throop
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Robert Marshall introduced the recreation section in "A National Plan For American Forestry" (1933) by estimating the likely antiquity of forest recreation:

> The use of the forest for recreation probably dates to the time when some wandering savage, returning to his cave through the depths of the primeval forest, may have noticed a beam of sunlight shining on some darkened tree trunk and felt all at once without knowledge of the reason a moment of great, surging joy in the chaotic passage of his life.

Certainly people had resorted to forests for pleasure long before the first federal forest reserves were created by Presidential Proclamation in 1891 -- under authority of what is variously known as the Withdrawal Act, the Creative Act, General Revision Act, or more frequently, the Forest Reserve Act (26 Stat 1103; 16 USC 471). The stated general purpose for such withdrawals was "to promote the public good."

Having authorized the creation of national forest reserves, Congress then provided for their organization and management through the Organic Act of June 4, 1897. That Act identified three purposes for which the reserves should be managed: 1) to improve and protect the national forests; 2) to secure favorable conditions of water flow; and 3) to furnish a continuous supply of timber for the use and necessities of citizens of the United States.

Because recreation was not specifically excluded, it could reasonably be inferred as included among the compatible uses of the reserves. A fortunate thing, because even before the first forest rangers of the General Land Office (GLO) took to the woods in the summer of 1898, picnickers, hikers, campers, hunters, and fishermen, individually and as families and other groups were among the regular users of the reserves. In most reserves, they were few and well-dispersed and made little impact on the sites they occupied. Thus, they were of only minor concern for forest managers. At first few or no facilities were provided by the Federal government. The use was acknowledged and regulated, but not promoted.

The first legislation to recognize recreation in the Forest Reserves was enacted February 28, 1899. The Mineral Springs Act permitted the building of sanitariums and hotels in connection with developing mineral and other springs for health and recreation. The revised GLO regulations set forth in the 1902 Forest Reserve Manual stipulated to the right of the public to travel on the forest reserves for pleasure and recreation.

The Reserves were shifted from the Department of the Interior, General Land Office, to the Department of Agriculture, Bureau of Forestry by the Transfer Act of February 1, 1905. On July 1, 1905, the Bureau of Forestry became the Forest Service. Two years later, in 1907, the Forest Reserves were renamed the National Forests.

Recreation use in the National Forests remained "incidental" in the early years, but by 1912 was significant enough to be mentioned in the annual *Report of the Forester* (Chief): "With the construction of new roads and trails the forests are visited more and more for recreation purposes, and in consequence the demand is growing rapidly for sites on which summer camps, cottages, and hotels may be located."

By 1913, the annual report raised the issue of the need for sanitary regulation to protect public health. Service-wide recreation statistics were included in the 1913 report, which listed 1.5 million "pleasure seekers" in the 1912-1913 fiscal year, of which a little over 1 million were day visitors. Campers, including those engaged in hunting, fishing, berry or nut picking, boating, bathing, climbing, etc. totaled 231,000 and guests at houses, hotels, sanitariums, etc. came to 191,000.

After 1910 it became increasingly apparent that more encouragement to families and resort owners was needed to meet the demand for recreation facilities. The Term Occupancy Act of March 4, 1915, strongly supported by the Forest Service, allowed private use and development of public forest lands for terms up to 30 years by persons or organizations wishing to erect recreation residences, summer camps, stores, hotels or other resorts.

The establishment of the Columbia River Gorge Park as a unit of the Oregon National Forest by order of the Secretary of Agriculture (David Houston) on December 24, 1915, appears to mark the first time

the Forest Service dedicated an extended area to purely recreational use. The "park," some 22 miles long and four to six miles wide (13,873 acres) along the Oregon bank of the Gorge was closed to timber sales and to permitted recreation residence and resort development. In return, the Forest Service undertook development of recreation facilities: The Eagle Creek Campground -- on the Columbia River Highway -- was built during the summer of 1916. It was a "fully modern" facility with tables, toilets, a check-in station and a ranger station. In addition construction was begun on the 13.5 mile long Eagle Creek trail. Built specifically for recreation use, the trail purposely sought out scenic routes, even tunneling behind a waterfall at one point. In the summer of 1919, nearly 150,000 people enjoyed the Eagle Creek facilities.

There is much to suggest that at least a portion of the Forest Service's recreation interest in the second decade of this century resulted from a rivalry with the newly formed National Park Service -- which had as a major announced purpose the development of recreation facilities. It became apparent to the Forest Service that if it were to compete successfully in serving the public, it ultimately would have to develop professionally planned recreation facilities. Data collection was a point of beginning.

Early in 1917, the Forest Service employed Frank A. Waugh, professor of Landscape Architecture at Massachusetts Agricultural College, Amherst (now University of Massachusetts) to prepare a national study of recreation uses on the National Forests. This was the first comprehensive review of recreational use.

Waugh spent five months in the field during 1917 working on his National Forest Study. He visited forests in each of the seven Districts (now Regions) of the country, paying special attention to areas where recreational activities had become most common -- on "urban forests." *Recreation Uses in the National Forests*, Waugh's main report on the status of recreation, summarized the types of facilities found in the forests -- publicly owned developments consisted almost entirely of automobile camps and picnic grounds, while the private sector provided fraternal camps, sanitoria, and commercial summer resorts. In addition there were "several hundred" small colonies of individually-owned summer cabins.

Waugh also included an exploration of the cash value of forest recreation. He concluded that forest recreation must be worth at least as much as casual urban recreation, e.g. movies, magazines, a cost he calculated to be not less than 10 cents per hour. With the first crude recreation use figures, collected during the summer of 1916, he figured a recreation return of $7,500,000 annually on National Forest lands.

The period from 1919 to 1932 describes a slow progress in the development of recreation facilities on the National Forests. Responsive to the need for improved public service, the agency was generally supportive of the idea of professional planning and design. To this end it hired a "recreation engineer," landscape architect Arthur Carhart, in 1919, to begin recreational site planning. 1920 marked the completion of the first forest recreation plan for the San Isabel National Forest in Colorado.

Planning, even on this limited scale, was one thing: Execution was another. One of the successful mechanisms for accomplishing planned development during this period was through local "recreation associations." The concept is not dissimilar to the idea of partnerships suggested in the current National Recreation Strategy. The cooperating recreation association movement produced a significant number of National Forest recreation areas at a time when the Forest Service could not expend much of its regular appropriation on such work.

Clearly, recreation development hinged on the availability of funding. In 1920, the Forest Service requested funds specifically for recreational development for the first time -- "to bring about the fullest use of the National Forests and contribute their proper quota to the Nation's health." But not until 1923 was there a breakthrough: "For the coming year Congress has allowed with great reluctance a small sum [$10,000] to cover the cost of installing toilets, fireplaces, and other simple facilities required by recreationists, but in doing so it based its action on protective grounds, that is, fire prevention and the preservation of good sanitary conditions, not upon recreational grounds."

Early in the decade, while ground was gained on the budgeting front, professional expertise in planning and design was lost. Arthur Carhart resigned because of what he perceived as a lack of support for recreation in the agency: he was not replaced by a person trained in the design disciplines. Only three Regions -- Northern, California, and North Pacific -- had personnel with recreation duties. Other Regions either indicated too little recreation activity to merit specialized personnel or a determination to develop their own forester-recreationists. Between 1923 and 1933 foresters carried out the Forest Service recreation program.

In fiscal year 1925, the budget contained a special item of $37,631, the first specifically for campground development. By 1930, the figure was $52,050. This amount had to stretch among 110 National Forests, but the facilities contemplated were so simple that the average cost of improving a campground was only about $200. In comparison, a single unit in a campground today cannot be constructed -- or even rehabilitated for $200.

In 1925 there were some 1,500 campgrounds in the National Forests. Only one third of these contained even the most basic facilities. Chief Forester William Greeley estimated that the 1,000 undeveloped campgrounds could be brought up to standard for less than $250,000. By 1930, Chief Forester Robert Y. Stuart reported 1,493 fully and partially developed campgrounds. Facility development had cost $329,922, including $48,642 in donated cash or labor. Progress appeared to be excellent; however, National Forest recreation use had increased 38 percent in 1929 alone.

The rising trend in recreation appropriations gave the Forest Service reason to be optimistic: with increased funding "promised" supply would catch up with demand. Unfortunately, economies in public spending, forced by the Great Depression, resulted in a 25 percent reduction in the Forest Service's recreation budget (FY 1932-33) instead of a 100 percent increase. The means for moving the recreation development program forward remained beyond reach.

Although recreation development ripened gradually in the 1920's, that period was a fruitful one with regard to ideas about resource management that are now included in the "recreation portfolio."

- In 1919, Arthur Carhart's recreation plan for Trapper's Lake on the White River National Forest recognized the value of non-development.

- Aldo Leopold's advocacy resulted in the designation of the Gila Wilderness in 1924.

- Leon Kneipp, Assistant Forester, Division of Lands in the Washington Office instituted an inventory of roadless areas in the National Forests in 1926 -- in essence, the first RARE.

- In 1928, the Research Branch of the Forest Service became involved in recreation: Dr. E.P. Meineke, a forest pathologist was assigned to the California Region to help solve problems of recognized deterioration of sites due to overuse.

- In 1929, the Secretary of Agriculture promulgated Regulation L-20 which enabled the classification of qualifying lands as Primitive Areas.

Throughout the decade of the 1920's, "the Forest Service pursued a cautious conservative recreation site development policy. Generally, that policy held that the recreation role of the National Forests was to provide *space* for recreation. Publicly financed recreation facilities remained limited in number and usually simple in nature. The needs of the public for more elaborate developments were to be met by privately financed resorts or by summer cabin areas located on National Forest lands under the Term Occupancy Act. This policy of limited Federal development of National Forest recreation sites fit both the philosophical outlook of the Forest managers and the budgetary goals of the Coolidge and Hoover administrations and of Congress.

The modest level of National Forest recreation development which persisted through the 1920's and early 1930's ended with the election of President Franklin Delano Roosevelt. During the height of the New Deal, the Forest Service received recreation funds and support far beyond its wildest dreams of earlier years. The tight limits that had so long constrained the Forest Service recreation program disappeared so completely that the resulting new wave of recreation development overwhelmed the work done before 1933. These changes in the magnitude and scope of the Forest Service recreation program resulted inevitably in significant and far reaching changes in its recreation policy.

"A National Plan For American Forestry" (the Copeland Report) was prepared by the U.S. Forest Service in 1933 in response to Senate Resolution 175. In addition to the work needed to develop, rehabilitate or restore natural resources, the plan described work needed to develop and enhance the recreation resource. The section on recreation was written by Robert Marshall (collaborator). In it he spoke of providing for the comfort and convenience of travelers: developing camp site areas would "curtail the very

serious damage to forests which results when the hordes of tourists who throng many popular highways camp chaotically through the surrounding woods." The proposed program outlined the need for a "recreational survey" to determine what types of recreation the public desired, and defined recreation land classifications -- superlative areas, primeval areas, wilderness areas, roadside areas, camp-site areas, residence areas, and outing areas. These land classifications, which would provide a range of settings that suited the various types of recreation activities and experiences desired, have much in common with our current Recreation Opportunity Spectrum. Most of the Civilian Conservation Corps' "forest improvement" projects on National Forest lands were based on the recreation program detailed in the Copeland Report.

Although recreation development proceeded at an escalating rate nationwide, the recreation program lacked formal structure or direction within the organization. A reorganization study in the Washington Office in 1934 resulted in the creation of the Division of Recreation and Lands in 1935. In May 1937, the position of Chief (Director) of the Division was filled by Robert Marshall. Marshall had a strong and long-lasting influence on recreation policy and development. His view of governmental responsibility toward the public welfare and especially the underprivileged coincided with those of Chief Ferdinand A. Silcox, and the philosophy of the New Deal. He believed fervently in the benefits of outdoor recreation and in the social values of the National Forests. Facilities should provide for the comfort and convenience of forest visitors and should be responsive to public demand.

Chief Silcox issued a policy statement regarding the emergency work-relief programs and their products. Regional Foresters were directed to give more attention to the "social" functions of the Forests as they executed the several work-relief programs. Permanent recreation improvements such as camp and picnic shelters, swimming pools, and community buildings were to be encouraged. Work was to meet high quality standards: structures would not be other than substantial and aesthetically pleasing. Public service would be paramount.

Under Marshall's guidance, a tremendous variety of facilities were built, many of them elaborate, with types of recreation structures unprecedented in Forest Service plans. Facilities such as bathhouses, shelters, amphitheaters, and playgrounds were part of large recreation complexes. Using mainly CCC labor, the Forest Service built substantial recreation structures from coast to coast. Forester-recreation specialists were deeply involved in project planning, but much of the design work was done by processionally trained architects and landscape architects. Relatively few of these skilled people held permanent positions in the Forest Service, so the expertise was temporary.

