Conservation on the Cusp: The Reformation of National Forest Policy in the Sierra Nevada

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ABSTRACT

From 1960 to 1999, a variety of laws and other public policies influenced the management of the national forests in the Sierra Nevada. Existing laws and new statutes contained directives for the planning, management, conservation and preservation of national forest lands and resources. The National Environmental Policy Act (NEPA) forced the U.S. Forest Service to disclose information about land management plans and their impacts. The stattre also led to greater public awareness of management issues and increased public involvement in agency decision-making. As a result, efforts to increase timber production in Sierra Nevada national forests met increased public scrutiny, and with political and legal opposition. The National Forest Management Act of 1976 (NFMA) mandated extensive planning to promote effective and efficient conservation and use of forest resources and to resolve forest management controversies. However, the conflict between the demand for increased timber and demands for increased recreation and wilderness preservation limited NFMA's effectiveness. Discord over national forest policies did not begin with NFMA, but the broad scope of land management planning generated remarkable public attention and controversy. Public opposition to increased clearcut-

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ting and other activities that potentially led to impacts on wildlife habitat and other aspects of ecosystems led to administrative and legal challenges to national forest plans.

In the early 1990s, the Forest Service's reinterpretation of existing law impelled it to extensively revise both its management objectives in the Sierra Nevada and its planning for the national forests in the region. Agency planning sought to better incorporate scientific knowledge about species and habitat requirements into an ecosystem management strategy. Instead of ending the uncertainty over the conservation and management of forested lands and resources, eight years of agency planning pursuant to this new perspective engendered additional controversies. The continuing inability to resolve environmental issues strongly indicates both a need and opportunity for significant changes in the institutional structures governing the national forests ofthese lands.

TABLE OF CONTENTS

INTRODUCTION

Natural resource policy and planning initiatives in the Sierra Nevada, California's spectacular mountain region, have had profound implications for the management of the area's natural resources. This study explores a range of public policies and issues associated with national forest management, and examines their impact on the administration of the national forests of the Sierra Nevada during the period from 1960 to 1999. Environmental activism, public interest litigation, internal agency decisions, and legislative initiatives of the past four decades have changed the traditional management practices of the federal resource management agencies. Environmental politics, directly or indirectly, led to many policy modifications. Evolving scientific understanding of natural resources intersected with broader social and legal developments. Reforming natural resource management led to major statutory, administrative and legal changes. As a result, national forest management policy for the national forests of the United States has been dramatically restructured dur-

ing this period. Initiatives for reform have addressed two interrelated phenomena that present significant challenges in governance for the region: 1) political activism resulting from environmental and social concerns; and 2) incapacity of public institutions and private market forces to improve environmental conservation and management. This research evaluates the progress of these initiatives and offers a "rethinking" of the prospects for natural resource management and ecosystem conservation in the Sierra Nevada.

Prior to World War II, the Forest Service had established a reputation for expert management in public administration, and for being an able player in national politics.[1] After World War II, many aspects of national forest management became increasingly controversial. A post-war building boom created unprecedented demand for timber from the national forests. Simultaneously, increasing numbers of Americans began to look to the national forests for recreation and for other opportunities. Conflicts developed over the Forest Service's management and allocation of these lands. Consequently, support for Forest Service management began to erode. By the1960s and early 1970s, agency decisions were increasingly subject to challenge by recreational user groups and others.[2] Despite these controversies over national forest management, the Forest Service continued to enjoy an excellent reputation among politicians and scholars as a model of effectiveness in bureaucratic management.[3] This legacy makes it particularly intriguing to follow the course of administrative change in an agency so rich in tradition and in expertise.

The first part of this article explores the period from 1960 through the middle of the 1970s, during which time the Forest Service responded to a series of national directives to develop management policies for the "multiple use" and "sustained yield"[4] of forest lands and natural resources. This study explores the development of public activism surrounding national forest management and responses by the Forest Service, courts, and

1. *See* SAMUEL P. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT 1890-1920 (1959).

2. *See generally* SAMUEL T. DANA & SALLY K. FAIRFAX, FOREST AND RANGE POLICY 205 (2d ed, 1980) [hereinafter DANA & FAIRFAX].

3. JEANNE NIENABER CLARKE & DANIEL MCCOOL, STAKING OUT THE TERRAIN, 41-44 (1984).

4. *See, e.g.*, Multiple Use Sustained-Yield Act of 1960, 16 U.S.C. § 528 (1994). "Multiple use" is defined as including "outdoor recreation, range, timber, watershed, and wildlife and fish."

Congress. The Forest Service struggled to satisfy political demands to increase utilization of forest resources, while simultaneously struggling to adapt to changing social conditions and provide for additional recreational uses and users. This article traces the initial political and legal implications of these developments and the Forest Service's responses in the Sierra Nevada.

The second part of this article describes the effects of environmental legislation and judicial decisions that reshaped administrative government as they unfolded in the national forests in the Sierra Nevada.[5] The National Forest Management Act of 1976 (NFMA)[6] and the implementation of the statute's provisions required the agency to develop land and resource management plans for each national forest. NFMA planning was conceived as a method to provide for multiple use of the forests while ensuring resource sustainability and conservation of biological diversity. The most important characteristic of the course of national forest policy during this time, however, is not what the agency did or did not accomplish in terms of planning or by refining its management. Instead, the most significant aspect of the period is the influence of political activism and adversarial legalism[7] that surrounded forest planning, leading to substantive change to Forest Service plans elsewhere in other regions, and directly influencing the agency's response to these forces in the Sierra Nevada. The Forest Service was under pressure from various interests with different views regarding the future of the national forests. Moreover, the Forest Service leadership did not believe that NFMA required substantial shifts in the admixture of resource use and preservation in the national forests, nor was it inclined to accept the management objectives offered by environmental groups and their supporters. The early response to NFMA planning by environmental activists in the Sierra was not entirely successful in transforming national forest management, but these protests sent a signal that the Forest Service could not

5. The Lassen, Plumas, Tahoe, Eldorado, Stanislaus, Sierra, Inyo, and Sequoia National Forests and the Lake Tahoe Basin Management Unit are administered by the Forest Service as part of the Pacific Southwest region of the National Forest System. Additionally, parts of the Humboldt-Toiyabie National Forests are also in the Sierra region and are administered by the Intermountain Region of the National Forest System.

6. National Forest Management Act of 1976, Pub. L. No. 94-588, 90 Stat. 2949 (codified as amended at 16 U.S.C. §§ 472A, 476, 500, 513-516, 518,521, 528, 576B, 594-2, 1600, 1601, 1600-1602, 1605, 1606, 1608-1614 (1994)).

7. *See* Robert A. Kagan, *Adversarial Legalism And American Government*, 10 J. POL'Y ANALYSIS & MGMT. 369, 369-406 (1991).

continue to favor resource utilization and development over conservation without facing strong opposition. The protracted planning process failed to ease political and legal struggles over resource management. These disputes eventually forced the Forest Service to abandon its emphasis on commodities and to restructure natural resource management methods and priorities to better incorporate scientific information into national forest planning and management.[8]

The final part of this article describes a period during which the Forest Service continued to face serious attacks, including fundamental challenges to its competence, authority, and mission. This section chronicles the continuing struggle by the Forest Service and others to find new methods to respond to resource conservation issues. By the1990s, the Forest Service realized that it had made erroneous assumptions regarding legal provisions for the conservation of biological diversity and finally concluded that it could not ignore the likely effect of these requirements. In the Sierra Nevada, the Forest Service's treatment of controversies over resource conservation was influenced by situations similar to those that shaped national forest administration in other regions, including the Pacific Northwest.[9] Certain issues, such as the conservation of the habitat of the spotted owl, came to the fore in California later than in other regions, allowing administrators to benefit from the scientific and administrative experience gained in other venues. Forest Service officials struggled to respond constructively to changes in the interpretation of the agency's legal obligations. If the Forest Service had been slow to recognize the full extent of its legal responsibilities, it quickly began to change existing policies to comply with statutory and judicial requirements. In 1990, the Forest Service developed and embraced the concept of "ecosystem management" to meet the challenges of by environmental and ecological conservation. The Forest Service also embarked on a number of policy initiatives in California with the intention of avoiding the errors made by failing to respond effectively to public opposition and to administrative and legal appeals concerning its land and resource management plans for national forests in Washington, Oregon

8. Memorandum from F. Dale Robertson, Chief of the U.S. Forest Service on Ecosystem Management (July 19, 1992) (on file with the author) (hereinafter USFS Memo).

9. *See, e.g.*, STEVEN L. YAFFEE, THE WISDOM OF THE SPOTTED OWL: POLICY LESSONS FOR A NEW CENTURY (1994).

and northern coastal California. In this period, other administrative initiatives aimed at restructuring natural resource management priorities and methods. The Forest Service adopted an ecosystem approach to management issues, believing that this would allow the agency to comply with a host of legal directives requiring it to take into account increasingly complex ecological information. Gradually, the Forest Service and its critics recognized that the practice of ecosystem management required better knowledge of the landscapes, resources and ecological dynamics. This led to increased support for research on these elements of the national forests. In addition, communities and interest groups, frustrated by a lack of response from the Forest Service, went outside the NFMA planning process and offered their own innovations designed to improve planning and to speed the implementation of ecosystem management and conservation.

I.

NATIONAL FOREST POLICY IN THE POST-WAR ERA

Policies and planning specifically pertaining to national forest management are the product of a number of laws and administrative policies, including the National Forest Management Act of 1976 (NFMA)[10]; the Organic Act of 1897[11]; the Multiple Use Sustained-Yield Act of 1960 (MUSYA)[12]; the Wilderness Act of 1964[13]; the National Environmental Policy Act of 1969 (NEPA)[14]; and the Endangered Species Act of 1973 (ESA).[15] Reviewing the progress of national forest management in the Sierra Nevada is an important source of information regarding the impact of public policies on the ecosystems in the region. These policies guide a range of activities that continue to have significant effects on the national forests, adjacent lands, and ecosystems that reach beyond national forest boundaries. As a result of a high level of concern regarding the Sierra Nevada region, the public has closely scrutinized national forest policy and its operation. The policies guiding the conservation and management for these areas have significance not only for the national forests, but also influence environmental quality and policy questions in the

10. 16 U.S.C. §§ 1600-1614 (1994).
11. 16 U.S.C. §§ 473-82, 551 (1994).
12. 16 U.S.C. §§ 528-531 (1994).
13. 16 U.S.C. §§1131-1136 (1994).
14. 42 U.S.C. §§ 4321-4370(d) (1994).
15. 16 U.S.C. §§1531-1544 (1994).

region at large.[16] As a result, natural resource management in the national forests of the Sierra Nevada has become increasingly controversial over the past forty years.

Several specific concerns invite attention to the policy behind the management of these lands. First, a very large proportion of the land area of the Sierra Nevada, approximately 42 percent, is national forest land.[17] Most of the mid-elevation to upper-elevation land and watersheds that gather water for urban California are located in the national forests of the Sierra Nevada.[18] These national forests offer a wide range of natural resources. Traditionally, they have been used to furnish timber for lumber and fuel. The range of resources within these forests provide forage for grazing. Water, fish, wildlife, minerals, and opportunities for outdoor recreation exist in this region as well. As utilization of these resources has increased, conflict over values and forest uses has also increased.