As the 1930's ended, the Forest Service was heavily engaged in recreation development, but the support for work relief programs and for all National Forest activities was declining. As national defense priorities came to the fore, public works recreation allotments ceased. The accomplishments of the Depression era were notable. In 1941 the Chief's Annual Report cited 2,300 developed campgrounds, 572 picnic areas, 1,381 recreation areas offering both camping and picnicking, 254 winter sports areas, 54 federally built organization camps for people of modest means, and 11 federally financed resorts. Recreation was established as a national administrative priority of the Forest Service. The stage had been prepared for the vastly increased role forest recreation would play in postwar National Forest management.

Following World War II, Americans aggressively sought an improved quality of life that included active participation in all forms of outdoor recreation. The socio-economic influences of the post-war baby boom, increased affluence, increased leisure time, improved transportation systems, and population mobility led to unprecedented growth in demand for outdoor recreation. The natural target for this demand was, in large part, the close to most population centers National Forests. These Forests offered a low level of regulation and a high level of freedom of choice opportunities. The supply of developed recreation sites was soon overwhelmed by this unanticipated demand. This was true for all other public providers of outdoor recreation opportunities.

The Congress responded in 1958 by establishing the Outdoor Recreation Review Commission (ORRC). After three years this commission produced an assessment of demand for outdoor recreation to the year 2000, and recommended programs to satisfy that demand. Several legislative and administrative actions resulted including establishment of a federal outdoor recreation bureau (BOR), the creation of the Land and Water Conservation Fund, expansion of existing programs to meet demand, and federal grants-in-aid to states. These results guided national and state policy for the next 20 years.

This surge in national interest in the social value of outdoor environments at the start of the '60's ushered in the era of national recreation and preservation classifications through federal legislation. The

National Wilderness Preservation system was established in 1964. National Recreation and Scenic Areas, Wild and Scenic Rivers, and National Scenic Trails legislation followed throughout the next two decades. This was an era when America looked to the federal government to solve its problems and provide for social needs.

During the same period, the congress endorsed and gave increased emphasis to the concept of multiple-use management of the National Forests in 1960 (Multiple Use-Sustained Yield Act) and 1976 (National Forest Management Act) with recreation and other amenity values receiving co-equal emphasis with commodity uses. As an expression of the thrust of these acts and the increasing participation of the public owners of the National Forests, the agency became sensitized to the importance of outdoor settings, and the range of opportunities provided within them. This led to the present system of inventory and basis for determining supply and demand - the Recreation Opportunity Spectrum (ROS).

Just as in the late 1950's, socio-economic changes in American in the early 1980's brought on both a federal and agency response to the public desire for higher quality and greater diversity in outdoor recreation in the nation and on the National Forests.

In 1985, President Reagan established the President's Commission on Americans Outdoors to review existing outdoor recreation resources, and to make recommendations to him that would ensure the future availability of outdoor recreation for the American people. The Commission found that, more and more, people were looking for recreation opportunities close to home and concluded that this is best accomplished community by community. Since the National Forests exist in 41 states and are within a four-hour drive of a majority of the nation's communities. They represent a principal opportunity to meet this demand. In 1987, 46 percent of all recreation visits to federal lands took place on the National Forests. The thrust of this Commission was away from federal centrism and strongly toward public-private partnerships.

The agency response to socio-economic changes of this period took the form of an exciting and imaginative national initiative, the National Recreation Strategy. This strategy was conceived by the new Chief of the Forest Service, F. Dale Robertson. Under the leadership of Zane Smith, former director of recreation in the Washington, D.C. office and Regional Forester in California, 45 Forest Service men and women from across the ranks and Nation developed this strategy with review by outside experts in public and private recreation sectors. From birth of the concept until adoption of the initiative by the Chief and Forest Service leadership, just 5 months passed!

The essence of the NRS is to bring people into full equity with consideration of the other resource values of the National Forests in planning and allocation, to become the Nation's primary provider of high quality outdoor recreation, and to place customer service first. The preferred tool to meet this challenge is the development of partnerships between other public and private providers of outdoor recreation. This strategy is now operational and significant progress toward the objectives has been made.

REFERENCES CITED

Throop, Elizabeth Gail.
1979 "Utterly Visionary and Chimerical: A Federal Response To The Depression. An Examination of Civilian Conservation Corps Construction on National Forest System Lands in the Pacific Northwest." M.A. Thesis. Portland, OR: Portland State University.

Tweed, William C.
1980 *Recreation Site Planning and Improvement in National Forests: 1891-1942.* USDA Forest Service. Washington, DC: U.S.G.P.O.

USDA Forest Service.
1932 *Summer Homes in National Forests of Oregon and Washington.* Fred W. Cleator. Portland, OR: USDA Forest Service, North Pacific Region.
1933 *A National Plan For American Forestry.* "The Forest For Recreation And A Program For Forest Recreation." Robert Marshall (collaborator). Washington, DC: U.S.G.P.O.

Wengert, Norman, A.A. Dyer, and Henry A. Deutsch.
1979 *The "Purposes" of the National Forests -- A Historical Re-Interpretation of Policy Development.* Ft. Collins, CO: USDA Forest Service.

THE GREEN MACHINE:
An Ethnography of the USDA Forest Service Washington Office (WO)

Terry West
April 3, 1990

> Managers work at an unrelenting pace...their activities are characterized by brevity, variety, and discontinuity...they are strongly oriented to action and dislike reflective activities (Henry Mintzberg quoted in *Harvard Business Review*, March-April 1990).

The hectic pace of the "city" of government in Washington, D.C., precludes this "manager" from making any detailed reflections on customs of the Forest Service's Washington Office (WO). What follows is merely an outline of observations based on three years employment in the WO. My location in the Public Affairs Office (PAO) no doubt skews my perspective. The "political" nature of the PAO mission makes its work force more oriented toward "insider" politics than may be the case in other staffs. In addition, the history unit was physically isolated from contact with much of the agency workforce since the office was in the basement of the South Building. This isolation tended to limit the personal contact required for participant-observation, thus making the following somewhat "unscientific" judgements. Instead of a rigorous study ready for academic publication, regard this paper as a personal exercise or heuristic device.

The following are a series of observations on "life" at the WO from the viewpoint of a former part-time forest archeologist catapulted to the position of historian in the main office of the agency. It is not a narrative guide for newcomers on how to find paper clips, a home, or the best place to eat. The focus is on larger "overview" points with most being on the "politics" of the office. The format is a listing of the observation followed by an explanatory comment.

1. Prestige in the WO is no longer based on the number of employees a manager supervises but on his/her "inside the beltway" skill at Congressional and/or front desk (Chief and Staff) relations.

> Explanation: The decline in work force numbers over the last decade, and the increased centralization/politicalization of management decisions on local land use issues, gives WO "wannabe" politicians a chance to associate with Capitol Hill yuppies (Congressional staff) and lobby them for the Forest Service.

2. WO staff faces up the ladder of power and is preoccupied with how to influence that higher level. (Hence #2 is caused by #1) WO staffs do not devote themselves to how best can they guide the field units since they are too busy with tasks to appease beltway groups. WO managers absolve their disinterest in providing leadership to field units by blaming the latter for not complying with their views due to decentralized authority.

> The explanation--real reason--is found in number three.

3. The WO appears to be lagging not leading change in the agency. Or in the words of one informant: "The WO is always a generation behind the field."

> Explanation: Communication specialist Marshall McLuhan called it "rearview" vision which is a common practice of adults to act on past images of reality rather than recent changes in the landscape. Thomas Kuhn's (*Structure of Scientific Revolutions*--the most widely influential book in U.S. graduate schools in the 1960s and '70s) expression of this concept was in the term paradigm. In part, then the WO lag is a factor of the natural generational paradigm differences; with younger newcomers in the field and older rear-guard in highest positions at the WO. The lag or conflict

between generations is intensified in situations of abrupt change. Thus not until outside groups pressured Congress to investigate Region 6 timber practices (harvest levels, old growth, and spotted owls issue) did the WO begun to cope with an issue that had demoralized the region for years.

4. WO management style still reflects the rigid line-authority style of the past.

   Explanation: This is another case of lag since many field units were preaching participatory management and the end of 9-1 style leadership (a grid of personality with 9 being product oriented rather than people). The unwary new WO employee will quickly learn that California style "touchy-feely" practices are absent in the green machine. When the captain yells the private salutes!

5. WO staff units operate in isolation and lack coordination of activities, programs, etc.

   Explanation: The cooperation forced on different staffs at the district level in order to build a road or perform other concrete tasks is absent from the WO.

6. WO is plagued by a continued decline in the level of support services over the past decades.

   Explanation: The mass shift to the DG and work force reductions have combined to force managers agency-wide to do more of their own typing, editing, etc. Yet, the average employee at an S.O. receives more support services than does WO staff. The recent move to the "Auditors' Building" has improved the physical infrastructure but human capital is still needing better management. The field person who calls the WO and the phone rings and rings finally to be answered by a newly employed untrained receptionist gets a taste of the problems we face daily, mail that takes forever to arrive at our desk from the mailroom, having to ask that the same report be retyped six times because of continued typing errors, even the long waiting period for access to support services assistance. The reasons for this state of affairs are multiple with poor orientation, poor job skills, and poor pay at the top. Other contributors to this situation are the competitive job market for skilled secretaries makes the Forest Service an employer of last resort, the high cost of local housing prohibits bringing in outsiders at lower GS-levels. Hence the typical new support person is a young black woman with inner city level education and skills. The fear of white managers to enforce standards is based on the potential damage to a career of an EEO case.

   Anyone doing an ethnography of the WO is well-advised to tap the information pipeline of these lower level support services employees. It takes skill to get accepted, especially if you are a white male, but these women know the reality of the WO staffs in regard to workloads, personality type, office politics, etc.

7. WO is filled with foresters and politicians.

   Explanation: The staff director who wants to be noticed spends less time on making sure their program is well run than developing agendas for the agency. Just as in academia where research is more important than teaching, at the WO the goal is to get noticed by the Chief and Staff while the basic function of the staff branch is slighted. One reason why problem number 6 is ongoing.

   Now the presence of former district rangers and other agency stars is expected in the WO, after all they were picked for management on the basis of their legacy (family connections), skills (cheerleaders), and personality (dress right, talk right, act right--basic middle class attributes). What is distressful is the results. Since many of these Quayle-clones are foresters they believe that they

are trained economists, futurists, social scientists, historians, and policy analysts, as well. Their failure to lure to practice critical, reflexive, explanatory thinking is not just a matter of being managers, it is rooted in this arrogance. The remedy is for the agency to establish a think tank staffed with real specialists in the above listed skills.

8. WO is not interested in social research. Explanation: Several staffs in the WO undertake what might be called social studies but this is often ahistorical, predestined, or superficial. The avoidance of hard issues such as history of reforestation or affirmative action precludes a serious discussion of these programs, and illustrates the timidity of the agency. The denial of problems is a delaying mechanism not a substantive policy response. RE: #7

   Explanation: The absence of a program of independent analytical research results in bootleg efforts by different staffs that are not communicated beyond a small circle of friends.

9. WO is not a babysitter.

   Explanation: The WO is relaxed about your daily schedule as long as tasks are completed. A glass of wine at a business lunch is seen as sophisticated not a scandal.

10. WO managers delegate, they never do.

    Explanation: Since the trick is to get noticed, the idea is too think of a new product or agenda and then dump it on a subordinate or any other victim to perform. Take credit for its success and avoid failure that way. It is also part of the legacy of being a line manager who administers a program but does not do any of the actual tasks required since that is the job of the staff.

11. WO is like the White House--a city of slogans.

    Explanation: This city operates on slogans or buzzwords. Appearance is appeasement. Rural development is a hot new agenda but rather than define basic premises (how do we measure it? who do we target? do we limit it to economic markers or quality of life ones?), we go off charging with action plans. The field is then expected to support an agenda that is never clear.

12. WO is a closed shop.

    Explanation: Most politicians end up in the WO due to personal sponsorship. Their WO mentor is able to steer them on WO customs which otherwise take time to learn. Thus they are able to function effectively and avoid land mines soon after their arrival. If you arrive here without a mentor to promote your access or agenda, then you must be a real pushy person. The saying goes, if you want a friend in Washington buy a dog.

    There are many WO employees who tolerate this because while they may manage people, they are users. Do not expect them to seek you out unless they want something from you. In fact, it is a bit like an academic conference where during evening room parties unless you are a "big dog" you find people ignoring you after a quick glance at your name tag reveals your lowly status.

13. The WO is going to reduce the RO.

    Explanation: This is a future prediction. The RO will be reduced to a political office with regional forester serving as political liaison with the governor and state legislature (plus regional directors of other federal and state agencies).

14. WO Managers Future is Law not Forestry.

    Explanation: If your kid is planning to work at the WO someday have them study environmental law not forestry. What about training for lower level managerial positions? Suggest your kid major in public administration.

I'm tired. The DG is slow. And I'm Finished. That is my career is once this leaks out to the WO staff.

Terry West
The lone ethnographer

Additional Observations:

15. Information is the key to power in the city.

Explanation: Real power in a government bureaucracy is limited by laws, regulations, traditions, and staff resistance. Actual power then is less directly dictatorial than it is persuasive; the power of ideas which motivate, inspire, or influence the actions taken by managers at all levels--the real definition of leadership or the "vision thing." To develop vision requires information, as does monitoring staff compliance with your directives, thus information is a source of real power. The leaks, the media stars, all are proof of this assertion: If you are aware of the private thinking of a member of Congress and aware that he/she will not vote as expected on a bill, you have for a moment a coin of the realm. How you spend it depends on how skilled you are in the market. The WO is a microcosm of the city, and the employee who is skilled at getting information has coins to use to further career climb. Thus it is that news of personnel changes, new positions being created, reductions in budgets, etc. are all communicated by mentors and disciples first before becoming public knowledge. The lack of sharing of knowledge contributes to #12, since if you are the only one aware of a new journal essay on a subject critical to your boss, why let colleagues know about it since one of them may tell the boss about it before you do, thus getting credit for being on the ball at your expense.

Law Enforcement in the Forest Service: A Brief Overview

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Law enforcement was a duty of the early rangers on the Federal forest reserves (1897-1905), part of their responsibility to protect the natural resources of the reserves from natural and human depredation. This task was listed in the *Forest Reserve Manual for the Information and Use of Forest Officers, Approved by the Secretary of the Interior Ethan A. Hitchcock, General Land Office, April 12, 1902*. This manual lists the work of forest officers, supervisors, and rangers to be "protective duty, guarding against fire and trespass...as well as assisting the State authorities in the protection of game." The manual was expanded in size over the years, but most of the core regulations of the 1902 book in regard to law enforcement duties continued forward. For example, the manual of the Forest Service in 1905 (the year the Department of Agriculture took over administration of the forest reserves from the Department of the Interior, General Land Office) describes the job of ranger as being to "patrol to prevent fire and trespass...issue minor permits, build cabins and trails, enforce grazing regulations, investigate claims and when necessary arrest for violation of forest laws."

The early forest reserve rangers were issued a badge by the General Land Office, and photographs often depict them posed with a horse, pistol, or rifle, and wearing a round badge, making them resemble sheriffs of the Old West. The round badge was replaced with the famous "pine tree shield" by a 1907 edict by Forest Service Chief Gifford Pinchot (Service Order 134, April 30, 1907). Trespass regulations increased enough by 1911 to merit a separate manual of instructions to "Forest Officers" issued by Secretary of Agriculture James Wilson (Government Printing Office 1911). The book states the penalties for various types of trespass such as illegal logging, starting forest fires, and grazing without permit, and notes (page 20) that "All forest officers have power to arrest without warrant any person whom they discover in the act of violating the National Forest laws and regulations."

The major source of conflict with forest users during the first 20 years of Forest Service administration was over grazing of livestock on national forests. Sheep and cattle owners disputed use of grazing lands by the animals of the other, and both groups disliked being under the control of the Forest Service while their animals were on national forests. Sometimes the threat of force by the ranger confronting the culprits was required before herders removed illegal livestock. There were cases however, such as on the Sierra National Forest, between 1902 and 1905, when rangers had to take direct action to evict illegal bands of sheep. For example, during the summer of 1903, ranger George Naylor, assisted by Grant Clark and Henry Bell, encountered five bands of sheep and ordered the herders to vacate. They refused and one of them grabbed for his rifle and began scuffling with Clark; fearful that Clark was being overpowered Naylor drew his pistol and shot the herder. The wounded herder was taken to a doctor and when the rangers returned to the site all the sheep were gone. By 1905, with a system of permittee grazing in place, such confrontations in California were fading, although in other regions the grazing conflict took longer to resolve.

Even without gun play, it took great courage for these early rangers to impose regulations on local residents not used to the presence of the Government in the isolated forests. Field personnel were authorized to carry sidearms (privately purchased, not Government issue) until around the beginning of World War II.

Another potential source of violence for Forest Service employees was conflicts with "moonshiners" during the prohibition era (1919-39). Many an old-timer's account includes the worry of accidentally finding an illegal alcohol still while doing forest inventory work.

Gradually, the duty of serious law enforcement fell to local enforcement authorities (county sheriffs, etc.), and the Forest Service had no assigned law enforcement agents. Case-by-case (land fraud, etc.)

investigation was carried on by the rangers in the form of field investigations and reports. The rangers documented the trespass, and a warrant would be issued by the local enforcement authorities for the arrest of the offender. Often civil courts would impose fines if the party was found guilty of trespass.

Criminal action was taken by Forest Service managers regarding the scourge of fire, with the Supreme Court (U.S. versus Alford, 274 US 264) deciding in 1927 that the agency can prohibit certain acts upon privately owned lands that imperil the public owned forest; in this case it upheld the conviction of a person who started a fire on private land that spread to a national forest.

The return to in-house employees for direct law enforcement on national forests was gradual and regional. It began in 1959 when the Southern Region hired Joe Couch as part of the Division of Fire Control. Couch came to the agency from the Federal Bureau of Investigations (FBI), and began a tradition of Forest Service hiring of former Federal agents to work in fire control. The next two, Jim Evans and Randall Miller, both former Treasury Department, Bureau of Alcohol, Tobacco, and Firearms (ATF) agents, were hired as special agents in 1961. Evans (1992) worked on the National Forests in Mississippi and Randall on the Cherokee National Forest in Tennessee. The regional office fire control staff wanted to experiment with the use of law enforcement agents to stop incendiary fires. Because many Forest Service people did not view the agency as a law enforcement organization, it took some time for them to be accepted. However, at the ranger district level their help was appreciated and soon they were involved with crimes other than arson, and were in demand on other forests in the Southern Region and elsewhere.

At this time, each region attempted to resolve its law enforcement issues as it saw fit; there was no consistent national program or direction (USDA Forest Service 1988: 4). As more criminal investigators were hired and other regions made use of their services, some national guidelines emerged in the form of changes in the agency manual section on "trespass" to make it more realistic and current. A national law enforcement conference held in 1969 in Marana, Arizona, (Southwestern Region) was a signal event in the advent of in-house law enforcement. A task force emerged from the conference to prepare a national law enforcement organizational study for Forest Service Chief Edward P. Cliff, with its recommendations adopted in 1971. "A problem was the functionalism of the agency; fire control wanted law enforcement training for its people, other staffs wanted nothing to do with it" (Jim Evans 1992).

Although still foreign to most of the agency personnel, law enforcement duties were becoming part of the Forest Service mission by the early 1970's. Passage of Public Law 92-82 (August 10, 1971) gave the agency cooperative law enforcement authority with "any State or local law enforcement agencies and other Federal agencies...on lands which are within or part...of the National Forest System." By 1991, about 600 law enforcement agreements provided reimbursement to these cooperators for protecting national forest visitors and their property.

State and local authorities were first used for recreational site patrols but by 1985 the growth and production of illegal drugs, mainly marijuana (cannabis), on National Forest System lands led to detection patrols by county law enforcement officials in many regions of the Agency. Forest Service special agents worked on cannabis eradication activities during the 1970s. This activity gained in importance with the passage of the Anti-Drug Abuse Act of 1986 (Public Law 99-570). A change in the law in 1988 (Public Law 100-690, amending the Act of 1986) allowed Forest Service law enforcement personnel to "conduct investigations and law enforcement actions outside the exterior boundaries of the National Forest System for drug related offenses committed within the National Forest Systems, or which affect the administration of the National Forest System." During the period 1986 to 1991, on the National Forest System, over 20,000 marijuana cultivation sites with more than 2 million plants were destroyed, 300+ drug laboratories and illicit drug dump sites were detected, and nearly 4,000 drug-related arrests were made. In 1991, the Daniel Boone National Forest was the leading cultivation site out of 156 national forests, and the Southern Region was the location of 82 percent of the plants eradicated agency wide, although the Pacific Southwest and Pacific Northwest accounted for 74 percent of the agency total of clandestine drug laboratories.

It was not drug investigations, however, that first brought the need for Forest Service law enforcement to the forefront, but crowd control in recreation areas. "In 1971, Forest Service funded law enforcement was aimed primarily at recreation areas; there were so many visitors that, to ensure crowd control, units had to get local law enforcement help," according to Jim Evans (1992). The population growth of urban America led to increased use of nearby recreation lands, including the national forests. The change was so rapid that former district rangers now serving at the national headquarters did not realize the depth of change. Retiree Jim Evans (1992) recalled his three-year stint as a law enforcement specialist at the Washington Office of the Forest Service that began in 1972: "My first year there, a deputy chief stood up and said he was 'totally opposed to people doing law enforcement work.' My reaction was to say, 'you are 20 years out of date; when you were a ranger maybe a 100 people a year would visit the forest, now we have a million'."

Wayne Wilson, who was hired in 1970 and formed part of the second wave of special agents hired in the Southern Region, comments on his experience in the same slot at the Washington Office from 1978 to 1983:

> The Forest Service had to learn that the local sheriff could not enforce Federal regulations...the turning point started with FLETC (Department of the Treasury, Federal Law Enforcement Training Center, Glynco, Georgia) training in-house law enforcement officers (LEOs) and criminal investigators (special agents) beginning in the mid-1970's. We began turning out about 200 a year (graduates from the 9-week Federal police training program), mostly volunteers from ranger districts...then we began to grow our own special agents (graduates of a second training program at FLETC) and no longer needed to recruit outside Federal agents to the Forest Service. By making changes in the manual, plus getting Forest Service line officers exposed to law enforcement after attending the Law Enforcement for Managers Training given at FLETC, it really turned the tide, made us a real professional law enforcement program (Wilson 1992).

Changes in the manual helped clarify the legal authority of Forest Service law enforcement personnel, cited law and regulations that they would enforce, and allowed law enforcement officials to wear sidearms on duty. Wayne Wilson (1992) proposed a design for what became a new badge around 1982 based on the Office of Inspector General badge and he also initiated formal identification credentials.

By 1991, there were about 600 uniformed law enforcement officers (LEOs) and 179 special agents employed by the Forest Service. The total amount spent on law enforcement activities during FY 1991 was approximately 37 million dollars. The first pool of recruits tended to be from fire and timber staffs, but today it is not unusual to have LEOs with wildlife or recreation backgrounds. Janet Arling, the first female special agent, transferred in from the IRS in 1978 to work on the Boise National Forest (Sea 1990: 3). A decade later when Anne Minden was hired on the Okanogan National Forest (Washington) as a special agent. To make law enforcement a viable program as the lone agent on a million acre forest, she realized that "all of the Forest Service personnel were going to have to become interested and aware of law enforcement. It's like a fire situation, where everyone is expected to get involved, because our first responsibility is to the land that we manage (Minden 1990: 2)."

As the urban population expands and use of the national forests for a variety of activities, both legal and illegal, continues; law enforcement activities seem to be an increasing priority. Present day managers are finding it necessary to increase law enforcement activities to protect visitors, employees, and resources. The agency emphasized this priority during calendar year 1992 by proposing a reorganization of the Forest Service Washington Office Fiscal and Public Safety staff to establish a separate Law Enforcement and Investigations Staff. This reorganization was approved by the Department of Agriculture in December 1992.

REFERENCES

Evans, Jim. 1992. Oral history interview with Terry West on November 11, 1992. Transcript on file. Washington, DC: USDA Forest Service, History Unit.

Minden, Anne E. 1990. "Special Agent, USDAFS." *Women in Natural Resources*, Vol. 2, #1 (Sept): 27-29.

Sea, Susan. 1990. "Overview of Forest Service Law Enforcement." *Women in Natural Resources*, Vol. 12, #1 (Sept): 9-10.

USDA. 1988. "U.S.D.A., Forest Service, Future National Agenda for Law Enforcement." Report of the October 1988 Law Enforcement Conference in Post Falls, Idaho. USDA Forest Service.

Wilson, Wayne K. 1992. Oral history interview with Terry West on November 20, 1992. Transcript on file. Washington, DC: USDA Forest Service, History Unit.