Controversy over Forest Service resource policies certainly did not begin in the 1970s or with the enactment of NFMA. It is undeniable, however, that the land management planning process created by NFMA generated remarkable public interest and caused considerable controversy, especially at certain key decision points in the NFMA planning process over the past fifteen years.[19] Concern pertaining to land and resource planning and its results centered on several aspects of the statutory mandate. The law was intended to reorder national forest management by developing coordinated plans for multiple use that would promote effective and efficient conservation of forest resources. The scope of the law, combined with increased demands for timber and for other forest uses, signaled that NFMA had the potential to propose and implement management actions with widespread effects on the national forests, including those of the Sierra Nevada.

16. *See generally* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT , STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS, Vol.-2 Chs. 36-40 (1996). *See also id.* at Vol.1, Ch. 3.

17. *Id.* at Ch. 15.

18. *Id.* at Ch. 28.

19. *See, e.g.,* Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976); Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989); Seattle Audubon Society v. Evans, 952 F.2d 297 (9th Cir.) (1991); Seattle Audubon Society v. Moseley et al., 798 F. Supp. 1473 (W.D. Wash. May 28, 1992); Robertson v. Seattle Audubon Society, 503 U.S. 429 (1992).

Before exploring the design and operation of NFMA, several earlier statutes, Forest Service programs, and results of prior legal challenges to national forest management must briefly be reviewed. These laws and the policies they created were themselves products of conflict and compromise. They were mainly intended to allow multiple use, but particular commodity-based uses and wilderness preservation in certain areas received special attention. As new statutes added additional policy direction for the national forest, the methods and objectives for resource management have changed dramatically. These changes created the context in which comprehensive land and resource management planning that NFMA proposed.

A. *Administrative Context for the National Forests*

For nearly eighty years after the creation of the forest reserves, as the national forests were originally known,[20] land management policy was primarily governed by the Organic Act of 1897. This statute directed that the forest reserves were to be managed,

> ". . . to improve the forest within the boundaries, or for the purpose of securing favorable conditions for water flows, and to furnish a continuous supply of timber for the use and necessity of the citizens of the United States."[21]

For the next eighty years, the Organic Act remained the major statutory authority for the management of the national forests. The statute's language, however, offered little guidance on how to reconcile administration of the national forests with changing or conflicting public needs.

Gifford Pinchot, first Chief Forester of the Forest Service, recognized that management and utilization of the national forests required a policy that would allow the Forest Service discretion to accomplish its goals while responding to local conditions.[22] Perhaps Pinchot's greatest contribution to future agency policy is contained in a famous letter from then Secretary of Agriculture, James Wilson. The letter, addressed to Pinchot, but actually drafted by Pinchot himself, enunciated what became the guiding philosophy of the Forest Service:

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20. "Forest Reserves" became "National Forests" pursuant to the Agricultural Appropriations Act of Mar. 4, 1907, 34 Stat. 1269 (1907).

21. The Organic Act of 1897, 16 U.S.C. §§ 473-82, 551 (1994).

22. *See* U. S. DEP'T of AGRIC., NATIONAL FOREST SERVICE, THE USE BOOK 16 (1907); *See also*, Letter from Secretary of Agric. James Wilson to Gifford Pinchot, *quoted in* GIFFORD PINCHOT, BREAKING NEW GROUND 261-262 (1947).

> ". . . In the administration of the forest reserves, it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies. All the resources of the reserves are for *use*, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions as will only insure the permanence of these resources. . . .
>
> In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice; and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good for the greatest number in the long run."[23]

During most of the first half century of the Forest Service's existence, the lack of detailed criteria for resolving conflicts over national forest lands and resources was not a major concern. Where conflicts over uses or between users occurred, the agency often resolved changes by public land designations or by adjustments to the specific project.[24] After World War II, however, conflicts in the mission of the Forest Service became apparent, as did the agency's difficulties in responding to the demands of diverse users. A housing boom had created an unprecedented demand for timber.[25] Timber supplies had declined due to harvesting on private lands. The timber industry pressed for expanded timber sales in the national forests to satisfy the demand.[26] In response, the Forest Service increased opportunities for timber harvesting in the national forests. The Forest Service increased timber sales. As a result, conflicts between timber harvesting and other uses, particularly recreational opportunities, also increased. The increasing friction began to slowly tarnish the agency's reputation.

Congress recognized that the Forest Service and other land management agencies also faced increasing pressures in the postwar era to meet recreation needs. In 1958, Congress created the Outdoor Recreation Resources Review Commission (ORRRC) to review the situation and to make recommendations for meet-

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23. *Id.*

24. *Id.*

25. DAVID CLARY, TIMBER AND THE FOREST SERVICE 94-112 (1985); *See generally* DANA & FAIRFAX, *supra* note 2.

26. *See* CLARY, *supra* note 25, at 163.

ing projected recreation needs in 1976, and again in 2000.[27] The Forest Service had always encouraged recreational enjoyment in national forests as an adjunct to timber, range, and other uses, and it supported the work of the ORRRC. The ORRRC submitted recommendations to Congress for increased public funding for recreational development and for coordinated planning within agencies to provide better recreational opportunities.[28] The Forest Service stood to benefit from the new emphasis on recreation. Support for a range of other uses and activities, including the recreational goals of the ORRRC, would bring additional appropriations. Implementing the recommendations into practice would allow the agency to increase its staff and competence, permitting the agency to better support the recreational opportunities that forest users were now demanding.

B. *Legislative Changes*

1. The Multiple use-Sustained Yield Act of 1960

Throughout the post-war period, the Forest Service was confident in its ability to manage the forest for many different uses including wilderness preservation and recreation. As the number of visitors in national forests increased, the agency sought legislation to confirm its authority to manage forest resources and forest-related activities. The Forest Service enjoyed the support of Congress during this period although increasing conflicts between the Forest Service and the public were beginning to trouble agency leaders.[29] In order to buttress the Forest Service's standing, the agency wanted to be able to meet the public's demands for more recreation opportunities and wilderness preservation while continuing to support timber production and other commodity uses.[30] The Sierra Club opposed the legislation, arguing that the Forest Service's strong commitment to timber production would undercut its support for other forest resources.[31] Conservationists expressed concern that the Forest Service had become so focused on its role as a provider of timber that it

27. *See generally* U.S. OUTDOOR RECREATION RESOURCES REVIEW COMMISSION, OUTDOOR RECREATIONS FOR AMERICA (1962).

28. *Id.*

29. HERBERT KAUFMAN, THE FOREST RANGER: STUDY IN ADMINISTRATIVE BEHAVIOR (2d ed. 1968); CLARY, *supra* note 25, at 149-156, 175-183.

30. U. S. DEP'T OF AGRIC., U. S. FOREST SERVICE, REPORT OF THE CHIEF 19 (1960); DANA & FAIRFAX, *supra* note 2, at 204.

31. DANA & FAIRFAX, *supra* note 2, at 203-204.

would not make fair decisions involving recreation uses or wilderness preservation.[32] Conflicts in this period between the Forest Service and conservationists over the status of unroaded areas within the national forests, regarded by the conservationists as potential wilderness areas, also contributed to this opposition. The opposition was relatively minor, however, and could not counter the prestige of the Forest Service. The agency easily succeeded in obtaining legislative support for its agenda.

Congress enacted the Multiple Use-Sustained Yield Act (MUSYA) in 1960.[33] The law stated that the National Forests were to be managed for "the achievement and maintenance in perpetuity of a high-level annual output or regular annual output of the various renewable resources of the national forest without impairment of the productivity of the land."[34] The statute also recognized the place and importance of a variety of natural resource uses, including "outdoor recreation, range, timber, watershed, and wildlife and fish."[35] This legislation enhanced the agency's authority to develop a variety of forest resources and activities appropriate to the needs of various users.

Timber and other commodity interests remained powerful enough to compel continued attention from the Forest Service leadership. As a result, the agency remained primarily attuned to its most powerful constituencies in the regions it served. Professional foresters made up the bulk of agency management and its professional staff. The scientific and practical training as well as the conservation ethic of the forestry profession, however, ensured that Forest Service officials had motivations and goals that set them apart from the timber industry. Despite the opportunity for tension between forester and logger, working relationships between the Forest Service and the timber industry became well established. Despite occasional tensions, these relationships continued apace, and lent credence to conservationist claims that timber considerations dominated the agency's agenda.

Forest Service policy in this period was not without critics. Opposition to plans and projects prior to this era generally had been localized. When opposition to Forest Service projects did occur, it could often be countered by locating potentially conflicting uses in another forest area. Timber harvesting could take place in

32. *Id.*
33. 16 U.S.C. § 528-531(1994).
34. *See id.*, at § 531(b).
35. *See id.*, at § 528.

one area, while fishing, hiking and other recreation activities could be assigned to other areas. Interest groups were active on many sides of the issues. The diversity of opinions often tended to counteract each group's power, enabling the Forest Service to pursue its agenda while claiming to have made compromises intended to satisfy each interest group.[36] This allowed resource development activities to continue with the acquiescence of interested parties and interest groups.

At the same time, the Forest Service recognized that commodities were not the highest priority in every region, and began to provide for additional activities that would directly serve other segments of the public. The Forest Service staff had always included a variety of professional expertise as part of its effort to treat all forest resources with professional competence and rough equivalence. Even so, the preponderance of foresters in the Forest Service, and the agency's role in supplying timber to private industry, allowed for some doubt about the depth of the agency's commitment to multiple use. The multiple use label allowed the agency to avoid or defer many management controversies, but this approach could never fully satisfy important segments of the public, a fact that quickly became apparent.

Under MUSYA, the Forest Service experimented with planning to coordinate conflicting uses.[37] Each region prepared a regional multiple use planning guide to steer local forest planning. Each national forest developed "Forest Land Use Plans" to guide the integration of various land and resource uses.[38] Finally, to tailor management principles to the specific conditions, professional foresters prepared unit plans for watersheds or large

36. *See* PAUL CULHANE, PUBLIC LANDS POLITICS: INTEREST GROUP INFLUENCE ON THE FOREST SERVICE AND THE BUREAU OF LAND MANAGEMENT 388-94 (1981). Culhane argued that conflict with interest groups did not nullify the prerogatives of the Forest Service but rather various interest groups involved in public land policy issues resulted in a "multi-party capture" of land management agencies. This multiplicity of groups tended to counteract each other's power, enabling the Forest Service and the Bureau of Land Management to pursue a middle course. *See also*, PHILIP FOSS, THE POLITICS OF GRASS (1960).

37. Carl Wilson, *Land Management Planning Processes of the Forest Service*, 8 ENV'T L. 461 (1978); *See also* CHARLES F. WILKINSON AND H. MICHAEL ANDERSON, LAND AND RESOURCE PLANNING IN THE NATIONAL FORESTS 29 (1985) [hereinafter WILKINSON & ANDERSON].

38. U. S. DEP'T OF AGRIC., U. S. FOREST SERVICE, FOREST SERVICE MANUAL § 8213 (1973); PAUL HIRT, A CONSPIRACY OF OPTIMISM: MANAGEMENT OF THE NATIONAL FORESTS SINCE WORLD WAR TWO 222-223 (1994).

drainage areas.[39] Planning created a method to assess forest areas and enable a more rational allocation of land and resources. Forest Service planners therefore tended to treat land uses and natural resources generally, and did not employ rigorous scientific investigations of the areas under consideration.[40] Unit plans translated national programs to the regions. The regions in turn supervised the implementation of these policies on individual national forests. This style of planning demonstrated allegiance to the utilitarian origins and professional norms of the "scientific movement"[41] of conservation of the Progressive Era, that had become the guiding force in the training and professional development of American foresters early in the twentieth century.[42] Simultaneously, the planning program was a modern political exercise that ratified the Forest Service's determinations of the "greatest good for the greatest number."[43] This system permitted continued timber sales, while allowing the agency to claim that it had become the nation's premier provider of outdoor recreation opportunities.