OLD AND NEW PERSPECTIVES:
Historical Notes on Forest Service Land Management

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Introduction

In response to continuing critiques (Public Land Law Review Commission 1970; Wolf 1990: 42) of Forest Service multiple-use land management practices brought about by conflicting demands for forest resources, the agency is developing "new perspectives." What is "New Perspectives"? The succinct response by advocates on the Siskiyou National Forest is its "ethical stewardship" called for by Aldo Leopold (Siskiyou National Forest 1990: 4), in practice it aims to be a "third alternative" (Siskiyou National Forest: 14) of "using the entire landscape to blend production with protection." It is the ideal balancing act between the extremes of production and preservation. Forest Service Chief Dale Robertson (*Friday Newsletter* 14 September 1990) announced that New Perspectives was "revitalizing the multiple-use concept." Hal Salwasser, Director of New Perspectives, argues that the agency has been moving towards ecosystem research and management for the past decade (Salwasser 1990b:3). Associate Chief George Leonard said (Civil Service sub-committee hearing of 10-4-90) "New Perspectives is our name for the process of change in land stewardship."

The New Perspectives approach, in the words of Chief Dale Robertson, is "some old, some new, and some yet to come." The old approach is based on a long history of experience in natural resource management. The new one stems from recent advances in scientific knowledge, and the future is new disciplines such as conservation biology. New Perspectives, however, is not restricted to scientific factors alone for as noted by Hal Salwasser (1990:2) it is "a concept of ecosystem management as applied science with social considerations" (ibid:2). A core element of New Perspectives is the collaboration between scientists and managers (ibid:6).

If future researchers are to work with managers in the Forest Service they must share a common ground. If managers are supporters of outputs and researchers of stewardship conflict arises. This is often the case with the agency today with wildlife biologists and other natural resource specialists finding themselves at odds with line supervisors. Yet, as recognized by several commentators of the situation, it is neither scientists nor forest managers that will determine the final resource mix that will calm the storm of public critique.[1] Instead, public debates over Forest Service land use policy mean that it is the political arena that increasingly shapes land use decisions.

"Its just that public policy and direction in a democratic society ultimately comes from a political process that weighs scientific information with other considerations." Salwasser 1990a:2

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[1] "Until sometime in the 1970s, outputs provided the rationales and basis for National Forest Management. Since then, outputs have increasingly become byproducts of the more fundamental land use decisions. Political processes, rather than professional forest managers, increasingly define the "balance" that solves the multiple use question (Schweitzer 1990)."

[2] Their view of resource problems was both ecological and political. Being both democratic and anti-monopolistic, they called upon government to protect the balance of nature and to prevent a monopoly of resources (Ross 1975:50).

New Perspectives is in essence an ecological approach to land management which is new to the Forest Service. Political pressure developing over the decades of the 1970s and 1980s gradually forced the agency to adopt this approach. There were some past internal developments in that direction but they were largely swamped by the commodity, practical forester approach that was dominate until recently. The text of this essay will illustrate this central point.

Forestry Roots: Technocrats and Conservation

The concept of forest conservation in the United States began with the publication of George Perkins Marsh's work Man and Nature (1864). He warned in his environmental history that human actions harmed the earth, especially the soil, and one step to prevent this danger was forest protection. The book influenced the thinking of many early founders of what became the conservation movement. Their basic message was that a balance existed in nature which humans needed to respect in developing and managing natural resources. From this concept was born the idea of conservation or "wise-use." In practice, advocates of conservation proposed that government assume the duty of resource management, by placing it in the hands of professional managers.

Students of public administration point to an essay in 1887 by Woodrow Wilson as an example of a new technocratic spirit: Wilson argued that the forces of science, administration, and politics could be harnessed to produce a new and more rational social order (Cawley 1990:1). Nowhere did these three forces come together more than in the conservation movement of 1890-1920 (Hays 1959). It merits quoting Hays (ibid:3) in detail to illustrate this point:

> Since resource matters were basically technical in nature, conservationists argued, technicians, rather than legislators, should deal with them. Foresters should determine the desirable annual timber cut; hydraulic engineers should establish the feasible extent of multiple-purpose river development...agronomists should decide which forage areas could remain open for grazing...Conservationists (desired) a political system guided by the ideal of efficiency and dominated by the technicians who could best determine how to achieve it.

These professionals would decide the suitable and best levels of resource consumption. In regard to forestry, it was more than harvesting timber since a scientific-managed forest required fire and disease protection to ensure a new crop in the future. The professional forester would learn the techniques needed to achieve a sustained-yield of timber and range on the national forests.

The key to early conservation theory was watershed management because water is essential to irrigation, navigation, waterpower, and consumption. Forest reserves, and reservoir construction, were required to ensure proper management of watersheds for those uses. In this period Western water development was the critical issue before Congress and it helped lead to the creation of forest reserves.

Three 19th-century philosopher-scientists provided the theoretical framework for the conservation movement of the early 20th century: John Wesley Powell, Lester Frank Ward, and William G. McGee. Powell had explored the Grand Canyon as a geologist and was later director (1881) of the U.S. Geological Survey. McGee and Ward were employees of the USGS: Ward working in paleontology and McGee, in ethnography and policy.

Powell's survey of arid lands in the west led to his Report on the Arid Lands of the United States, in which he argued for new land-use policies and agencies to ensure viable settlement of these fragile lands. He resigned in 1894 when Congress rejected his proposed program but he continued to influence policy such as the Reclamation Act of 1902.

These men were not preservationists, instead they "All wanted to unite science and government to manage natural resources for public welfare" (Ross 1975:58).[2] In a period marked by a shift from public land disposal to retention and resource management, Powell, Ward, and McGee were early "pioneers in guiding federal agencies to assume responsibilities for resource management" (ibid:59). Today they would be called "social engineers" seeking a more perfect order through activist government in contrast to those who believe that the "invisible hand" of the private market is the best regulator of social welfare. What is at issue here is that for these early pioneers conservation arose from an integration of science and policy. They wove

together science and policy to advocate integrated resource management. Later, this philosophy shaped the thinking of early conservation forester Gifford Pinchot, who called McGee "the scientific brains of the conservation movement". McGee's concept of integrated management of natural resources appealed to President Theodore Roosevelt's goal of improved government efficiency and led to his appointment to the newly formed Inland Waterways Commission (1907). In this capacity McGee selected managers from agencies involved with watersheds to serve on the Commission, including Gifford Pinchot of the Forest Service.

Public Forests

The conservation movement gained a victory with the creation of the forest reserves which allowed public "ownership" of National Forest System resources. The fact that the reserves were created out of public domain land rather than confiscated from private holdings no doubt helped public acceptance of federal forests. Partial credit for this remarkable achievement goes to another wing of the conservation movement--those early foresters in the USDA, Franklin Hough, Bernhard Fernow, and Gifford Pinchot.

The federal forest reserves were started after passage of the Forest Reserve Act of 1891, but it took the "Creative Act" of 1897 to establish policies under which the forest reserves were to be managed and protected. The newness and rapidity of expansion of the duties of the Division of Forestry obligated the employment of "student assistants" due to the paucity of trained foresters. These youth came from newly formed forestry schools such as Cornell (1898-1903), and Yale (1900 to present). Between 1903 and 1914, 21 forestry schools opened across the U.S. Henry Clepper (1971:127) observed that in the first three decades of professional forestry education, a major influence on U.S. forestry schools was "the written examination given by the U.S. Civil Service Commission to recruit junior foresters for positions in the federal government." Thus began the strong linkage between the forestry schools and the Forest Service which persisted for many years thereafter.3

Agency Growth and Organization

> Even after passage of the 1897 Organic Act (which defined central purpose of the reserves to be watershed protection and timber supply) westerners were dissatisfied with the reserves. Administration of the reserves was centralized by the General Land Office of the Department of the Interior in Washington and responded slowly to requests for permits and to complaints, if it responded at all. Local officials had little authority and many were incompetent. The lack of effective administration lent further fuel to the burning issues on the Forest Reserves, which were resource use and the rights of local users (Cermak 1979:1).

Agency policy was developed to allow local users to benefit from the reserves but to put this into practice required local staff. The Forest Service in its early years rushed to develop an organizational infrastructure which would meet the need for public service. The result was a decentralized organization based on a line-staff format, which replaced inspectors reporting to the WO in 1908 with a system of field offices. One of the fundamental precepts of this move was "local questions...(such as grazing)..should be decided on local grounds (Bell 1941:9)."

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3. "...on a conceptual level...the Forest Service had fully completed the transition to the bureaucratic-scientific system by the late 1920s. By then its hiring requirements included an education in the scientific aspects of forest and range management and a civil service examination testing those skills and knowledge" (Alexander 1987:411).

After the transfer of the reserves in 1905, Pinchot who was adept at public relations (Ponder 1987), had them renamed to national forests and the name of the agency changed to the Forest Service, the idea was to convey to the public that the forests were not locked preserves and the agency was there to serve local users. It must be noted here that this action was not merely cosmetic but reflected a core belief of Pinchot. This is important because as Pinchot noted in later years the inequality of access to natural resources produces social conflict (1947). This inequality of access to natural resources (the National Forest System) is the core of the multiple use concept and the New Perspectives process--which users will have access to the National Forests?

Forestry School-Applied Science

The emerging administration in the Forest Service was staffed by the products of the forestry schools of the period. What was the science taught in early forestry schools? It was the gospel of conservation through human intervention to maintain and increase the supply of outputs from the natural resources. Professional forestry in the Forest Service was an applied science of "wise-use" that became fixated on two goals: preventing future timber famine by increasing forest productivity (by increased growth of supply through removal of decadent stands and reforestation) to meet predicted future demand, and stressing the economics of sustained-yield management. Bernhard Fernow and Gifford Pinchot were united on the importance of forestry to show a profit, as the only incentive that would induce the private sector to practice sound forestry (Wolf 1989; Clary 1987). Later, Pinchot gave up the idea and proclaimed "National Forests exist not for the sake of revenue to the government but for the sake of the welfare of the public" (Steen 1977:91).

Critics argue that conservation is not a science as much as an agricultural school model of applied technology. At its most simplistic level it "tends toward an agricultural mode of management" stressing tree-crop forestry (Salwasser 1990a:5). Even the second stage of forest management, "sustained-yield", with its core principle of sustaining multiple outputs from the same forested area over time, lacks the concept of ecosystem management (ibid:5). At about the same time the idea of multiple use conservation was being formulated, the new science of ecology was just beginning. As will be noted below the field of ecology followed a separate track than that of forestry. The result was the lack of a holistic (ecological) approach to forest land management in many forestry schools.

Ecology as an academic field of science developed in western Europe in the early 1900s. Its early application was in the area of plant geography as early ecologists mapped and described the composition and geographical range of vegetation types (rainforests, etc.). Early American foresters concerned with practical knowledge began studying plant ecology under the name "silvics", a term used in the Forest Service in 1905 and defined by the Society of American Foresters as "that branch of ecology which treats of the life of trees in the forest." Later, forest ecology at Forest Service experiment stations entailed compiling life histories of the forest trees within their respective regions (a revised version of Silvics of Forest Trees of the United States was published in 1965). The issue of what future replacement forests would resemble, succession studies, also emerged as a research topic (Davis 1983:143).

The concept of ecology, as noted above, developed in the United States in the writing of George P. Marsh and later scholars such as Powell and McGee based their land management plans on need to harmonize human land use with the balance of nature. By 1915 the Ecological Society of America was founded, mainly an association of academics and professional ecologists. Their small numbers (membership didn't surpass one thousand until 1950) and absence from the political arena, limited the influence of the society. It is also argued that since many ecologists were based outside of the land grant colleges, where most forestry schools were sited, the concept of ecology was eclipsed by the agricultural-industrial model of applied science then in vogue. The next section will trace the influence of applied science on research in the Forest Service.

Research

Research in the forest service became a separate branch from National Forest administration in 1915 although then Chief Graves expected close cooperation between the two. Historian Thomas Alexander noted (1987) that it was the Intermountain Region which best integrated science and management, especially in its in range and watershed programs. It was an approach which combined empirical findings with managers willing to base policy on these studies despite local opposition by grazers. This applied science served well when limited to issues of stock numbers on a range. It began to unravel when challenged by non-commodity interests concerned with larger questions of wildlife and habitat preservation. The absence of an ecological-based research in the Forest Service surfaced in the debate over old-growth forest retention in the states of the Pacific Northwest.

One recent study noted that it was not until 1981 that the first comprehensive ecological study of the Pacific forest was made by Jerry Franklin (Caufield 1990:48). Franklin's explanation for the neglect of ecological studies of old growth forests: "...the academic biologists and ecologists wanted to go down to the tropics, and the foresters thought they knew all they needed to know about the forests here, which was how to cut them down" (ibid:48). The neglect of such research stems from several factors. On the most simple level it was the low impact of those foresters laying out sales in Region 6 (and elsewhere) in communicating their concerns about environmental impacts to supervisors and researchers. The trend for Forest Service researchers to forge closer ties with their academic colleagues than with National Forest managers (West 1990:13) played a part. Lastly, while research was separate from national forest system reporting instead to the Chief, their budget allocations reinforced the concerns of the forest managers for such areas as fire control, insect and disease control, etc. If both foresters and researchers shared the same goal of increased commodity production it was because the nation endorsed this end. This is especially true in the economic boom years following the end of World War II.

Population Growth and Resource Demand

> At first, management of the national forests was primarily custodial, protecting the forest from fires, insects and diseases, over-grazing and erosion. But by the time World War II started, use of the national forests had begun to intensify. Demands for goods and services boomed as population and incomes increased in post-war period of economic growth: between 1945 and 1960, the population increased 30% and GNP (Gross National Product) 37% (USDA 1974:1).4

During the 1950s timber harvests almost tripled on national forests going from about 3 billion board feet in 1950 to almost 9 billion at the end of the decade (Roth 1989:2). The impact was felt most in Region 6 the dominant softwood producer of timber in the national forest system. Interviews with former Forest Service employees help tell the story of what these changes meant to the agency and the resources. The retired Ranger District Fire Management Officer (FMO) I interviewed on the Siskiyou National Forest (West 1984:34-35) had these observations:

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4 Early in this study, some 140 (forestry) "leaders" were asked to express their views as to changes in the practice of forestry likely to take place between now and 1980. Named number one was continued population growth and GNP which means increased demand for wood products....Forest Service estimates of the medium projected demand for industrial wood indicate an increase over 1952 consumption of 50% in 1975 and 114% in 2000. The survey indicated increases for water, recreation, all calling for more intensive forest management" (Dana and Johnson 1963:36).

> Before the 1950s...the people in fire had been pretty much the controlling people in the forest service and they were pretty quickly shoved into the back seat and timber took over. Everything revolved around timber. You were going to get the cut out one way or another, regardless of what other things suffered. Also, I think our early ways of getting the cut out were not too good. You can still see the results of some of our earlier road locations and clearcuts....We really had no guidelines to consider drainages. We would clearcut both sides of a stream, for instance, because it made a natural layout. It was a good line to burn...when you were through both sides of the thing were free to sluice out into the stream...We just really weren't thinking too much about protecting the land. (Some of it was ignorance, and being understaffed forced us to do less than a quality job.)

A former District Ranger on the Siskiyou National Forest from 1958 until 1969 told me (West 1984b:18) of the expansion in those years of road building and timber harvests on one district, and the fixed amount of the latter over time:

> The Galice district, in my 11 years, averaged 20 miles of road per year. There were three of us permanent employees the first year I was ranger in 1958. The SO determined that we had an allowable cut of 19 million feet a year on the Rogue working circle, and 5 million on the Gold Beach; when I retired in 1981 it was still 24 million...the same area was still producing the same amount...I believe they should reduce the allowable cut to show these uncuttable areas, but that's a political-planning problem I guess.

The small staff and decentralized authority of the time made for a flexible program for a ranger, which many of them enjoyed. The responsibility for managing the various resources, however, precluded the level of attention focused on them that came later with larger staff. This point is made by the former district ranger interviewed (West 1984b:13) on the Siskiyou:

> When you started in 1958 was the Forest Service concerned with recreation, wildlife and stream quality?
>
> "Yes, we were concerned with it. They had a department of range and wildlife at that time in the RO and a staff man. We didn't have a wildlife man on the District; it was up to the foresters. I had three credit hours of range and three credit hours of wildlife in college, so we had what you might call a 'smattering' of it, and we were interested in it. We pretty much had general rules of what to do and what not to do. We had general rules to go by for wildlife but not as finely detailed as they are now (Interview on file, Siskiyou NF, West 1984:13).

The line staff of the 1950s and 1960s shared many common elements that allows generalizations to be made of the character of the Forest Service at that period. In his classic study of administrative behavior in the Forest Service Kaufman (1960) observed five district rangers. One of his findings was that the Forest Service administrative procedure reinforced a culture of "voluntary conformity". By transferring personnel the leadership cadre was composed mainly of career Forest Service employees which produced what Kaufman called "socialization in the promotion process." Further adding to the pattern of uniformity was the fact that in this period 90% of the professional positions in the Forest Service were filled with foresters coming out of only 27 accredited schools (Tipple 1990:10). Since most of these foresters were white males the uniformity of the Forest Service was further reinforced. What is most important about the workforce is that they believed they were serving the public good and not until confronted with land ethic challenges did this view began to change.

The roots of change had already surfaced by the 1960s but it took until the 1980s for the new form of the agency to be in full bloom. The major differences were noted by Leman (1981) in his "The Forest Ranger Revisited: Administrative Behavior in the U.S. Forest Service in the 1980s." The study noted that more demands, new techniques (especially computers), more laws (and lawsuits) more public and Congressional pressure, and "just more to do" had altered the ranger job. Advent of equal employment policies effected the composition of the workforce the ranger managed, this and the unionization of

employees helped erode the "paternalism" of the agency, as did the rise in numbers of staff making it less "family" and more management-labor. Burdened with paperwork, confined to the office, and dependent on staff advice, the ranger no longer was a forester but instead a people manager. Lastly, caught in the web of planning the ranger finds that local concerns are often national issues with the result that centralization trends have emerged in the Forest Service. The increased stress on planning is traced to Congress.

New Acts--Old Issues

"The National Forest Management Act of 1976 (NFMA) was the most significant law affecting the management of the national forests since the "Organic Act" of 1897. Before it, there had been little congressional and judicial action restricting on-the-ground management of the national forests. The NFMA pushed deep into the agency's traditional autonomy with substantive restrictions, almost all of which revolve around timber harvesting. Congress accurately perceived that most Forest Service actions flow from its timber program. The NFMA required that the Forest Service involve the public more in its decision making and hire people trained disciplines other than forestry and engineering." Roth 1989:27-28.

Historian Dennis Roth may overstate the significance of the NFMA Act given that other Congressional mandates predate it including: The National Environmental Policy Act of 1969, and Forest and Rangeland Renewable Resources Planning Act (RPA Act of 1974). And as he noted elsewhere (1984), the environmental era started for the Forest Service with the 1960s struggle over wilderness designation on national forests. By the 1970s the agency found itself under increased scrutiny for its timber and wildlife management practices. The agency employed expanding numbers of non-forester specialists in such areas as soil science, archeology, ecology, wildlife biology, and economics. Old-line managers felt somewhat at odds with these additions to their staffs since in their day they were generalists able to make action plans without project delaying or altering consultations. The antipathy was often rooted in value differences: the older forester often being dedicated to meeting commodity goals, and the non-timber specialists devoted collectively to protecting the ecological integrity of the forest.5

What is at issue here is not the absence of a land ethic in the agency, after all one enduring legacy of the Forest Service workforce of the past was the conviction that: we have always based our land management decisions on our professional expertise rather than political dictate. The fact that the Chief of the agency has always been a career professional rather than a political appointee is cited to stress the point. Chief McArdle illustrates the goal of the line manager when facing conflict among resource users:

"I believe that our inability to satisfy completely each and every group of national forest users is a definite sign of success....When each group is somewhat dissatisfied, it is a sign that no group is getting more than its fair share."

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[5] The interplay was described by Weitzman 1977:41:

> Most targets are set by divisions or staff groups. Thus, we find that communications with and loyalty to that division (or discipline) is often stronger than it is to the unit assigned. The reason is that the forest officer is judged by his accomplishment in that speciality and rewarded accordingly...(which) encouraged the timber field staff (on the Monongahela) to meet targeted timber goals rather than untargeted multiple-use management." The implications are further noted by Leman (1981:34) "One reason for the continued dominance of the timber goal is that many other goals are not stated in quantitative terms.

Radical Science and New Policy

It is not always possible to give all sides a slice of the resource when dealing with natural resources. Advocates of preserving certain tree types (old growth Douglas fir for example) are not willing to have the remaining stands of those trees part of the Forest Service timber base. The rise of environmental activism in the last two decades challenged both agency policy and its science.

The shift in public opinion from the commodity era after World War II to the environmental era of today is explained by the demise of the twin pillars of Forest Service policy: conservation management. "The resurgence of ecology in the 1960s challenged the traditional views of both science and politics" (Cawley 1990:13).

From John Muir's time on to the 1960s, preservation of nature was couched in spiritual values. This defense of wilderness garnered sympathy but often was ineffective in the policy arena because of the lack of public support. The national agenda of industrial development did not favor groups that seemed to advocate anti-growth views. Thus the conservation policy of Pinchot was the wider option for political support by most people. It took the radical times of the 1960s to produce advocates of nature who did not shy away from the implications of their views. Paul Sear, for example, in his 1964 essay "Ecology a Subversive Subject" challenged the merits of scientific management. In his view, in the area of natural resource management, the practice was for specialists to reduce complex ecosystems into parts which they managed without regard for the resource base as a whole. Cawley (1990:14) identifies the main difference between the science of resource managers and the "new" ecological science of their critics: the ecological perspective seeks to preserve the integrity of natural systems rather than maintain and increase the supply of goods and services from natural resources. Scientific management then is particularistic, subordinates nature to human needs, and seeks to improve nature through such projects such as replacing native stock with genetically superior super trees. What Cawley calls "scientific management" is clearly rooted in early conservation theory and contrasts with the ecology model. The two schools compete in the scientific and the political arena with the latter visible as the clash between preservationists and conservationists (now tagged as developers).6

Evolution of Land Ethic

The Forest Service has always had employees who cared about the land. The Ecological Society of America in 1917 formed a Committee for the Preservation of Natural Conditions out of concern that many native plant and animal communities were in danger of extinction. Honor belongs to the Forest Service for its distinction of having set aside the first "natural area" in 1927, the Santa Catalina Natural Area in the Coronado NF (Hendricks 1975:24-25). In the first half of the twentieth century, Aldo Leopold, Arthur H. Carhart, and Robert Marshall designed and helped implement a wilderness policy for the Forest Service (Roth 1984). And while Leopold began an essay in 1922 on "Standards of Conservation" for the agency to encourage resource improvement targets in the Forest Service, it was never finished (Leopold 1990) and it was not until long after his stint with the agency did his thoughts jell that a "science of land health needs, first of all, a base-datum of normality...the most perfect norm is wilderness" (Leopold cited in Callicott 1990:229-230). Substitute old-growth (ancient) forests of the Pacific Northwest for "wilderness" and you have the present state of research aims in the Forest Service.

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6 "This dichotomy of attitudes (conservation versus preservation) toward public land management among the citizenry has been a major factor in the turmoil over forest plans...With a few notable exceptions, such as the spotted owl, research directed toward the major concerns of the preservationists had been a low priority. Foresters inherited Pinchot's "tree farm" view of the forest and his belief in scientific forestry as the road to wise use of forestry resources. Research priorities have long been dominated by commodity production goals." (Natural Resource Council 1990:14).

The evolution of New Perspectives began decades ago in the area of wildlife management. In its infancy wildlife management in the agency reflected the utilitarian values of the time: emphasis was on fish and game protection and production for hunters and anglers. Limited by small staffs and budgets it evolved with the growth of the agency. One early sign of change was a memo by Lloyd Swift, then on the WO wildlife staff, in 1943 to his supervisor suggesting a wider focus on wildlife to include vanishing species (Roth 1989:21-22). Passage of the Multiple-Use Act of 1960 fostered greater attention toward the wildlife resource but Craig Rupp working in 1960 out of Region 4 RO as a multiple-use coordinator noted the work was almost entirely "mitigation" of potential damage to wildlife caused by timber and range activities (Roth 1989:27). The situation remained somewhat unchanged until after passage of the Endangered Species Act of 1973. The Forest Service caught up first to this new reality with publication of Wildlife Habitats in Managed Forests--the Blue Mountains of Oregon and Washington (1979), edited by Jack Ward Thomas, it was the first Forest Service book to provide "concrete direction for the management of game and non-game species alike" (Roth 1989:33).

Conclusion

Is New Perspectives new? The answer to that depends on your politics and science. If you are a conservation oriented person you might argue that it always has, or tried to, manage that way. If you are a "deep "ecologist" (preservationist) then the Forest Service has not done New Perspectives before. Obviously, the answer is not important. The agency has done both practices although tilted toward the commodity side more than land steward side when the two came into conflict. The absence of prolonged conflict between resource users (except for the range program) until the last few decades enabled the agency to foster wilderness and increased timber harvests as well. It remains to be seen if the two models of land management can endure in the future. I concur with the view that three slices of pie will be considered in the Forest Service of the future: tree farm or mono-crop forestry, the current multiple-use (benefits) forestry, and preservation forestry of natural/research areas (Salwasser 1990a). It may be that the agency will leave to private industry the mass production of single specie stands of hybrid fast growing trees harvested on a short rotation schedule in order to meet increased demand by consumers for wood products. The role of the Forest Service will be to evolve into a more balanced provider of the differing benefits now sought by a public that desires wildness as well as wood.