Congressional appropriations for the Forest Service in the late 1950s and 1960s overwhelmingly supported the agency's timber program.[44] Accordingly, agency administration concentrated on building the timber program, and therefore often appeared to reflect a bias toward timber production. The Forest Service was enjoying the ongoing support of the Congress. Therefore, the agency had little reason to develop a management program more closely tied to a growing constituency of national forest visitors whose interests centered on recreation or to search out policies that served a broader conception of the public interest.[45] In fairness to the Forest Service, however, Congress made budget appropriations supporting timber sale programs because many powerful constituencies wanted to take advantage of these op-

39. U. S. FOREST SERVICE, ENVIRONMENTAL ANALYSIS & ALTERNATIVES FOR THE NORTHERN CALIFORNIA PLANNING AREA GUIDE 5 (1976). These areas generally ranged in size from fifty thousand acres to several hundred thousand acres. Interview with Doug Leisz, Deputy Chief, United States Forest Service (retired) (Sept. 1995).

40. CLARY, *supra* note 25, at 172-173.

41. HAYS, *supra* note 1, at 2.

42. DANA AND FAIRFAX, *supra* note 2, at 52-53; CLARY, *supra* note 25, at 6-17.

43. PINCHOT, *supra* note 22, at 261-262.

44. HIRT *supra* note 38, at 234, 236-9; CLARY, *supra* note 25, at 187.

45. *See* GRANT MCCONNELL, PRIVATE POWER AND AMERICAN DEMOCRACY (1966) (Arguing that multiple use gave discretion to the agency to follow its own policies with little regard to public opinion).

portunities. During this period, Congress believed the Forest Service timber management program was consistent with the purpose of furnishing "a continuous supply of timber for the use and necessity of the citizens of the United States."[46]

2. The Wilderness Act of 1964

From the early days of the Forest Service, the idea that large areas should be set aside for wilderness preservation had attracted some supporters. John Muir, and later Bob Marshall and Aldo Leopold, both of the Forest Service, as well as others, opposed the idea of resource utilization as the guiding principle for all forest lands.[47] As the administration of the national forests matured, conservationists became concerned about the future of undeveloped and unspoiled areas in the national forests. By the 1930s, the Forest Service had already begun to restrict the use in certain areas and designate them as "primitive" areas.[48] The Forest Service claimed this designation was sufficient to ensure that these lands would be managed as wilderness.[49] Wilderness advocates, however, believed that the agency did not sufficiently value wilderness areas.[50] They argued that if wilderness areas were only accorded a status similar to any other use of forest resources, the remaining unspoiled areas would not be able to withstand demands for access to timber and other commodities.[51] Especially in the post-war era, conservation groups wanted to ensure that existing "primitive area" designations would survive the timber industry's preference for increased timber harvest levels

46. Act of June 4, 1897, ch. 2, 30 Stat. 34, (codified as amended at 16 U.S.C. §§ 473-482, 551 (1982)).

47. HIRT *supra* note 38, at 35. *See generally* JOHN MUIR, THE MOUNTAINS OF CALIFORNIA, (1961). *See also* DANA & FAIRFAX, *supra* note 2, at 155-157.

48. *See* DANA & FAIRFAX, *supra* note 2, at 157-158. As early as 1929, at the instigation of foresters within the agency, areas in the national forests had already been removed from harvesting and other management activities. This practice originated with the "L-20" regulation in 1929, which allowed the Forest Service to protect certain "primitive areas." This authority was expanded and more precisely defined in 1939, with the "U" regulations. Over the objections of commodity users, additional land was removed at this time. Three different types of designations were established. Regulation U-1 defined "wilderness" as unroaded, undeveloped tracts of 100,000 acres or more. These areas were to be designated by the Secretary of Agriculture. The Chief Forester could set aside areas that had similar characteristics, but were smaller in size as "wild" areas. A third category allowed tracts of 100,000 acres or more to be designated by the Chief Forester as roadless areas to be managed for recreation "substantially in their natural condition."

49. *Id.* at 155-158.

50. *Id.*

51. 16 U.S.C. §§1131-36 (1994).

in national forest lands. They were not persuaded by the agency's assurances. In 1956, they began to seek protection for wilderness through legislation that made it impossible to administratively alter the status of these lands.[52] Agency efforts to deflect attention from the wilderness issue failed to divert wilderness supporters from their goal of securing legislative protection for wilderness designations.

In 1964, despite the opposition of the Forest Service, Congress passed the Wilderness Act.[53] Certain areas of the national forests, national parks, and other federal lands, including 2.1 million acres of land already protected by the Forest Service, were designated as "Wilderness" or "Pristine" areas. The statute established a "National Wilderness System,"[54] but did not change the system of multiple use on the balance of the national forest service land. The legislation allowed for the continuation of other commodity-related uses in wilderness areas, subject to presidential review. The wilderness designation, however, did not permit timber harvesting on these lands. The new law increased protection for a number of areas in the Sierra Nevada prized by recreation users for their scenic beauty and recreational value. These areas were located mainly in the alpine and subalpine zones. By and large, the supply of merchantable timber in these areas was fairly remote, and only a portion of it had commercial value. Under the legislation, certain other specified areas were to be studied and their status reviewed over the following decade. The agencies retained control over wilderness areas on lands under their administration, but the new designation limited agency discretion in determining the disposition of these lands. The Forest Service lost some of the prerogatives that it had exercised over these lands. The result was a blow to the Forest Service's prestige, implying that the agency could not be trusted to preserve this land on its own.[55] For the wilderness advocates, the enactment of legislation after eight years of lobbying efforts represented a double victory. First, many areas were afforded more permanent protection. Second, the establishment of the wilderness system legitimized the philosophy of preservation and con-

52. *See* Michael J. McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288 (1966).

53. 16 U.S.C. §§1131-36 (1994).

54. 16 U.S.C. §§1131-36 (1994).

55. DANA & FAIRFAX, *supra* note 2, at 227-229.

servation as a component of future management decision-making for the national forests.

3. The National Environmental Policy Act

Enactment of the National Environmental Policy Act (NEPA) of 1969 represented a major watershed in public policy. The impetus for the statute may be traced to the outpouring of public concern about the condition of the environment. NEPA sought to ensure that environmental factors would be considered during decision-making process for federal projects and programs. The statute's provisions did not require that environmentally questionable projects be abandoned, but instead sought to ensure that decision makers and the public would fully understand the environmental effects of proposed actions. One of the law's major elements, was the requirement that an Environmental Impact Statement (EIS) be prepared for "major federal actions significantly affecting the quality of the human environment". Full disclosure of the environmental impacts of a proposed action ensured that the public had an opportunity to review the federal government's plans and proposed projects prior to their approval. The EIS also included opportunities for individuals to comment on the proposed action. The lead agency then had an opportunity to respond to these comments and to revise the project before reaching a final decision.

The lack of substantive requirements for environmental protection in NEPA created little expectation that preparation of an EIS would lead to dramatic changes in federal projects generally, or in statutory programs such as the multiple use and sustained yield policy that applied to the national forests. Public disclosure of information through an EIS provided citizens with an opportunity to mount formidable challenges to agency decisions in the political process and courts. In this manner, the procedural aspects of NEPA were to have a profound impact on the decision-making processes of the Forest Service and indeed, all federal agencies and their relations with the public. As a result, NEPA exerted considerable influence on a wide range of Forest Service programs and land management actions.[56]

NEPA has been described as a "broad stop and think, disclose to the public" administrative law.[57] It directed decision-makers

56. *See* SERGE TAYLOR, MAKING BUREAUCRACIES THINK 202-222, (1984).

57. ZYGMUNT PLATER, ET. AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 612 (2d Ed., 1998).

to consider seriously the environmental implications of their decisions. The required elements of an Environmental Impact Statement (EIS) are defined by NEPA and administrative regulation.[58] Additionally, courts have held that preparation of the EIS entails that decision-makers take a "hard look" at the potential environmental implications of their decision.[59] Additional regulations have created (a) procedures to establish what major issues should be addressed (including "scoping"); (b) what the document must contain upon release, and (c) the timing and manner in which the document is to be reviewed, public comment is to be solicited, and the manner in which the agency is to respond.[60] An EIS is subject to full public review and comment, followed by a period for administrative review and response to those comments. During such administrative review, there is an opportunity to revise the plan prior to the final decision on the matters covered in the EIS.[61]

In the years following the enactment of NEPA, the Forest Service experienced considerable difficulty adjusting to the law's requirements. It required several years for the agency to develop the skills necessary to conduct a full analysis of environmental impacts and to prepare an adequate EIS. The agency's inability was due in part to uncertainty about the scope and content of an EIS, and in part to lack of the "knowledge base" and institutional capacity to prepare an EIS.[62] Despite the presence of an array of experts from other disciplines, the Forest Service did not immediately utilize professionals who possessed skills appropriate for the preparation of the EIS.[63] Seasoned agency managers were generally not aware of the full scope and intricacies of EIS requirements. Additionally, most of them were foresters and had never been trained to undertake a comprehensive consideration of environmental impacts.[64] The agency's analyses established that many specific projects, including timber harvests where clearcutting was employed, were unlikely to have a "significant

58. 40 C.F.R. §§ 1500-1508 (1999).

59. *See Kleppe*, 427 U.S. at 410 n.21; *Robertson*, 490 U.S. at 332.

60. Jackson v. New York State Urban Development Corp., 67 N.Y.2d 400, 437 (1986).

61. 42 U.S.C. § 4331 (1988).

62. TAYLOR, *supra* note 56.

63. *Id.*

64. *Id.* at 208

impact" on the environment.[65] As a result, the Forest Service believed with some justification that NEPA did not require it to prepare an EIS for many projects.[66] Accordingly, agency decisions to refrain from or delay the preparation of EISs were successfully challenged in court.[67]

An early example of the role of that NEPA played and its importance to the environmental community was illustrated in a celebrated controversy in the Sierra Nevada. The Walt Disney Company's proposed ski resort in Mineral King (a relatively undeveloped area, located in what was at the time a part of the Sequoia National Forest), was ultimately derailed by the insistence of environmentalists that the federal government comply with NEPA's procedures. Although the ski resort had been approved prior to the enactment of NEPA, the Forest Service was faced with a lawsuit challenging its decision to grant a permit to Disney to develop the area.[68] To satisfy opponents, the agency prepared an EIS for the proposed ski resort.[69] The Sierra Club then challenged the adequacy of the document, and sued to force, inter alia, consideration of the environmental effects on national park resources due to the expansion of the access road.[70] Even though the lawsuit was eventually dropped, the delays created by the lengthy administrative and legal process ultimately caused the developer to lose interest in the project.[71] The demise of the proposed ski resort meant that Mineral King would remain largely undeveloped. After several years, this area was transferred to Sequoia National Park. Although the ecological significance of this result was limited to preventing additional development in one mountain valley and its environs, it was perceived as an important victory for conservationists who had fought to preserve Mineral King. The result greatly encouraged conservationists in the struggle against what they regarded as the

65. Steven E. Daniels and Christine M. Kelly, *Deciding Between an EA and an EIS May Be a Question of Mitigation,* 89 J. OF FORESTRY 3, 29-36 (1991).

66. *Id.*

67. *See, e.g.,* Thompson v. Peterson, 753 F.2d 754 (9th Cir. 1985); Sierra Club v. Peterson, 717 F.2d 1409 (D.C. Cir. 1985). *See also Kleppe,* 427 U.S. at 390; Sierra Club v. Hodel 848 F.2d 1068 (1988). Sierra Club v. Morton, 405 U.S. 727 (1972); Sierra Club v. Hickel, 433 F.2d 24 (1970).

68. *See* Comment, *Mineral King: A Case Study In Forest Service Decision Making,* 2 ECOLOGY L. Q. 493 (1972); Commentary, *Mineral King Goes Downhill,* 5 ECOLOGY L. Q. 555 (1976).

69. *Morton,* 405 U.S. 727.

70. *Id.*

71. *See supra* note 68.

tendency of the Forest Service to too quickly abandon its own conservation precepts in favor of a general compromise.

After suffering losses in court, Forest Service managers recognized that the agency had more to learn regarding environmental impact analysis and EIS preparation. To remedy the problem, the agency recruited and cross-trained experts in disciplines not formerly present among Forest Service planners and managers. Greater interdisciplinary environmental expertise enabled it to handle sensitive projects and to prepare an EIS in a professional and more defensible manner.[72] Internal resistance to formal public participation also waned. Additionally, the Forest Service employed and refined the Environmental Assessment (EA), a preliminary report used to ascertain the probable environmental effects of a project.[73] This quick assessment allowed the agency to determine whether an EIS was required.[74] The position of environmental coordinator was also created and staffed at each national forest.[75] This individual was responsible for ensuring that agency followed NEPA procedures and that all plans and projects complied with the EIS requirements.

C. *National Forest Resources and Their Use: Competition and Controversy*

1. Timber Supply and the National Forests

In the face of both new demands on the national forests and growing conflicts between timber and other uses, the forest products industry particularly in California and the Pacific northwest became concerned about the Forest Service's timber sale policies.[76] As the demand for timber grew in the concluding years of World War II and in the post-war years, cutting had increased on private lands. The availability of mature timber to harvest on these lands declined. Harvested lands were replanted for future use, but the young trees would not mature for many years. Timber harvesting on private lands caused many companies to become dependent on the national forests for timber supplies by

72. TAYLOR, *supra* note 56.

73. Interview with R. Max Peterson, Chief, U.S. Forest Service, Univ. of California, Berkeley (February 3, 1987).

74. Daniels and Kelly, *supra* note 65, at 29-36.

75. R. Max Peterson, *supra* note 73.

76. DANA & FAIRFAX, *supra* note 2, at 199-202; Barney Dowdle and Steve Hanke, *Public Timber Policy and the Wood Products Industry*, *in* FORESTLANDS: PUBLIC AND PRIVATE 77, 85-88 (Robert T. Deacon & M. Bruce Johnson, eds., 1985) [hereinafter Dowdle & Hanke].

the mid-1970s. The forest products industry pressed for improved planning and increased timber sales in the national forests in order to accommodate market demands.[77]

The industry was perplexed by the uncertainties of the political process that controlled Congressional appropriations for the Forest Service. Congress was generally in accord with the agency's program, but from the industry's perspective, the process was very uncertain. Along with its dissatisfaction over low timber volumes offered for sale, the industry was also concerned about the variability in the levels of national forest timber available for purchase from year to year.[78] The length of time required to prepare large timber sales caused additional uncertainty. Predicting the availability of these sales was further complicated by the agency's dependence on annual appropriations necessary to permit sale preparations to continue over several years. Minor differences in the annual timber budget made it difficult to forecast when and where timber sales would be available. As a result, the amount of timber supplies available for harvest in any one year could not be reliably predicted, making it difficult for timber interests to plan capital investments to meet market demands.

The timber industry was frustrated by the lack of a national strategy to respond to the demand for timber. In the industry's view, greater stability of the timber supply was essential. Many foresters maintained that harvest levels for the national forests, including those in California, had been set substantially below what the national forests could produce on a sustained yield level.[79] Foresters argued that an increase in harvesting would therefore not jeopardize the long term sustained yield of timber from the national forests.[80] Advocates for increasing the certainty of timber explored several ideas. Some analysts proposed to reexamine national forest land allocations, while others focused on broader strategic planning. One strategy for land alloca-

77. MARION CLAWSON, THE FEDERAL LANDS REVISITED 75, (1983); *See* Dowdle & Hanke *supra* note 76, at 85-88.

78. *Id.*

79. Interview with John Zivnuska, Professor and Dean Emeritus, School of Forestry, Univ. of California, Berkeley, in Berkeley, Cal. (Mar. 9, 1993); Mark Rey, Executive Director, Address at the American Forest Resource Alliance, Berkeley, California (Mar. 14, 1991); Interview with Larry Riegert, Forester, Bohemia Inc in Grass Valley, Cal. (April 4, 1986); CLARY *supra* note 25, at 165 (quoting George Craig, "Everyone's Future Is Tied To Forestry," speech to Society of American Foresters Chapter (May 10, 1957) and George Craig, "Californians Need the Allowable Cut," speech to Sierra Cascade Logging Conference (Feb. 14, 1958).

80. *Id.*

tion, which came to be known as "dominant use," called for establishment of areas that were primarily intended for a particular use (such as timber, grazing, and mining). Recreational or other uses would take place in different areas. The proposal was first considered seriously in the late 1960s by the Public Land Law Review Commission (PLLRC), which undertook a comprehensive review of the management of public lands.[81] The Commission suggested that areas on public land, including those primarily suited for timber production, should be established "to manage for the dominant use."[82] The President's Advisory Panel on Timber and the Environment (PAPTE) again considered the idea in 1973.[83] The proposals represented an earnest attempt to improve the management of public lands and to reduce conflicts between users. However, the emphasis on commodity production was out of step with burgeoning environmentalist sympathies of the era.[84] As a result, the proposal was never adopted. Timber supply remained a central, if somewhat unpredictable aspect of national forest management.[85] The timber industry's plea for stability and long-term predictability remained unanswered, but its need for supplies was largely met from year to year.

During the 1970s and 1980s, the Forest Service's Pacific Southwest Region in California harvested about 69% of the timber growth from the national forests land available for harvest. In the Sierra Nevada, timber harvesting was accomplished mostly by single tree selection, where individual mature trees are designated for harvest and cut down.[86] This method differed from the Pacific Northwest where clearcutting — associated with impacts such as erosion and loss of forest habitat — was rapidly becoming the preferred harvest method. Clearcutting in the Sierra Nevada was confined to a relatively small proportion of the timber harvested on the national forests. As the use of clearcutting increased in various parts of the nation, the effects became more

81. UNITED STATES PUBLIC LAND LAW REVIEW COMMISSION, ONE THIRD OF THE NATION'S LAND 48-52 (1970).

82. *Id.*

83. PRESIDENT'S ADVISORY PANEL ON TIMBER AND THE ENVIRONMENT, REPORT OF PRESIDENT'S ADVISORY PANEL ON TIMBER AND THE ENVIRONMENT 15, 77-89 (1973).

84. Fifteen years later, the dominant use strategy still appeared to possess at least a degree of salience. For a reconsideration of dominant use, along with an appraisal of the benefits for conservation and recreation. *See* Steven E. Daniels *Rethinking Dominant Use Management in the Forest Planning Era,* 17 ENVT'L L. 483 (1987).

85. DANA AND FAIRFAX, *supra* note 2, at p. 235.

86. *Supra* note 39.

visible. Foresters were more concerned with the gradual decline in the health and vigor of trees that remained after repeated selection logging.[87] Conservationists were aware of these problems, but they preferred selection harvesting over clearcutting because it avoided the scarring and erosion associated with many clearcuts.[88]

2. The Monongahela Litigation

As both timber harvesting and the number of forest visitors in the national forests increased, the effects of clearcutting and other silvicultural prescriptions became evident to greater numbers of people. Expressions of public concern similarly increased. Forest Service management responded to public complaints by reassuring the public of the efficacy of clearcutting and minimizing the damage caused by the method. Economic efficiency appeared to drive the policy. The Forest Service, however, attempted to justify clearcutting as part of a properly conducted silvicultural system that would revive forest growth and productivity.[89] The agency chose to ignore the continuing concern of many environmentalists and others who opposed the practice. This strategy eventually proved to be a significant miscalculation. Precisely because conservationists and outdoor recreation enthusiasts in other regions found themselves without recourse in the Forest Service, they sought other means to influence agency decisions. A coalition of hunters, environmentalists and others, unhappy with plans to clearcut an area of the Monongahela National Forest, brought suit to enjoin further clearcutting. The Forest Service was no longer able to ignore or to parry the thrusts of its opponents. However sincere the agency's arguments, they proved to be of little significance in the face of a legal challenge.

87. Among the problems identified with selection logging is "highgrading." This refers to the effect of repeated selection and harvest of the best trees. The result is that the largest most vigorous trees of a stand are removed and were not allowed to reproduce, diminishing the genetic quality and commercial value of the trees over time. *See* RALPH NYLAND, SILVICULTURE: CONCEPTS AND APPLICATIONS 502-503 (1996).

88. CLARY, *supra* note 25, at 180-185.

89. *Id.*

The legal challenge centered on the interpretation of the Organic Act of 1897.[90] The Forest Service argued that this statute authorized clearcutting and a number of other timber harvest practices. In *Izaak Walton League v. Butz* the court held to the contrary, stating that the Organic Act prohibited timber harvesting unless the trees were "dead, matured, or large growth" and individually "designated" and "marked" for harvest.[91] The holding stunned the Forest Service and severely impaired its authority to manage timber. The Forest Service's methods often contravened this restriction; without them, the agency's timber program was in jeopardy. This was particularly true where the agency utilized clearcutting to move in the direction of even-aged silvicultural systems, where all trees in a stand would be harvested and replaced with planted seedlings.[92] This result was also unacceptable to the timber industry, since many timber companies located in California and other western states had become dependent on the national forests for all or part of their available supply. The Forest Service appealed the holding, but the Fourth Circuit Court of Appeals upheld the District Court's decision.[93] The national forest timber program, with its increasing reliance on clearcutting and even-aged management, was in jeopardy.

In the wake of the Monongahela decision, environmentalists brought similar cases in district courts in South Carolina, Texas, Tennessee, Georgia, Alaska, and Oregon.[94] The Forest Service faced the prospect of defeat in all of these cases and the loss of key management methods it had come to rely upon. As the legal challenge unfolded, the agency discovered that it could not successfully defend its position in court.

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90. Act of June 4, 1897, 16 U.S.C. §§ 473-482, 551 (1982). The case also involved the Multiple-Use Sustained Yield Act of 1960, but this statute was not interpreted to amend the timber harvest provisions of the 1897 Organic Act.

91. West Virginia Div. of the Izaak Walton League of Am., Inc. v. Butz, 367 F. Supp. 422 (N.D. W. Va. Nov. 6, 1973). Although the ruling did not prohibit clearcutting per se, it meant that clearcutting could not be used to harvest immature trees along with mature trees. Since the Forest Service was employing silvicultural management methods that were designed to do this or did so by implication, the agency's system of timber management was effectively halted by the decision. This result was unexpected and stunned both the Forest Service and the timber industry. It was clearly unacceptable to the timber industry, which depended on the national forests as part of their available supply.

92. *Supra* note 39.