New Perspectives is many things to many people but it has one common element that is yet to be identified: It permits and channels internal debate in the Forest Service. The greatest benefit of New Perspectives is not being something old, new, and yet to come; instead it is the function it serves of allowing the debate needed to move the agency from past patterns of behavior that are no longer adaptive in a changed world.

Bibliography

Alexander, Thomas. 1987. "From Rule of Thumb to Scientific Range Management: The Case of the Intermountain Region of the Forest Service." *The Western Historical Quarterly*, Vol. 38, #4 (Oct): 409-428.

Bell, M.A. 1941. *Historical Development of Decentralized Administration in the Forest Service*. Part I & II. USDA Forest Service.

Callicott, J. Baird. 1990. "Standards of Conservation: Then and Now." *Conservation Biology*, Vol. 4, #3 (September).

Caufield, Catherine. 1990. "The Ancient Forest." *The New Yorker*. May 14.

Cawley, R. McGreggor. 1990. "Radicalism, Politics, and Science on Public Lands." Paper presented at the 1990 American Society for Public Administration Convention. Los Angeles, CA.

Clary, David A. 1986. *Timber and the Forest Service*. Lawrence, KS: University Press of Kansas.

Clepper, Henry. 1971. *Professional Forestry in the United States*. Resources for the Future, Inc. Baltimore, MD: John Hopkins Press.

Cermak, Robert W. 1979. "Staff, Staff Work and Staff/Line Relations." *Management Notes*, Vol. 23, #2 (November). USDA Forest Service.

Dana, Samuel Trask and Evert W. Johnson. 1963. *Forest Education in America: Today and Tomorrow*. Washington, DC: Society of American Foresters.

Egerton, Frank N. 1983. "Ecology and Forests." Pp. 139-143 in Richard C. Davis (ed.), *Encyclopedia of American Forest and Conservation History*. Vol. 1. New York, NY: MacMillan Publishing Company.

Hays, Samuel P. 1959. *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920*. Cambridge, MA: Harvard University Press.

Hendricks, Robert. 1975. "Natural Areas: Concepts, Legislation, Selection, and Management." Unpublished M.S. thesis. University of Tennessee.

Kaufman, Herbert. 1960. *The Forest Ranger: A Study in Administrative Behavior*. Resources for the Future, Inc. Baltimore, MD: Johns Hopkins Press.

Leman, Christopher K. 1981. "The Forest Ranger Revisited: Administrative Behavior in the U.S. Forest Service in the 1980s." Paper presented at the 1981 Annual Meeting of the American Political Science Association. New York.

Leonard, George. 1990. "Meeting the Challenge: Strength in Diversity." October 4. Presented at Subcommittee on the Civil Service, Committee on Post Office and Civil Service, United States House of Representatives.

Leopold, Aldo. 1990. "Standards of Conservation." *Conservation Biology*, Vol. 4, #3 (Sept.): 227-228.

McArdle, Richard E. 1953. "Multiple Uses--Multiple Benefits." *Journal of Forestry*, Vol. 51, #5: 323-325.

Marsh, George Perkins. 1864. *Man and Nature: Or, Physical Geography as Modified by Human Action.* Third Printing (1974) Edited by David Lowenthal. Cambridge, MA: The Belknap Press of Harvard University Press.

Pinchot, Gifford. 1947. *Breaking New Ground.* Seattle, WA: University of Washington Press.

Ponder, Stephen. 1987. "Gifford Pinchot, Press Agent for Forestry." *Journal of Forest History*, Vol. 31, #1 (January): 26-35.

Public Land Law Review Commission. 1970. *One Third of the Nation's Land. A Report to the President and to the Congress.* June. Washington, DC.

National Research Council. 1990. *Forestry Research: A Mandate for Change.* Washington, DC: National Academy Press.

Robertson, Dale. 1990. "A Look at New Perspectives." *The Friday Newsletter*, No. 37. September 14th. Washington, DC: USDA Forest Service.

Roth, Dennis. 1984. "The National Forests and the Campaign for Wilderness Legislation." *Journal of Forest History*, Vol. 28, #3 (July): 112-125.

Roth, Dennis. 1988. "A History of Wildlife Management in the Forest Service." (Revised July 1989) Unpublished MS. Washington, DC: USDA Forest Service, History Unit.

Roth, Dennis. 1995. "The Forest Service in the Environmental Era." FS-574. Washington, DC: USDA Forest Service, History Unit.

Ross, John R. 1975. "Man Over Nature: Origins of the Conservation Movement." *American Studies*, Vol. 26, #1 (Spring): 49-62.

Salwasser, Hal. 1990a. "Gaining Perspective on Forestry for the Future." Speech at the Annual Convention of the Society of American Foresters. 1 August 1990. Washington, DC

Salwasser, Hal. 1990b. "New Perspectives in Multiple-Use Management and Research." Draft paper for SAF Convention on 17 August 1990. Washington, DC

Schweitzer, Dennis L. 1990. "What Are Multiple Use and Sustained Yield In the New Political Economy of Forestry?" Comments at SAF Meeting. Washington, DC: USDA Forest Service, LMP.

Siskiyou National Forest. 1990. "Shasta Costa: From a New Perspective." USDA Forest Service.

Steen, Harold. 1976. *The U.S. Forest Service: A History.* Seattle, WA: University of Washington Press.

Tipple, Terence and J. Douglas Wellman. 1990. "Herbert Kaufman's Forest Ranger Thirty Years Later: From Simplicity and Homogeneity to Complexity and Diversity." Paper presented at Annual Meeting of the American Society for Public Administration Roundtable on the Forest Ranger. Los Angeles, CA. April.

Weitzman, Sidney. 1977. "Lessons from the Monongahela Experience: An In-Service Analysis Based on Interviews with Forest Service Personnel." USDA Forest Service.

Wolf, Robert E. 1989. "National Forest Timber Sales and the Legacy of Gifford Pinchot: Managing a Forest and Making it Pay." *University of Colorado Law Review*, Vol. 60, Issue 4.

Wolf, Robert E. 1990. "The Concept of the Multiple-Use Sustained-Yield Act of 1960: The Evolution of the Idea in the Forest Service and the Enactment of the Law." Unpublished manuscript. August. Prepared for the Office of Technology Assessment. U.S. Congress.

REFORESTATION AND OLD GROWTH IN REGION SIX

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INTRODUCTION

Professional foresters both in industry and government were concerned with reforestation starting in the 1950s because accelerated timber harvests were eating into existing stands of merchantable timber. In addition, clearcuts had quietly replaced partial or selective cutting as a favored harvesting technique on forests in the Pacific Northwest and elsewhere. This shift was justified by foresters because both private and government foresters now had funding for regeneration. Even-age stands became a silvicultural goal. New advances in planting and timber stand improvement techniques encouraged optimistic predictions about the viability of regeneration.

Natural regeneration was no longer relied on for insurance that new stands of timber would grow. The desire to produce more timber in shorter periods of rotation by improving growth rates led to experiments with genetically improved nursery stock, and timber stand improvement (TSI) measures such as thinning young stands, pruning lower limbs, etc. All these practices were fueled by what appeared in the 1950s and 1960s an ever increasing national demand for wood.

By the mid-1980s the tide flowed the other way with political pressure being exerted on the agency by environmental groups and Congressional allies to preserve remaining stands of old growth on the national forests, especially in the Pacific Northwest. The debate is complex enough on the issue that participants are aware that reforestation or the lack of it is not the primary causal variable underlying the decision by the Courts and Congress to reduce the allowable sales quality (ASQ) in region 6 to 1.2 billion bf. or roughly 1/5th the ASQ of the 1980s.

For many outsiders it is mainly a struggle to preserve ancient forests, for others it is a concern with biodiversity, and even the economics of tourism fueled by recreation. What is clear, however, is that expected second growth regeneration expectations by the Forest Service contributed to the intensified harvests of old growth that took place in the Douglas-fir region of Washington, Oregon, and northwest California. This "conspiracy of optimism" is indicated in an internal study–*Douglas-Fir Supply Study: Alternative Programs for Increasing Timber Supplies From National Forest Lands*, published in 1969: 22):

> About 90 percent of all reforestation programs are financed with K-V funds. Since average annual acres of harvest cut were used as the basis for the reforestation program in each decade, costs do not vary greatly from one decade to the next. Under high intensity management the backlog of nonproducing acres was assumed to be regenerated in the first decade. Thereafter the program consisted of reforesting only areas currently cutover.

KV Funds

The expression "KV funds" is a bit of Forest Service jargon newly employed field people quickly learn, because it is common term for a source of money for projects and salaries on a ranger district. The origin of this fund is found in the Knutson-Vandenberg Act of June 9, 1930, which was "the outcome of an effort to speed up reforestation and improve silvicultural practices in the national forests (Dana and Fairfax 1980: 130)."

This Federal reforestation acceleration started with passage of the 1924 Clarke-McNary Act and its provision for cooperative tree distribution. The first trees were distributed to state and private forest landowners in 1926. The agenda was furthered by creation of a forestry research program, which included requiring a forest survey, authorized by the 1928 McSweeney-McNary Act. The continued leadership of

Congress in setting forest and range management direction culminated in passage of the Knutson-Vandenberg ("KV") Act with its specific focus on reforestation.

In Forest Service budget terminology, the KV Act set up a line-item provision (appropriation) for operation of nurseries and plantations on national forests. The authorized appropriation for operation of nurseries and plantations was $250,000 for the fiscal year 1932, growing each year so that by 1934 it was at $400,000. It also provided (Section 3) that additional charges could be made in timber sales to provide a special fund for reforestation or silvicultural improvement of the cutover area resulting the timber sale.

The field response to this new funding source was tardy as noted by Howard Hopkins (WO Timber Inspector):

> In actual accomplishment to date we find only very isolated attempts to put this law into use for the improving of the silvicultural conditions on the cut-over sale areas...To the vast majority of rangers and supervisors the Knutson-Vandenberg Act is another piece of red tape machinery, to be talked about at meetings, and to be forgotten in the field (Hopkins 1932: 4).

The neglect of KV funds, or even future use plans, was attributed by rangers to the Depression. The decline of timber harvests on national forests in this period rendered reforestation a low priority for projects in the agency, it was not until the economic booms years did the inverse occur, when large volume sales distracted rangers from targeting reforestation needs. Yet, reforestation has always defined the creed of professional forestry and been a part of the mission of the Forest Service from its beginning.

Forest Service Reports on Timber Famine

Reforestation or the regrowth of new sawtimber on logged over lands is essential for achieving sustained-yield timber management on public and private forests. Since the 1897 Forest Management ("Organic") Act specified supplying timber to the nation as a central purpose of the newly created Forest Reserves (renamed National Forests in 1907), the Forest Service took an active leadership role in promoting reforestation. Agency officials, to enlist public support for national reforestation, issued a series of reports to Congress.

For example, a 1920 Forest Service ("Capper") report to Congress warned of forest depletion as a major national problem. Ironically, forest net annual wood growth actually rebounded nationally in 1920, with total forested area about constant from that date, after its severe decline in the 19th century and first two decades of the 20th (Clawson 1983: 199; MacCleery 1992). Only three years later the Senate passed a resolution (SR 398 on March 7, 1923) to provide for an investigation "relating to problems of reforestation, with a view to establishing a comprehensive national policy for lands chiefly suited to timber production, in order to insure a perpetual supply of timber for the use and necessities of citizen of the United States."

The threat of depleted timber supplies led former Forest Service Chief Gifford Pinchot to endorse a polemic entitled Deforested America (1928) by Major George P. Ahern, the first chief of the Philippine Forest Service. The booklet warned of the risks of depending on private forests and the forest industry for future supplies of timber for the nation; instead, Ahern argued that based on past patterns in other nations, government control was required to insure that sustained yield forestry would be practiced on commercial forest lands. The argument for Federal regulation of private forestry, and for reforestation, reappeared in the next report to Congress submitted in 1933 (widely known as the "Copeland" report), which called for a massive planting of 50 million acres. Private industry rebuffed any attempts at Federal government control of forestry, but did commence its own tree planting efforts in this period.

At the Federal level the Depression reforestation effort was massive including national forest lands, but today is remembered largely for its erosion control projects on farmlands in the Great Plains, such as the massive shelterbelt from Canada to Texas planted by the Civilian Conservation Corps. Renewed

attention to the subject appeared after the war in a report of the Joint Committee on Forestry of the National Research Council and the Society of American Foresters. Chaired by ex-Forest Service Chief Henry S. Graves, the Council's position on the danger of future forest depletion was that:

> The discrepancies between forest growth and drain vary greatly in different regions. But the excess of drain over growth for the forests as a whole emphasizes the urgent need for constructive management of second-growth forests in order progressively to increase production both in quantity and quality of raw material (Society of American Foresters 1947: 14).