93. West Virginia Div. of the Izaak Walton League of Am. Inc. v. Butz, 522 F.2d 945, (4th Cir. 1975).

94. DANA & FAIRFAX, *supra* note 2, at 317.

At the time, many supporters of the Forest Service's harvesting practices believed that the issue upon which the case turned was whether the matter was committed by law to agency discretion.[95] Assuming that it was, they argued that the agency was entitled under law to harvest timber by a method of its own choosing. The agency had argued unsuccessfully that the Organic Act of 1897 entitled it to make these kinds of decisions. For many years, this position had been unchallenged. The Forest Service's defeat in the Monongahela case resulted from judicial interpretation of existing law. The holding marked a turning point in the agency's control over timber harvest methods in the national forests. The result also marked the end to a period in which Congress afforded considerable deference to the Forest Service and its conception of multiple use stewardship in the national forests. The future of the national forests and the role of the Forest Service was about to become a matter for both public discussion and legislative debate. This time, the discussion was to occur in a highly charged and changing political landscape, in which the environmental movement was already demonstrating an ability to affect federal public land and natural resource policy.

3. The Forest and Rangeland Renewable Resources Planning Act of 1974

As the legal challenge to Forest Service authority worked its way through the court system, there was a contemporaneous legislative proposal to create a more reliable framework for economic and physical planning for forest resources and uses and to provide a more predictable management environment for the national forests. This effort culminated in the enactment of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA).[96] The RPA represented an attempt to institute a system of strategic planning for public and private renewable natural resources of the United States.[97]

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95. Sally Fairfax, *The Monongahela Controversy and the Political Process,* J. OF FORESTRY 485 (1977).

96. Forest and Rangeland Renewable Resources Planning Act of 1974, Pub. L. No. 93-378, 88 Stat. 476, *amended by* National Forest Management Act of 1976, Pub. L. No. 94-588, 90 Stat. 2949 (codified as amended at 16 U.S.C. §§ 1600-1614 (1982)).

97. DANA AND FAIRFAX, *supra* note 2, at 324-326. RPA directed the Forest Service to determine the aggregate national demand for all forest products and then to propose a plan to help the nation meet these needs. Every ten years, the agency was to inventory forest resources and public needs and to produce an "assessment of the state of public and private forest resources in the United States." A "program", building on information obtained from the national census along with other eco-

RPA data and analysis was forwarded to the legislative and executive branches of government, but without great effect. During the appropriations process, Congress initially focused on the RPA Assessment and Program, but after reviewing these projections, congressional attention wandered away from RPA figures.[98] As a result, the impact and significance of the RPA has been decidedly less than expected.[99] Nevertheless, RPA's strategic approach offered several valuable integrative mechanisms. The RPA related to three major Forest Service functions—administration of the national forest system, forestry related research, and agency responsibilities to provide technical and programmatic assistance to state and private forestry programs. Although these tools were never fully exploited, a strategic planning approach might have helped to realize shared goals for the conservation and management of public and private natural resources at national and regional levels. RPA provided a broad strategic planning authority, and retains potential relevance to emerging regional environmental planning and management initiatives.[100] This is particularly true in regions such as the Sierra Nevada, where significant strategic planning and ecological issues of concern to both the state and federal government extend across the national forest boundaries.

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nomic projections, estimated future demands on forest resources. The Program, prepared every five years, outlined the levels of commodities and other goods that can be can be supplied by the nation's forests and allocated a share of national goals to the national forest system. RPA contained no explicit authority to implement the results of the Program. The Program proposed budgets for the Forest Service for the next five years. The budgets reinforced the Program by delineating expenditures to reach the goals set out in the document. The information was intended to guide appropriation requests, and deliberately left decision making to Congress.

The Forest Service devoted considerable agency resources to preparing the RPA documents. This resulted in voluminous reports containing national RPA targets established for various categories of forest uses and resources. Regional "disaggregations" of the targets indicated in fairly precise quantities the expected contribution of individual Forest Service regions to meet the national goals. The program results – the RPA "Assessment" and the "Program"- were presented to the President and to Congress.

98. *See* V. ALARIC SAMPLE, THE IMPACT OF THE FEDERAL BUDGET PROCESS ON NATIONAL FOREST PLANNING 117, 128-137 (1990)(indicating that the politics of the budgetary process regarding Forest Service Budgets have long diverted it from any great reliance on RPA projections and budgets).

99. Interview with Dennis Teeguarden, Former Member, Committee of Scientists "1" (Feb. 1, 2000).

100. *Recreation's Growing Impact,* S.F. CHRON., Sept. 19, 1996, at D8.

4. Escalating Controversy Over Aerial Spraying of Herbicides

Herbicides have been widely utilized to eradicate the shrubs and other plants that sprouted in the clearings created by timber harvesting and by fire and other forms of landscape disturbance. The growth of brush of this type generally inhibits reforestation because the shrubs initially grow faster than the newly planted tree seedlings. Eliminating brush, or reducing the rate at which it spreads, aids reforestation by reducing the competition that newly planted trees and seedlings face.[101] Foresters also considered herbicide use to be an efficient method of reducing the severity of forest fires. In the western United States and in the Sierra Nevada, forest debris, shrubs, and other vegetation provide a means for ground fires to spread into tree crowns and forest canopies.[102] By controlling the brush, herbicides can help to limit the accumulation of fuels. This reduces the ease with which a fire might spread across the landscape, and reduces the threat of a ground fire destroying or severely damaging forest stands. Aerial spraying was used because it was considered to be far less costly than the hand application of herbicides.

In the Sierra Nevada, local opponents of aerial spraying had repeatedly expressed concerns about the effects on human and environmental health from direct or indirect exposure to herbicides.[103] Despite active public campaigns against the use of aerial spraying of herbicides in the Sierra Nevada, the Pacific Northwest, and other regions, the Forest Service and the Bureau of Land Management (BLM) sought to expand the practice. Activists challenged the agency's program in the courts, suing the Forest Service in Oregon. The agency's opponents claimed that the EIS prepared by the Forest Service contained an inadequate discussion of the environmental effects of aerial spraying of herbicides, specifically with regard to the effects on human health. In *Citizens Against Toxic Sprays, Inc. v. Bergland (1977)*, the court found in favor in the agency's opponents, declaring that the EIS was inadequate. The court issued a permanent injunction against

101. *See* U.S. DEP'T OF AGRIC., U.S. FOREST SERVICE, FINAL ENVIRONMENTAL IMPACT STATEMENT: VEGETATION MANAGEMENT FOR REFORESTATION, PAC. S.W. REG., (Vol. II), 1-4 to 1-5 (1988) [hereinafter FINAL EIS VEGETATION].

102. JARED VERNER, ET. AL., THE CALIFORNIA SPOTTED OWL: A TECHNICAL ASSESSMENT OF ITS CURRENT STATUS (U.S. Dep't Agric. U.S. Forest Service, July 15 1992) (hereinafter VERNER).

103. Aerial spraying of herbicides leads to the potential for herbicides to enter the hydrologic cycle, contaminating local water supplies.

the aerial application of herbicides in the Siuslaw National Forest unless and until the Forest Service furnished far more extensive documentation of the effects of the spraying on human and environmental health.

Efforts of the Forest Service to meet requirements for more stringent documentation were only moderately successful. After extensive revision, the Forest Service again released the Oregon EIS.[104] The new document itself faced a legal challenge. At trial, the court held that, under NEPA, where there was scientific uncertainty regarding the safety of specific herbicides, the agency was obligated to prepare a "worst-case" analysis of the risks to human health.[105] In 1981, the Forest Service initiated work on a new EIS for vegetation management. Among other activities, the EIS was designed to cover a program of aerial herbicide spraying that was already in place in California. In 1974, the Forest Service had prepared an EIS to consider the impact of vegetation management.[106] Since that time, a body of emerging scientific evidence raised significant questions about the risk to human health caused by exposure to herbicides. The Forest Service initiated work on a second document to discuss concerns relating to the implication of vegetation management practices on the forest environment, including pesticides newly available for use in the region. The report was intended to respond to heightened concern about the impact of herbicide application on human health and the forest environment.[107]

As the controversy unfolded, environmental activists learned a great deal about the Forest Service. Agency staff and leaders met with the public to discuss concerns about the effects of herbicides. Forest Service officials asserted that there was no evidence to indicate that exposure to herbicides at the concentrations likely to occur as a result of aerial spraying caused damage to human health. The Forest Service's arguments failed to convince critical segments of the public that herbicide spraying did not pose an unacceptable risk. To these critics, the lack of available evidence did not indicate that aerial spraying was a safe or desirable activity. Even if the studies cited by the Forest Service were

104. Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F 2d 1475 (9th Cir. 1983), *cert. denied,* 469 U.S. 1028 (1984).

105. *Id.*

106. FINAL EIS VEGETATION, *supra* note 101, at 1-2.

107. Interview with John Fiske, Regional Reforestation and Timber Stand Improvement Forester, Pacific Southwest Region, U. S. Forest Service (July 7, 1999)

true, it simply meant that the matter required further study before one could make a reasonable conclusion.

Forest Service officials were somewhat reluctant to further antagonize public opinion. However, the agency's statutory and management objectives required reforestation of national forest land denuded by logging, fire or other kinds of disturbance. These objectives drove the agency to seek economically efficient methods for reforestation. In 1984, the government appealed the decision requiring the EIS to include a "worst-case" analysis. The Supreme Court rejected the petition for certiorari.[108] The Chief of the Forest Service imposed a moratorium on certain herbicide uses, effectively suspending much of the aerial spraying program in the national forests until the Forest Service could meet the legal requirements imposed by NEPA.[109]

The decision in Oregon in *Southern Oregon Citizens* raised issues nearly identical to those emerging in the Sierra and elsewhere in California. On the heels of the Chief's moratorium, other measures followed. The Regional Forester, the Forest Service official responsible for the Pacific Southwest Region issued additional direction. This order suspended all herbicide use in national forests in California, except for some research projects, where the investigator was able to demonstrate that the experiment would be adversely affected by the suspension.[110]

Completing the EIS for vegetation management in the Pacific Southwest Region ultimately required a far more thorough review of the scientific evidence pertaining to health effects than the one initially undertaken by the agency. The EIS for national forest vegetation management in California was eventually completed in 1988.[111] The ensuing administrative decision in 1989 allowed the Forest Service to utilize a full range of herbicide measures, including aerial application.[112] The EIS demonstrated the agency's extensive consideration of the issues connected to herbicide use. Even with elaborate documentation, however, public opposition continued. In 1991,the Forest Service lifted the national moratorium, and the region moved toward the reinstatement of aerial application of herbicides. The agency's decision to

108. Southern Oregon Citizens, 720 F.2d 1475, *cert. denied,* 469 U.S. 1028 (1984).

109. FINAL EIS VEGETATION, *supra* note 101, at 1-4 to 1-5.

110. U. S. DEP'T OF AGRIC., U. S. FOREST SERVICE, FINAL ENVIRONMENTAL IMPACT STATEMENT: VEGETATION MANAGEMENT FOR REFORESTATION, RECORD OF DECISION, PAC.S.W. REG. (vol. II) 1-2 (1989).

111. FINAL EIS VEGETATION, *supra* note 101, at Volume I-IV.

112. *Id.*

reintroduce herbicide use was immediately appealed on several grounds but eventual resolution of the appeals did not substantively affect the decision of the Forest Service or its ability to use herbicides as a tool for vegetation management. In a series of projects that continued over the latter part of the decade, the Forest Service applied several herbicides, taking steps designed to reduce human exposure to herbicides.[113] After additional project level planning and further challenges, the region resumed aerial application in 1996.[114] The herbicide hexazinone was applied from the air in the form of pellets. This allowed application of herbicide to be more closely targeted to specific areas than was generally possible with spraying. Application of herbicides by this method was intended to reduce the likelihood that herbicides would enter ground and surface water. Nevertheless, the controversy over herbicide use continued, with opponents remaining vigilant over this aspect of forest management. Various environmental groups continued to challenge both plans arguing that the projects did not comply with the terms of the 1989, nor subsequent, decisions.[115] The Forest Service has continued to keep a watchful eye over its herbicide use, as have its opponents.[116]

Providing additional documentation was an important ingredient in addressing scientific and public concerns, but it never disposed of the controversy over herbicide use. Activists and others again confronted an agency perspective that regards forest resources and landscapes as subject to manipulation to produce timber and other commodities. The methods for manipulation encompassed a variety of measures that foresters had concluded were technically appropriate to accomplish specific tasks. The attitude of the Forest Service led it to appear as unwilling and inca-

113. *Supra* note 107.

114. U. S. Dep't of Agric., U.S. Forest Service, Pac. S.W. Reg., *Forest Service Suspends Aerial Use of Hexazinone Pending Review* (visited July 17, 1999) <http:/// www.r5.fs.fed.us/forestmanagement.html/hexaz.0699.html>.

115. Stipulation for Compromise Settlement and Dismissal at 8, California Coalition Against Pesticides et al v. U. S. Dep't of Agric., CIV-S-95-0336-DFL-JFM, (E. D. Cal. July 20, 1995).

116. In June 1999, the Forest Service found that a "contractor had inadvertently applied hexazinone directly into Rose Creek and some tributaries." In order to review its procedures and insure that this would not occur again, the region instituted a temporary moratorium on aerial application of this herbicide. *See* U. S. Dep't of Agric., U.S. Forest Service, Pac. S.W. Reg., *Forest Service Puts Severe Limitations on Aerial Use of Hexazinone* (visited March 1, 2000) <http://www.r5.fs.fed.us/ forestmanagement/html/limit_hexaz_1299.html>.

pable to respond fully to the concerns expressed by the activists. Equally, the agency seemed unable to truly internalize and respond to important information regarding public values until very late in the process.

5. Roadless Areas and Wilderness, Revisited

Under the Wilderness Act of 1964, the Forest Service was required to study certain areas to evaluate their potential for designation as wilderness or for multiple use. The agency undertook this study, known as the Roadless Area Review and Evaluation (RARE) in 1967.[117] RARE attracted a great deal of scrutiny from environmental groups since it concerned the potential disposition and preservation of highly desirable areas within the national forests. Conservation groups insisted that, as part of its review, the agency pay more attention to recreation and preservation opportunities on the remaining unharvested forest land as well. Once a review of existing primitive areas had been completed, the agency examined the larger remaining roadless areas within the national forests.[118] When completed in 1972, the review indicated that approximately twelve of fifty-six million acres studied across the country had wilderness potential. Environmental groups remained unsatisfied, arguing that the Forest Service ought to have recommended more areas and greater acreage for preservation as wilderness.

Timber interests, on the other hand, were concerned that this initiative would result in the removal of more productive timber lands from the commercial timber base of the national forests.[119] The timber industry recognized that the national forests supported recreation wilderness and other non-consumptive uses. Its position was simple: enough land was already preserved as wilderness. The remaining timber should be managed for harvest as a renewable resource. Industry wanted to prevent more timber from being removed from the national forest's available timber base in order to ensure that as much timber as possible would remain available for commercial operations.[120]

117. *See* DANA and FAIRFAX, *supra* note 2, at 330.

118. "Primitive" areas had originally been set aside under the "U" regulations established by the Department of Agriculture, and were not subject to timber harvesting or other management. *See* DANA FAIRFAX, *supra* note 2, at 157-158.

119. *See* Rey, *supra* note 79; Riegert, *supra* note 79.

120. *Id.*

The Sierra Club sued to enjoin the agency from adopting the results of the RARE study, contending that it was not accompanied by an adequate EIS.[121] An out-of-court settlement restricted timber harvest in all roadless areas pending the completion of the EIS.[122] RARE and the accompanying EIS were released in 1973, but the report did not lead to legislative action. The Forest Service subsequently abandoned the recommendations, and embarked on a new study in 1977. This second iteration, known as "RARE II", was completed in 1979. RARE II recommended 65.7 million acres as potential wilderness, although many areas for which environmentalists sought protection were not included.[123] Subsequently, the adequacy of the RARE II EIS was also challenged, this time by the State of California, as well as by the Sierra Club and other environmental groups.[124]

Congress then took up the question of the disposition of the remaining roadless areas. Increased public attention regarding the national forests resulted in separate consideration of the proposed designations in each state. Congress approached the question of wilderness additions in each state as a political issue. Rather than relying on information supplied by the agency, Congress weighed the agency's wilderness recommendations against the views of various interest groups. Generally, Congress deferred to the view of each state's congressional delegation with respect to choices about the selection and inclusion of individual areas, establishing the boundaries, and total acreage of these areas. A series of wilderness bills proposed designations for additional acreage located in the national forests, in the national parks and in other public land. In 1979, Representative Philip Burton introduced the first California wilderness bill.[125] In 1984, after five years of debate, a bill was enacted. In a pattern repeated in other western states, this legislation also returned other national forest lands to multiple use and reserved remaining areas for further evaluation as to their suitability as wilderness.[126]

121. Sierra Club v. Butz, 349 F. Supp. 934 (N. D. Cal. 1972).

122. *Id.*

123. U. S. FOREST SERVICE, FINAL ENVIRONMENTAL STATEMENT: ROADLESS AREA REVIEW AND EVALUATION: RARE II (1979).

124. State of California v. Bergland, 483 F. Supp. 465 (E.D. Cal. 1980), *aff'd in part, rev'd in part by* California v. Block, 690 F.2d 753 (9th Cir. 1982).

125. *See* WILLIAM D. DORON, LEGISLATING FOR THE WILDERNESS: RARE II AND THE CALIFORNIA NATIONAL FORESTS (1986).

126. *Id.*

The environmental community had been relatively unsuccessful during the administrative process in persuading the Forest Service to accept their views regarding recommendations for wilderness designations. Undeterred, they took their campaign to Congress. When Congress reviewed the issue and made decisions on lands to include in the legislation, Forest Service views were considered alongside environmentalist proposals, and this time the environmental community had greater success. However, during the legislative process, environmentalists made substantial compromises to secure passage of these bills, resulting in designation of less acreage than the environmentalists had originally sought. Nevertheless, the wilderness legislation of 1984 represented a significant victory for the environmentalists' cause, limiting commodity uses in key areas of the national forests.[127] In the Sierra Nevada, an additional 1.8 million acres of land in the national forest were reserved by the 1984 legislation, mainly at high elevations, but also including some of the national forest timber base. The new wilderness areas, joined the areas reserved by the earlier Wilderness Act of 1964. Together with Yosemite, Sequoia, and Kings Canyon National Parks, the wilderness areas comprised the largest area of contiguous or nearly contiguous forest land in the Sierra Nevada that had not been substantially altered by human intervention. On the heels of their success, environmentalists were pleased with their victories, and remained determined to add to these areas by securing protection for the remaining roadless areas in the national forests of the Sierra Nevada.

II.

THE NATIONAL FOREST MANAGEMENT ACT OF 1976

A. *Background to the Legislation*

After the Monongahela decision forced the Forest Service to modify its timber harvest practices to comply with the Organic Act, the agency quickly recognized that it lacked the statutory mandate to conduct a timber program on the scale that it had been doing previously. The agency believed that clearcutting and related practices promoting even-aged management of timber stands were essential to the future health and productivity of the

127. As before, grazing, mining (where already established), water resource development (as permitted by Executive Order), recreation and other interventions such as the planting of fish, were allowed to continue.

national forests and did not intend to manage the forest without them. Congress addressed the future of clearcutting in national forests in the course of crafting legislation that entirely restructured national forest land and resource management planning.[128] Congress considered several bills designed to counter the effects of the legal prohibition against the Forest Service's preferred methods for selling and harvesting timber. The agency's supporters in Congress, including Senator Hubert Humphrey of Minnesota, sought to restore Forest Service management authority and also to reinvigorate the idea of multiple use by using land and resource planning as the guiding principle for resolving natural resource management conflicts.

Legislative debates reflected two different visions of the national forests and of forest management itself. S. 2926, introduced by Senator W. Jennings Randolph of West Virginia, would have allowed timber harvesting in the national forests only with stringent prescriptions.[129] A competing bill, S. 3091, sponsored by Senator Hubert Humphrey, sought to restore discretionary authority to the Forest Service. It directed the agency to develop plans that would respond to the resource conditions encountered in each national forest, and allowed a broad range of practices for management within certain limitations designed to protect the environment.[130] At the same time, it provided assurances to the public that conservation objectives were to be treated seriously. After considerable debate, S. 3091, modified by several amendments, was adopted as the National Forest Management Act (NFMA) of 1976.[131]

NFMA sought to increase Forest Service responsiveness to environmental values, but also required that the agency use economic analysis as part of its decision-making criteria. The statute that emerged was an effort at compromise, calling for the implementation of natural resource planning that would attempt to reconcile public demands relating to conservation with the need

128. *Supra* note 10.

129. *See* U.S. DEP'T OF AGRIC., U.S. FOREST SERVICE, THE NATIONAL FOREST MANAGEMENT ACT OF 1976, CURRENT INFORMATION REPORT No. 16, p.17 (Dec. 1976).

130. *Supra* note 10.

131. The National Forest Management Act ("NFMA") allowed the agency to use clearcutting and even-aged management, but made their use subject to several restrictions intended to protect the forest landscape. NFMA authorized the use clearcutting in stands that included "immature" trees in national forests, but permitted clearcutting only after completion of comprehensive land and resource planning demonstrated the efficacy of applying the technique to particular forest stands.

for timber production and other commodity interests. During the legislative debate, Senator Humphrey rallied support for the statute by asserting that it would "get the practice of forestry out of the courts and back to the forests."[132]

Under NFMA, the "multiple use and sustained yield" of forest resources remained the focus of national forest management.[133] At the same time, NFMA implicitly acknowledged that prior multiple use management had not sufficiently accomplished this objective. The newly constructed procedures in national forest planning were intended to respond to changing public priorities without sacrificing the virtues of the established management system. The National Forest Management Act implicitly promoted planning as a means to better ensure a stable management environment. Along with other changes in the legal environment, the new law emphasized the procedural aspects of planning.[134] The emphasis on planning was intended to provide a record that would establish a basis to resolve continuing disputes over national forest management. The approach also pushed the agency to develop new forms of professional competence and interdisciplinary expertise to address environmental issues and to assist in the resolution of the controversies surrounding national forest management.[135] NFMA's provisions contained little direction for management decision-making, instead emphasizing planning as a means to achieve balance in forest conservation and land management. The clear implication was that controversies over national forest management that Congress could not resolve would be left to the agency to mediate. Land management planning anticipated these conflicts, but did not provide a method to resolve them.

The premise of the planning process was that agency decisions would respond to natural conditions in the forest and to demands on the natural resources to produce fair and balanced plans. The plans were to be circulated for public comment to permit the agency to respond to criticism and to modify its decisions. Planning contemplated a range of forest management activities and land uses that were substantially the same as those prior to the Monongahela decision.[136] The statute allowed clearcutting and

132. 122 CONG. REC. 33,835 (1976) (remarks by Senator Hubert H. Humphrey).
133. 16 U.S.C. § 1604 (e)(1) (1994).
134. 16 U.S.C. § 1604 (1994).
135. 16 U.S.C. § 1604 (f)(3) (1994).
136. 16 U.S.C. § 1604 (e)(1) (1994).

other aspects of even aged management systems, if they could be shown to be the "optimum" silvicultural method.[137] In this respect, the statute did not appear to represent a radical departure from prior management of the national forests. NFMA, however, did incorporate modest measures designed to promote conservation and sustained yield of timber. These included provisions to ensure that timber harvests in a given area would be sustainable from decade to decade.[138] NFMA required that plans provide for biological diversity.[139] NFMA also established procedures requiring the coordination of forest planning, environmental assessment, and public comment on management proposals prior to the initiation of management actions.