The problem of forest depletion was repeated in a 1949 essay by a Forest Service staff consultant that was published in the *USDA Yearbook of Agriculture* (Behre 1949: 719). He maintained that "the crux of the country's forest problem is the continued shrinkage and deterioration of forest growing stock." The author advocated planting 75 million acres "now denuded or only poorly stocked."

A *Timber Resource Review* (TRR) by the Forest Service in 1955 (IV C) described how on all commercial forest lands it was those in the South that were most successful in generating new growth on cutover forest lands. It predicted (1955: 19) that nationally, by 1975, "the more favorable planting sites and largest block of plantable areas should be reforested." If not, the TRR summary concluded:

> The Nation's timber requirements are expected to be so high by the end of the century that timber growth will need to be from 70 to 120 per cent greater than it now is. Improved forest management at recent rates of progress appears unequal to providing a balance between cut and growth at the year 2000.

The response by industry was swift and strong. In a press release dated September 14, 1956, A.Z. Nelson, Forest Economist, National Lumber Manufacturers Association, warned that "timber famine" forecasts of the U.S. Forest Service "could lead to government dictatorship" of the nation's forest resources. At a talk given at the annual meeting of the Western Pine Association in Portland on the same day, Nelson touted the capacity of private industry to satisfy future wood product needs:

> by the end of 1956 there will be over 9,000 Tree Farms in 41 states with more than 41 million acres. This Tree Farm acreage is increasing at the rate of about 5 million a year. Today we have over 17,000 trained foresters with about 1000 additional foresters graduating each year...There is no one more interested in an adequate timber supply to assure permanency of operation than is the typical lumberman (Nelson 1956).

(A more quantitative critique of the statistical analysis by the Forest Service cited in the TRR is found in Zivnuska [1956].)

Reforestation Techniques

Among the changes in reforestation techniques was a shift from relying on natural seed trees in shelterwoods to hiring crews to plant two-to-three-year old seedlings in clearcut sites that sometimes had been treated chemically. These herbicides were used to retard competitive vegetation in a complex of operations called "site preparation." The first step in this process is brush disposal performed by "BD" crews who first burn off the slash left on the ground of a sale unit after it has been logged. The elimination of brush and logging debris makes it easier to dig a hole to place each seedling and limits competitive vegetation from choking out the young fir or pine tree until it is tall enough to gain its place in the sun.

The use of nursery stock did not totally eliminate an earlier practice of restocking clearcut locations via the air or ground distribution of seeds. When crews used this broadcast method rodentcides were employed to prevent animals such as mice, moles, etc., from eating the freshly sown seeds. The common practice, however, came to be the manual planting of nursery stock often by contract crews. The quest for

successful rates of regeneration has led over the years to Forest Service experiments with a variety of tools such as sunshades, netting, etc. to limit deer browse or sun kill during the initial tender stage of life of the young tree.

The continued experimentation reflected the demands placed on Forest Service reforestation staff to hasten production rates of new forest stocks to keep pace with increased harvest levels. However, it was not the paucity of data on viable reforestation techniques that led to lags in the program, instead according to Richard Fitzgerald (personal communication 8/20/93):

> At the time of the large increase in harvest in the early and mid 1950s in region six, we knew about elevation and local sources (as factors in planting success, see for example the work of Isaac and Munger). It is true, like most areas, that there was a lag time in implementing what we knew on all Forests and Districts...a related factor is that some people felt they had a right to make their own mistakes, own tests...the problem is that the stand did thrive for a time and the problem not show up for 15-50 years later.

Case Examples

Because of the desire to balance growth with cutting levels in 1965, the Willamette National Forest in western Oregon established the following policy:

> all clearcut areas shall be planted or seeded naturally or artificially within one year following slash disposal, or following cutting if slash disposal is not required. Current management plans include an objective of satisfactory stocking at the end of an average 5-year regeneration period (Burns 1973: 145).

The rationale for this policy is found in a Willamette National Forest study in 1960 that showed that 36 per cent of the clearcut areas were not satisfactorily restocked 7.5 years after slash disposal. The forest began an intensive program of restocking and by 1964, only 2,477 acres out of 41,192 examined were still unsatisfactorily restocked after 7-years. Further study revealed that sites below 3,000 feet in elevation regenerated within 10-years, but above that elevation, especially on steep slopes, southerly aspects and ridge tops "were sometimes inadequately restocked as long as ten years after cutting, and some appeared to show little promise for prompt reforestation in the future, mainly due to dense brush cover and severe dryness." Maybe for this reason, "few high elevations areas were logged more than ten years ago." As the quest for remaining stands of old growth led to logging of steeper ground, the issue of reforestation emerged as an environmental ("political") concern and debate.

Annual Cut and Planting Success

It is critical to recognize that each national forest varied in its harvest level and regeneration plans. The Timber Management Plan for the Siskiyou Working Circle (July 1, 1962-June 30, 1969) called for an annual cut of 188 million board feet until 1969, when it was raised to 190.9 million board feet; the plan was amended again in 1972, with the annual cut set to increase to 209.9 million by 6/30/74.

An estimated 5,000 acres were to be harvested annually on the Siskiyou National Forest beginning in 1962, most of it in 250-year and older stands. The forest timber management plan described a reforestation problem "due to high temperatures and a long, extremely dry summer season (especially on the south and west slopes of the Galice and Illinois Valley blocks)." Rapid brush encroachment and game browsing added to the difficulty of restocking cutover (or burned over) areas. The reforestation goal was 250 "well-distributed, established seedlings per acre" with a rotation period of 95 years; added was another 10-year regeneration and establishment period to round the total time required to a 105-year cycle between harvest and planting. The Siskiyou justified the longer 10-year regeneration period because "regeneration of cutover, nonstocked and understocked areas has been very difficult."

The issue of reforestation difficulties was not a political one while large stands of old-growth remained. But as the supply dwindled the question emerged about why certain national forests were so dependent on old growth for their merchantable timber supply?

The Limits of KV Funds

An external group sponsored by Ralph Nader that investigated the subject reported in 1972: "Reforestation delays and failures have long plagued the National Forests...5,520,000 acres make up a 'reforestation backlog' (Barney 1972: III-4-5)." It is important to note that this backlog included large areas burnt over by fire in previous decades, and not just acres deforested by logging. Part of the problem according to the report was inadequate K-V funding:

> For one thing the Act does not always require timber harvesters to provide adequate funds for reforestation. The sell of low-quality timber yields insufficient revenue, including KV deposits, to finance reforestation. Moreover, the Forest Service cannot treat the completed sale receipts as KV funds and devote them to reforestation. In most instances, statute requires the Forest Service to return to the counties in which timber is harvested 25 percent of all sale receipts. To reforest areas containing low quality timber, the Forest Service often must request regular Congressional appropriations. KV funds could be shifted from surplus areas to short ones but the Act does not permit this to be done, although some individual forests shift KV funds among districts. Nor does the K-V act provide funding for second tries at reforestation when first efforts fail.

Forest Service reforestation expert Walker P. Newman is quoted as saying, "K-V limitations don't give us enough money to reforest...We know it takes some (appropriations) every year to maintain the area cutover." The Nader report also noted that the agency reforestation effort was aimed at recent cutover areas, and that the backlog of past ones was a secondary target.

The limits of KV funds for national forest reforestation was repeated in a study of the Forest Service by Glen Robinson:

> Provision for KV funds...is discretionary with the officer planning the sale...where significant reforestation is desired, a KV deposit will be required. KV funds are limited to sale areas from which they are collected, they cannot be used for timber stand improvement or reforestation of burned or blowndown areas, or for other areas in need of (work)...Reforestation of nonsale areas must be paid for with general appropriations...leading to backlog of nearly 5 million acres in need of reforestation (Robinson 1975: 74-75).

The limits to use of KV funds was partly corrected with the passage of the National Forest Management Act of 1976, which "expanded the purposes for which KV funds collected thereunder could be used (Cliff 1977: 513)."

The Real Issue

The key to even-flow based forestry is reforestation and by the mid-1960s timber harvest levels in Region 6 began to raise concerns by timber managers regarding sustainability. C. Glen Jorgensen, retired former director of Timber Management in Region 6, stated in an interview:

> the allowable cut for the region in 1966 was 4.3 billion...ranger personnel would say "my allowable cut is too high." A staffer in timber management made the first intensive review of the status of reforestation in region 6 of our harvest areas. And the record wasn't good. It shocked us, really. Really shocked us. As a result of that, we really had to generate a program, get on top of our regeneration problem. Particularly, we were not meeting our objective of regenerating within 5 years. And up to that time, the king job in the region was the timber sale man. He's the one that brought in the volume and the money, to the Forest Service. And the least experienced and least qualified forester in the district was assigned the regeneration and silviculture responsibilities. That's the way it was, because emphasis hadn't been given to silviculture and regeneration, at least sufficient efforts and interest hadn't been given (Jorgensen 1986: 249-262).

This assertion is confirmed by the Forest Service budget, the final indicator of what is a priority and supported financially. In the period from 1954 to 1970, the Forest Service received 66 percent of the budget increases requested from Congress for timber sales administration, but only 17 percent for reforestation (Weitzman 1977: 37). It was apparent that KV funds alone were not adequate to finance the level of reforestation required to keep pace with the vast increased in timber harvests being demanded in the Pacific Northwest.

After a visit by Jorgensen to the Washington Office to discuss the issue with Chief and Staff, the issue of harvest level and regeneration were resolved by a pledge to practice more intensive management. The Washington Office was to provide adequate funds for thinning, genetics, improved utilization, all the practices that affect the volume of cut:

> The Chief even redefined "even flow," he said our objective is to maintain or increase harvest levels...the Chief changed the policy to "nondeclining even flow." The Gifford Pinchot National Forest [GP] would be the test forest in the nation and the Chief would give it intensive financing. We based their (Gifford Pinchot) cut on a certain level of intensive management to be carried out...just to give you some figures that were kind of interesting, in 1975, the base level, if we hadn't done any intensive management--all we'd do is harvest timber and let nature restock it--the allowable cut would have been 293 million....but we implemented the GP plan based on the Chief's promise of financing at 404 million, which required a major increase in intensive cultural treatment...

Jorgensen recognized the interest in allowable cut was generated by the big business the timber industry represented in this period to the regional economy. "That's always been a pressure point on the Forest Service, to cut the old growth faster. It's rotten, getting worse. Get a young stand to replace it (Jorgensen 1986: 260)."

The national market for home construction softwood timber, at a time when private stocks were declining in the Pacific Northwest (Society of American Foresters 1947: 15) and immature in the South, led to pressure on national forests in Oregon and Washington to fill the demand beyond its traditional regional market. (By the 1980s the export of logs off private lands to Japan led to industry pressure to increase harvests on national forests to supply the domestic market). The consequences of escalating timber harvests in the region were made apparent in 1976 when Georgia-Pacific moved its headquarters back to Atlanta from Portland. The South is now the leading regional producer of wood in the nation.

Real Limits

The answer to the question of how fast should we liquidate old growth timber in the Pacific Northwest Region was partly based on predicted high rates of reforestation success. The natural barriers to success (high elevation south facing slopes, unexpected dry weather) linked with human barriers (lack of funding, rushed crews) sometimes prevented reforestation or timber stand improvement (TSI) work from reaching its targeted level. For example, a letter to the Chief from the Director of Timber Management (April 23, 1980) explained the failure to meet the Chief's Action Plan for Reforestation and TSI on the National Forests

> The Action Plan (dated July 1978) was not distributed until October 1978 and listed many optimistic target dates. Many actions are dependent upon the recently completed Land Management Planning Regulations resulting in missed target dates. The (WO) Silvicultural staff experienced a complete turnover during 1978 and 1979 with three positions vacant for up to 6 months. Several actions required Timber Management Research leadership. That staff group experienced a similar turnover of personnel...Enclosed is an amended plan for the uncompleted items. Revised target dates have been established which appear realistic.

At the field level, as described in a guide *Regenerating Oregon's Forests* the failure to consult the regeneration forester in time led to poor coordination on reforestation projects:

> Traditionally, the regeneration forester has been called upon to come into the planning phase after the harvest operation was completed. Reforestation success, however, is influenced by the type of reproduction system chosen and the timing and intensity of the cut. Reforestation and harvesting must be coordinated in time and effect. The increasing demand for wood and paper products from a finite forest resource makes reforestation essential. Reforestation no longer can be dealt with as an afterthought (Cleary, Greaves, and Hermann 1978: 4).

A somewhat similar conclusion was arrived at by a Productivity Improvement Team who noted that in FY 1982 the National Forest System reforested 382,794 acres with a total expenditure of $121,400,000. It was the high cost for this item that led to the team study on how reforestation costs could be reduced. The conclusion:

> Successful reforestation is dependent upon a chain of events extending over a period of several years. The technology and knowledge to do the job is generally available; however, failure to adhere to know practices and accepted procedures appears to be a major cause of reforestation failure USDA Forest Service 1983: 1-2).