Several aspects of NFMA were designed to fundamentally restructure public land management to produce more balanced plans and to reduce the likelihood of legal battles.[140] Two ele-

137. 16 U.S.C. §§ 1604 6(g)(3), 6(f) (1994).

138. *See supra* note 132. Senator Humphrey's original bill (S. 3091) was amended to provide legislative assurances to conservation interests that required the Forest Service to eschew certain extractive resource policies. One provision required the use of a sustained yield forestry practice known as "nondeclining even-flow." This provision mandated that timber sales from each forest were to be:

> ". . equal to or less than a quantity which can be removed from such forest annually in perpetuity on a sustained yield basis: Provided, That, in order to meet overall multiple use objectives, the Secretary may establish an allowable sale quantity for any decade which departs from the projected long-term average sale quantity that would otherwise be established. [S]uch planned departures must be consistent with the multiple-use management objectives of the land management plan. . ." Forest and Rangeland Renewable Resources Planning Act of 1974, Pub. L. No. 94-588, §13, 90 Stat. 2949 (1976 Amendment).

Although this practice had already been adopted internally by the Forest Service in 1973, the amendment committed the agency to plan timber harvest levels on each forest at a rate that were sustainable indefinitely.

The timber industry and many economists opposed this provision. In their view, nondeclining even-flow was too restrictive because it prevented major variations in the allowable cut on a national forest that could increase economic returns while still meeting sustained timber yield goals. To accommodate the objection, the final version of the bill allowed for exceptions from the "nondeclining even-flow" policy in order to achieve multiple use goals. This arrangement was emblematic of the design for national forest planning. This compromise enabled Congress to delegate discretionary authority to the Forest Service to operate within certain limits. This also allowed Congress to defer responsibility to the Forest Service for many controversial decisions regarding the determination of management priorities, land allocations and levels of commodity development and other resource uses.

139. 16 USC §§ 1604 6(g)(3), (6)(g)(6) (1994).

140. As a precursor to new national forest planning, NFMA contained several provisions intended to remove the threat of delays resulting from legal challenges to new planning. The statute provided that existing plans for an area would remain in force until a new land management plan was adopted. Primarily, this meant the unit plans, and timber management plans and other special use plans developed under

ments central to administrative reform of the era[141] are embodied in NFMA. First, the relationship between law and administrative behavior is specified in the statutory elaboration of the planning process.[142] Second, the law expanded opportunities for public involvement in the planning process, seeking to permit unprecedented levels of public participation in management decisions. These features promoted new avenues of decision-making within the agency and distinguish NFMA land management planning from earlier Forest Service management. The changes were substantial and have shaped the course of national forest management from the enactment of NFMA to the present.

The primary aspect of NFMA's reforms, the close relationship between law and administrative behavior, was intended to ensure that planning decisions were consistent with the law and that the agency would make its reasons for management decisions explicit in the plans themselves. National forest resource planning and management actions were to be undertaken pursuant to detailed statutory instructions to ensure that adequate consideration was given to both resource protection and development. Regulations emphasized full assessment of the forests' capabilities for diverse uses and required decision-making consistent with that information. Land management planning and its requirements for environmental analysis and documentation sought to ensure that the agency would develop plans that satisfied statutory objectives for resource development, while also taking account of local environmental conditions. These new procedures meant that considerably more detailed assessments would be required prior to an agency action. The difficulties were compounded in the case of the national forest lands because NFMA called for standardized

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the auspices of the Multiple Use Sustained-Yield Act of 1960. This allowed the Forest Service to continue to manage the national forests as it had before the National Forest Management Act, pending the completion of the new plans. Notwithstanding the decision in the Monongahela case, this provision tacitly permitted the use of clearcutting on the forests, pending the release and final approval of the National Forest Management Act plans, including the period during which a new plan might be appealed. In order to remove any further doubt as whether clearcutting was permitted, Section 11 of the statute explicitly repealed the language of 1897 Organic Act which had stipulated that trees could not be harvested unless the trees were "mature" and individually "designated" and "marked."

141. *See* Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1669 (1975).

142. *See generally* WILKINSON & ANDERSON, *supra* note 37.

—but also site-specific analysis and planning—for a set of extremely varied lands and natural resources.[143]

The procedural reforms associated with NFMA planning and with the NEPA process prompted the Forest Service to consider information that previously was undervalued or ignored. The statute directed the agency planning to use an "interdisciplinary team" consisting of a group of agency scientists and resource professionals with diverse scientific and professional skills. By requiring input from new kinds of experts, NFMA intended to make certain that the condition and sustainability of forest resources was given full consideration during agency decision-making.

The law recognized that Forest Service administrators were charged with more than managing a planning process: they were policymakers. Their decisions would have a significant impact on the condition of the national forests. The statute gave the administrators general guidance regarding that content of the plans. Regulations delineated more specific requirements for analysis, planning, and criteria for decision-making. Agency managers were vested with authority to reach a decision within a range of legally acceptable outcomes that would achieve the greatest "net public benefit."[144] This standard left decision-makers with a great deal of authority and discretion to make management decisions. There were, however, certain other constraints on administrators. Land management planning, like many other public programs, was conducted in a highly charged political environment. From the early days of land management planning, a succession of executive branch appointees paid close attention to the possible implications of the agency's decisions. The Forest Service, therefore, was expected to act with both technical proficiency and sensitivity to public and political opinion.

Establishing a comprehensive land use planning system over large and diverse resource areas was both a conceptual challenge and a practical problem. The conceptual challenge was to ensure standardization while permitting planners to consider and respond to local environmental and socioeconomic differences. The practical problem was to gather and analyze very large amounts of natural resource data and related information efficiently and accurately. The effort to standardize was at odds with need for

143. *Id.*

144. 36 C.F.R. 219. 12 (c) (1988).

individual treatment of areas that often possessed unique characteristics.[145] In light of these complexities, the expectation that NFMA planning would retain sufficient flexibility for managers to respond to varying local needs and conditions was perhaps a forlorn hope.

NFMA sought to increase public representation in administrative agency decision-making. New laws created opportunities in the administrative process for agencies to consider and respond to the public's reaction to agency proposals. NFMA required agency consideration of public opinion during all stages of the planning process. Efforts to draw the public into the planning process resulted from the tacit recognition that forest planning, although dependent on Forest Service expertise and professional judgment, had political implications. Public involvement was intended to reorient administrative decision-making from a strict reliance on expert management toward a process resembling a political dialogue between the administrator and the public.[146]

NFMA land management planning gradually began to incorporate various types of public participation when possible, in the hope that disagreements over administrative decisions could be settled expeditiously without proceeding to litigation. Procedures designed to accomplish these objectives quickly led to greater formalization of data gathering and analysis. The Forest Service also experimented with innovative techniques, such as negotiation, that blurred distinctions between public involvement and conflict resolution.[147] As it attempted to settle policy questions, the agency drew on collaborative approaches used in other administrative and regulatory settings.[148]

NFMA planning was introduced into an already contentious atmosphere, with timber interests and environmentalists fundamentally opposed to each other's position. New controversies oc-

145. *See* DANA & FAIRFAX, *supra* note 2, at 328-336.

146. *See generally* Robert Reich, *Public Administration and Public Deliberation: An Interpretive Essay*, 94 YALE L. J. 1617-1640 (1985). *See also* Joel Handler, *Dependent People, the State, and the Modern/Post Modern Search for the Dialogic Community*, 35 UCLA L. REV. 999 (1988); JOHN FRIEDMANN, PLANNING IN THE PUBLIC DOMAIN: FROM KNOWLEDGE TO ACTION (1987).

147. *See generally* JULIA WONDOLLECK, PUBLIC LANDS CONFLICT AND RESOLUTION: MANAGING NATIONAL FOREST DISPUTES (1988).

148. *See generally* Daniel J. Fiorino, *Regulatory Negotiation As A Policy Process*, PUB. ADMIN. REV. (July/August 1988); GAIL BINGHAM, RESOLVING ENVIRONMENTAL DISPUTES: A DECADE OF EXPERIENCE (1986); TIMOTHY J. SULLIVAN, RESOLVING DEVELOPMENT DISPUTES THROUGH NEGOTIATION (1984); LLOYD BURTON, JR., AMERICAN INDIAN WATER RIGHTS AND THE LIMITS OF THE LAW (1991).

curred over natural resource issues and areas where a strong tide of activism had already left an indelible mark. Accordingly, NFMA's land management planning mission was subject to continuing scrutiny by activists, interest groups and scholars. At the time of its enactment, there was considerable skepticism among scholars about the power of the new law's reforms to overcome the polarization. Those familiar with contemporary public land management in the United States had come to view controversy as the normal condition for public land policy-making. To many observers, therefore, the effort to blend the conflicting aims in NFMA, simultaneously promoting multiple use and sustainability of forest resources was a formula that would only increase conflict and inefficient use of publicly owned natural resources.[149] As the planning process got underway, policy scholars expressed added doubt about the chances for successful culmination of the planning especially in light of NFMA's procedural elements which offered opponents many opportunities to challenge implementation of agency plans, and easy access to the legal process.[150] It was not long before the operation of NFMA proved this view to be fairly prophetic.

B. *NFMA Planning in the Sierra Nevada: Initial Effects*

In the late 1980s and early 1990s, the Forest Service produced Land and Resource Management Plans (LMPs) that laid out the future resource use within each national forest in the Sierra Nevada.[151] Planning focused on individual national forests, with little regard for regional factors or characteristics. Nevertheless, NFMA planning represented a major undertaking for the agency, and several elements of the plans illustrated significant departures from the policies that previously guided national forest management in the Sierra Nevada.[152] Armed with statutory language that once again permitted the agency to utilize even-aged

149. *See generally*, RANDAL O'TOOLE, REFORMING THE FOREST SERVICE (1988); RICHARD STROUP AND JOHN BADEN, NATURAL RESOURCES: BUREAUCRATIC MYTHS AND ENVIRONMENTAL MANAGEMENT (1983); Kenneth Rosenbaum, *Forest Planning — Bound for the Courts Again*, 14 ENVTL. L. REP. 10195 (May 1984).