The result was that in FY 1981 18 percent of the acres reforested were a repeat of past efforts. No "miracle" technology to revolutionize reforestation programs was found, instead... "we will have to rely on known and accepted procedures and practices plus a lot of hard, dirty work to get the job done right."

Human Limits and Fake Forests

Tree planting used to be a normal, if unpleasant, winter work force account for Forest Service employees in region 6. But as the timber program expanded, much of it was contracted out. However, even when done by its own people, the job sometimes led to poorly planted trees or worse. The worse was exposed in a November 12, 1985, article in *The Wall Street Journal* by William Blundell, who wrote:

> The (Forest) Service has been rocked by a study done by forester XX of the Tahoe National Forest, who, as part of a management training course, surveyed 159 fellow employees reforesting tracts in Forest Service Region Five...X found that some of the work claimed to have been done over the past five years has been, in effect, a sham. Under pressures to meet acreage targets handed down from above, many knowingly did deficient work, and some admitted to reporting as completed jobs they hadn't done at all. The acreage affected is unknown but not great. The nature of X's findings, however, casts doubt over the

> service's entire system of reforestation funding and management, the key elements in its stewardship over 191 million acres holding half the construction-grade timber in the U.S. "To maintain productivity, we have to sure that reforestation is accomplished on the ground, not just on paper," says George Leonard, director of timber management for the service.

The article concludes with an explanation by environmentalist critic Randall O'Toole: "Its (Forest Service) budgets have been lean in recent years, but the service also draws large sums from trust funds (K-V money) not controlled by Congress when it reforests logged-out land. It is using a surprising percentage of this money for administrative overhead, which is shared by every office in the service."

The Forest Service Review Team Report (May 1985:3) on the short course paper by X found the following:

> The review confirmed X's observation that District personnel...want to do quality work...and confirmed the stress...We found that Forest Service field personnel have a strong desire to reforest many areas that are becoming over-crowded by weeds and brush. Pressures to reduce reforestation costs per acre and the ban on herbicides frustrate attempts to insure reforestation. Without the use of herbicides...field people (are) cutting brush that often sprouts right back to crowd out young trees. It is discouraging and frustrating to spend so much money and labor on a reforestation area in April and see the weeds and brush growing over tree seedlings in October. Like the X paper, our interviews detected Ranger District perception that their Forest and Regional Offices were more interested in achieving quantity targets (at low costs per acre) than in quality of reforestation accomplishment....

Continued Critiques

The issue has not gone away, the latest blow being a United States General Accounting Office report "Forest Service: Better Reporting Needed on Reforestation and Timber Stand Improvement" (March 15, 1991). The essence of the report is found in a testimony by Flora H. Milans before the Forests, Family Farms, and Energy Subcommittee, Committee on Agriculture, House of Representatives on April 16, 1991:

> In summary, our reports shows that the Forest Service's reporting on reforestation and TSI activities is inaccurate and inconsistent. As a result, the Congress does not have reliable information to assess the progress the Forest Service has made in these areas and to make informed decisions on funding for forest management.

The report cited several areas of neglect by the Forest Service: It failed to provide specific guides to the field on how to report reforestation (and TSI) needs, it "understated" reforestation needs, and it does not supply sufficient guidance (to regional offices) on how to certify and report the successful completion of reforestation and TSI activities. Why this became an issue is because of the requirements of the National Forest Management Act of 1976.

Of its 191 million acres, the Forest Service designated 55.8 million as suitable for timber production. "To provide the nation with a stable, continuous supply of timber, NFMA contains specific directives on regenerating national forest land (USGAO 1991: 2)." In 1976, when Congress passed the Act, the Forest Service identified a backlog of 3.1 million acres in need of reforestation. The Forest Service was to report its progress in reforestation and specify the funds needed to end the backlog within 8 years. By FY 1990 the Forest Service listed 1.2 million acres of national forest land as requiring reforestation, and an equal number of acres that needed TSI. The report recommended improved instructions be issued to the field and certification of reforestation achievements.

The issue of reforestation surfaced again in a document compiled by the staff of the Committee on Interior and Insular Affairs, U.S. House of Representatives (June 15, 1992) entitled "Management of Federal Resources: The Loss of Accountability." It was divided into three parts whose headings summarize the main

themes of the report: "Reforestation Failures and Slow Regrowth on Tree Farms, over-optimistic projections of tree farm growth, and inflated/inaccurate inventories of standing timber volume." Here we are at the core of the problem facing the agency. Because, according to the staff report, "Accumulated data indicates that the Forest Service (and BLM) programs have not fulfilled this mandate (U.S. House of Representatives 1992: 1)." The mandate that the national forests be managed on a "sustained yield" basis (use should be limited to the level that can be maintained in perpetuity). Instead, 3.4 million acres, 57% of the native, old-growth forests on Forest Service land in Oregon and Washington, have been cut down since 1955. The report continues:

> Two-thirds of the prime commercial timber on Forest Service lands in the Pacific Northwest has been cut down over the last forty years. However, the amount of this cumulative decline was never reported until the listing of the northern spotted owl under the Endangered Species Act required such accounting. The decline was not reported directly by the Forest Service, but instead appeared in the 1990 Status Review of the owl by the Fish and Wildlife Service (U.S. House of Representatives 1992: 1).

The final judgement cited (U.S. House of Representatives 1992: 2) on why the remaining inventory is critical stems from the claim made that in the Pacific Northwest "current forest regrowth is only 64% of the volume being cut." The three errors in agency models that permitted such high harvests were: 1) reforestation failures and slow regrowth on tree farms, 2) over-optimistic projections of future tree farm growth, and 3) inaccurate inventories of the standing timber volume. An example of number 2 is the claim of "99% success" predicted on the Siskiyou National Forest (Greenup 1988).

CONCLUSION

The final result for the agency is a poor public image fostered by such articles as "In Search of Phantom Forests" by Reed McManus in the July/August issue of *Sierra*, the official magazine of the Sierra Club. With his statement: "If you pretend there is more wood out there than there is, you can justify cutting more" the issue is reduced to its basic level. As a result, the Forest Service timber harvest volume in the Pacific Northwest is now down to 1.2 billion board feet. Here it is obvious that reforestation efforts in region 6 did not keep pace with the vast increases in harvest levels, nor was it a priority during this period of feasting. As it became evident that a major backlog was developing, efforts increased but were frustrated by the typical hurdles of lack of adequate time and budgets. Furthermore, it was complicated by court cases that removed reliance on standard tools such as herbicides just as costs of labor were escalating.

There was no deliberate conspiracy by the Forest Service to shirk its reforestation goal, a goal that it long clamored for the nation. In fact, some of its leadership advocated Federal control over private timber practices. A step they deemed necessary to achieve sound forestry practices in the nation and thus insure the future of timber supplies to meet expected growth in demand levels. In regard to the national forests alone, the agency predicted they would need to harvest 20 billion board feet by the year 2000 in order to help supply the market at that date.

Instead, the culprit was the desire to do the job demanded by congress and industry during decades of expanding housing construction. By meeting this demand the Forest Service helped create logging jobs in rural areas bereft of viable income alternatives for local residents. The issue is past the finger pointing stage now as the cut is way down on national forests. Ecosystem management rather than sawtimber production is rapidly becoming the defining agenda of the agency. As for the future, it is safe to say that Congress will fund reforestation with the money required to end the backlog, and it will be an elevated task in the eyes of field managers, but one tightly monitored by Congress.

NOTES

Sustained Yield: Continuous production with the aim of achieving at the earliest practicable time an approximate balance between net growth and harvest either by annual or somewhat longer periods.

Allowable Cut: The amount of annual or periodic harvest authorized by administrative decision, generally under the policy of sustained yield. It may be greater or less than sustained yield.

Commercial Forest Land: Land bearing or capable of bearing timber of commercial character and economically available now or prospectively for commercial use and not withdrawn from such use.

1. "Foresters in California have noticeably shifted their attitude toward reforestation within the past 10 years. Until the 1950s, they had generally regarded tree planting as an unrewarding gamble...before 1953, only 31 percent of the plantings in the State became established...recent years on the upswing...Since 1957, for example, 85 percent of the plantings on National Forests in California have succeeded...early interest in reforesting federal lands...about 200 acres a year were planted on Forest Service lands between 1910 and 1920... (Schubert and Adams 1975:1-2)."

BIBLIOGRAPHY

Barney, Daniel R. 1972. *The Last Stand: The Nader Study Group Report on the U.S. Forest Service.* Washington, DC: Center for Study of Responsive Law.

Behre, Edward C. 1949. "Today and Tomorrow: Forest Land and Timber Resources." Pp. 715-721 in Alfred Stefferud (ed.) *Trees: The Yearbook of Agriculture 1949.* United States Department of Agriculture. Washington, DC: U.S.G.P.O.

Burns, Robert. 1973. "Cultural Change, Resource Use and the Forest Landscape: The Case of the Willamette National Forest." Pd.D. Dissertation. Eugene, OR: University of Oregon, Department of Geography.

Clawson, Marion. 1983. "Forest Depletion and Growth." Pp. 196-200 in Richard C. Davis (ed.) *Encyclopedia of Forest and Conservation History.* Volume I. New York, NY: Macmillan Publishing Company.

Cleary, Brian; Robert Greaves; and Richard Hermann. 1978. *Regenerating Oregon's Forests: A Guide for the Regeneration Forester.* Oregon State University School of Forestry. Corvallis, OR: Oregon State University Extension Service.

Cliff, Edward P. 1977. "TIMBER: Timber Resources." Public Land Law Symposium. *Denver Law Review*, Vol. 54, #3-4: 507-531. Denver, CO: The University of Denver College of Law.

Graves, Henry. 1947. *Problems and Progress of Forestry in the United States.* Report of the Joint Committee on Forestry of the National Research Council and the Society of American Foresters. Washington, DC: Society of American Foresters.

Greeley, William B. 1920. "Timber Depletion, Lumber Prices, Lumber Exports, and Concentration of Timber Ownership. Report on Senate Resolution 311." June 1, 1920. USDA Forest Service. Washington, DC: U.S.G.P.O.

Hopkins, Howard. 1932. "Timber Sale Stand Improvement." *Service Bulletin*, Vol. 16, #4 (Jan 25): 3-4. Washington, DC: USDA Forest Service.

MacCleery, Douglas. 1992. *American Forests: A History of Resiliency and Recovery.* USDA Forest Service FS-540. Washington, DC: U.S.G.P.O.

McManus, Reed. 1992. "In Search of Phantom Forests." *Sierra*, July/August: 32-34.

Nelson, A.Z. 1956. "The Great Guessing Game." Talk given at the annual meeting of the Western Pine Association, Portland, Oregon, September 14, 1956. 10 pp. unpublished ms. Washington, DC: USDA Forest Service, History Unit.

Philbrick, John R. and H.R. Mansfield. 1954. "A Plan of Management for Timber Resources of Siskiyou National Forest." Grants Pass, OR: Siskiyou National Forest.

Schubert, Gilbert and Ronald S. Adams. 1975. *Reforestation Practices for Conifers in California.* Sacramento, CA: State of California, Division of Forestry. Third Printing.

Siskiyou National Forest. 1962. "Timber Management Plan. Siskiyou Working Circle." Grants Pass, OR: Siskiyou National Forest.

Twight, Peter A. 1973. "Ecological Forestry for the Douglas Fir Region." Washington, DC: National Parks and Conservation Association.

USDA Forest Service. 1969. "Douglas-Fir Supply Study: Alternative Programs for Increasing Timber Supplies from National Forest Lands." Pacific Northwest Forest and Range Experiment Station. USDA Forest Service. Washington, DC: U.S.G.P.O.

U.S. House of Representatives, Committee on Interior and Insular Affairs. 1992. *Management of Federal Resources: The Loss of Accountability*. Report dated June 15, 1992. Washington, DC: U.S.G.P.O.

U.S. General Accounting Office. 1991. *Forest Service: Better Reporting Needed on Reforestation and Timber Stand Improvement*. Report dated March 15, 1991. Washington, DC: U.S.G.P.O.

Zillah, Walter and Roland Rotty. 1955. "Timber Resource Review. Chapter IV. Factors Affecting Future Supply and Quality of Domestic Timber, C. Forest Tree Planting." Review draft, September. Washington, DC: USDA Forest Service, History Unit.

Zivnuska, John A. 1956. "Timber Today - And Tomorrow: An Independent Appraisal of the Timber Resource Review." (Preliminary Review Draft). Prepared for the Forest Industries Council. Berkeley, CA: University of California, Department of Forestry.