150. Richard Behan, *RPA/NFMA —Time To Punt*, 79 J. OF FORESTRY 802, 805 (1981).

151. *See generally* <http://www.r5.fs.fed.us/sncf/framework/design_paper/design_paper_1.4.html.>

152. These silvicultural methods included seed tree cutting and overstory removal. While these methods were technically not clearcutting, they are often criticized their effects are similar to clearcutting, namely the removal and replacement of entire stands of timber.

management and clearcutting, the plans called for increased timber harvesting and employed clearcutting and related silvicultural methods.[153] The Forest Service wanted to enhance the productivity of national forest lands devoted to timber production. Despite the controversy over clearcutting and related practices, the agency proposed to greatly increase their utilization in many regions, including the Sierra Nevada. The new plans also proposed significant increases in timber harvest levels in the Sierra Nevada, with selection logging continuing at somewhat reduced levels.[154] The rationale for the change in harvesting methods was to ensure an even distribution of tree-age classes across each forest.[155] This practice was intended to allowing the forest to set timber harvest levels of timber that complied with NFMA's provision for harvest levels that would not decline from decade to decade. Planning documents presented to the public suggested that as these stands were cleared and replanted, growth would increase overall, allowing the forest to continue to supply more timber in the future.[156]

Individual forest plans also considered the status and eventual utilization of remaining roadless areas. Forest Service planners viewed Roadless areas with the capacity to produce timber as potential sites for intensive timber management.[157] This strategy fit well as part of an agency effort to improve timber yield. Similarly, in other areas, the natural mix of species had been or was being eclipsed by the growth of white fir. The presence of this species had increased due to the combined effect of earlier timber harvests and fire suppression. These stands were to be harvested and replanted with species that existed before human intervention. This strategy presented one method of restoring the vitality of the forest, but it was also designed to increase commercial timber yields on the remaining commercial timber base.[158]

153. U.S. DEP'T AGRIC., PLUMAS NATIONAL FOREST FEIS FOR THE MANAGEMENT PLAN 2-146 (1988). The Final EIS did acknowledge that uneven age management might succeed if properly conducted. The Plumas revised the preferred alternative to manage 800 acres per year under an uneven age silvicultural system for purposes of research.

154. *Id.* at. 2-140.

155. *Id.* at 3-64.

156. *Id.*

157. U.S. DEP'T AGRIC., TAHOE NATIONAL FOREST FEIS FOR THE MANAGEMENT PLAN, III-26 (1990).

158. *Supra* note 153, at 3-15.

Many foresters were sympathetic to the goals of the Forest Service.[159] Professional foresters, many of them students in the 1960s and 1970s, had been exposed to various scientific techniques for improving tree and stand quality. From their perspective, the benefit harvesting of mature timber and older stands moved the national forests much closer to the ideal of a regulated forest. Foresters regarded agency initiatives as an effort to promote greater productivity of forest land. The techniques of stand conversion and even aged management ensured that future timber growth and yield could be more easily predicted and more reliably modeled.[160] Prior to the adoption of the LMPs, these practices had already been introduced on a smaller scale in selected areas in the Sierra Nevada.[161] On the other hand, environmental critics of the land management plans questioned the entire premise that timber production should take precedence over other forest uses and values. They viewed the Forest Service's description of the benefits of these silvicultural methods as insufficient to justify either the increased harvesting or the use of clearcutting.

With the exception of scenic corridors, clearcutting and related practices were expanded from a small portion of the landscape to the majority of timber harvest settings. Following the Forest Service's approval of individual LMPs in the late1980s and early 1990s, utilization of these practices to convert forest stands to even-aged silvicultural systems was estimated to be occurring at a rate of 229,000 acres per decade. This trend is projected to have significant impact on the ecological attributes of those forests.[162]

This policy produced some dramatic changes. For example, timber was logged immediately adjacent to a number of giant Sequoia groves located in Sequoia National Forest. The timber was harvested by clearcutting. These clearcuts were among the most visible changes implemented as a result of land management planning. They were justified in part by Forest Service managers as a method to enhance giant Sequoia vigor and to promote regeneration of giant Sequoias.[163] Environmentalists viewed the timber sales and harvests as evidence of irresponsible steward-

159. *Supra* note 39.

160. *Id.*

161. L.S. DAVIS, FOREST MANAGEMENT (2d ed. 1987).

162. VERNER, *supra* note 102, at 266.

163. REBECCA SOLNIT, *Among the Giants: California's Sequoias May Be More Than 3,000 Years Old, But They're Running Out of Time*, SIERRA 30-37, 63 (July/August 1997).

ship in these relatively fragile ecosystems.[164] They regarded the logging as proof that the agency was more interested in obtaining timber than in protecting the landscape. The controversy raised questions of ecological and esthetic significance, and sparked lawsuits.[165] Clearcutting in these areas was eventually ended and the management of the groves restructured as part of the Mediated Settlement Agreement, a negotiated settlement of the dispute.[166]

During this period, several other newly enacted statutes further modified the Forest Service's management authority. The implications of these laws for national forest management in the Sierra Nevada will not be examined here in great depth, but it is important to understand that these laws altered federal prerogatives regarding natural resource planning and management. The Federal Land Policy and Management Act of 1976 directed the Bureau of Land Management (BLM) to undertake comprehensive land and resource planning for the public lands, similar in scope to what NFMA required for the national forests.[167] The laws also revised aspects of the minerals programs of the Forest Service and BLM.[168] Additionally, FLPMA modified selected administrative authorities over Forest Service lands, including the rules for acquisition and exchanges of small tracts of noncontiguous land.[169] The Federal Wild and Scenic Rivers Act[170] established standards that the Forest Service is required to take into account in land management planning.

Other laws pertain to forest management practices and modify Forest Service discretionary authority in land management. The Federal Water Pollution Control Act (Clean Water Act)[171] and

164. Ronald E. Stewart et al., *Giant Sequoia Management in the National Forests of California, in* U.S. Dep't. of Agric., U.S. Forest Service, Pacific Southwest Research Station, Symposium on Giant Sequoias: Their Place in the Ecosystem and Society, Visalia, California (June 23-25,1992). *See also* U.S. DEP'T. OF AGRIC., U.S. FOREST SERVICE, PACIFIC SOUTHWEST RESEARCH STATION, GENERAL TECHNICAL REPORT PSW GTR-151, 154-5 (1994).

165. DEBORAH L. FISK, ET. AL., MEDIATED SETTLEMENT AGREEMENT FOR SEQUOIA NATIONAL FOREST, § B. GIANT SEQUOIA, AN EVALUATION, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS, REPORT #40, 277 (Centers for Water and Wildland Resources, Univ. of Cal., Davis Mar. 1997).

166. U. S. DEP'T AGRIC., U. S. FOREST SERVICE, MEDIATED SETTLEMENT AGREEMENT FOR SEQUOIA NATIONAL FOREST, § B. Giant Sequoia (1990).

167. 43 U.S.C. §1701-84 (1976).

168. 43 U.S.C. §1719, 1744 (1976).

169. 43 U.S.C. §§1715-1716 (1976).

170. 16 U. S.C. §§1271-87 (1994).

171. 33 U.S.C. §1251 (1994).

the Clean Air Act[172] delegated to the states the authority to regulate a range of activities to effect water and air quality respectively, provided that the state had obtained federal approval for its own program to enforce these laws. As a result, new air and water quality standards began to apply to federal lands, limiting activities traditionally associated with the use of public land. Under the Clean Air Act, for example, the federal government delegated enforcement of federal standards to the states, meaning that burning of logging residues and other forest material became subject to stringent state regulation.[173] The Clean Water Act required that activities likely to affect the quality of certain water systems to be conducted under approved procedures, or "Best Management Practices."[174] The Forest Service's initial interpretation of its responsibilities under this law was challenged in federal court in California, resulting in both more thorough protection for watercourses and the streams and in more stringent regulation of timber harvesting and other management actions affecting these areas.[175]

C. *Public Reaction to Planning*

By the late 1980s, the Forest Service had completed planning for the national forests of the Sierra Nevada. The results of NFMA planning did not escape controversy. During the review of the Forest Service LMPs, the initial proposals attracted widespread public attention. The new planning procedures and citizen input forced the Forest Service to be more explicit in its planning and analysis for different forest uses. The plans for the national forests in the Sierra Nevada were carefully scrutinized, and the proposed increases in the intensity of management practices quickly attracted critical comments from many segments of the public, including environmentalists, timber interests, scientists, area residents, and others familiar with the region.

A core of environmental activists emerged during the public involvement segment of planning on almost every national forest in the Sierra. Activists opposed the use of clearcutting and the

172. The Clean Air Act of 1970, 42 U.S.C. §7401 *et seq.* (1994) (as amended in 1977 and 1990).

173. California Health and Safety Code, § 39000 et. seq.

174. 33 U.S.C. §1251 *et seq.* (1994).

175. Northwest Indian Cemetery Protective Ass'n et al. v. Peterson et al., 764 F.2d 581 (9th Cir. 1985) *rev'd on other grounds,* Lyng v. Northwest Indian Cemetery Protective Ass'n, 485 U.S. 439, 108 S.Ct. 1319, 99 L.Ed.2d 534 (1988).

conversion of forest species. Many found it ironic that in the wake of earlier struggles against clearcutting, which had culminated in the Monongahela decision, they should now be forced to fight clearcutting again.[176] They continued to seek protection for the natural forest environment, particularly the remaining roadless areas, and lobby for agency support of recreation and other non-commodity forest uses. As the activists grew more sophisticated and better organized, they developed both the facility and predisposition to question agency proposals.[177] They were less likely to accept the professional judgment of the agency. Environmental organizations with experience in national forest management issues, such as the Sierra Club, the Wilderness Society, the Natural Resources Defense Council, the Audubon Society, and the National Wildlife Federation, actively followed land management planning. The national organizations depended to varying degrees on local groups and representatives for information on individual forests and for alerts about the ramifications of the plans.[178]

176. Interview with Steve, Eric, and Willow Beckwitt, Sierra Club, Sierra Nevada Group, Timber Issues Task Force, Nevada City, California (June 15, 1986).

177. All planning data is public information, and, in theory, freely obtainable by those who wish to examine it in detail, although occasional agency reluctance often made it difficult for the environmentalists to do so. Some critics visited Forest Service offices and delved deeply into the data as part of their examination of the DEIS and the draft land management plans. Local environmental activists and industry representatives (often with the assistance of consultants), studied voluminous FORPLAN (the linear programming system used by the Forest Service to analyze data) runs and other data not contained in the DEIS, the plan, or in its appendices.

178. *See* U. S. FOREST SERVICE TAHOE NATIONAL FOREST LAND MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT (1990). On the Tahoe National Forest, Forest Service proposals in the draft plan called for the extensive use of clearcutting and the harvest of timber in former roadless areas. To reforest the areas in which clearcutting was to be employed, the Forest Service proposed the resumption of herbicide use to control vegetation that would compete with the new seedlings. These elements of the plan provoked a great deal of controversy, and resulted in more than 12,000 letters being sent to the Forest Service during the comment period, both supporting and opposing aspects of the land management plan. Many were form letters or adaptations of "sample" letters that were distributed by environmentalists and the forest industry, and were then signed and returned by their sympathizers. Many letters discussed several items in the EIS or plan. When these letters were analyzed, they yielded a total of nearly 60,000 comments on its draft plan and EIS. Despite repeated public statements by the agency that the opportunity for public comment was not a "vote" on the plan or the alternatives, many of the letters received sought to do just that. The Forest Service was somewhat overwhelmed by the large numbers of letters and form letters received by the interest groups and their supporters. However, under its own guidelines, it was obliged to treat all of these as "comments" on the Draft Environmental Impact Statement.

Timber interests also paid close attention to the planning process in the Sierra Nevada. The timber industry, sympathetic state and local officials, and others requested that the Forest Service adopt a regional policy that set timber harvest levels closer to the RPA strategic targets for commodities. They also requested that the Forest Service adopt alternatives for the final plans for the national forests that closely conformed to RPA targets.[179] The Forest Service considered these the comments and referred to them in responses to public comments on planning documents. Many in the Forest Service were sympathetic to the tenor of the industry's comments but had come to realize that RPA's timber harvest targets for the Sierra were probably unachievable due to a combination of environmental constraints and public preferences for other forest uses.

NFMA, technically an amendment to RPA, greatly complicated the strategic planning impulse. NFMA's separate land and resource management planning addressed environmental sustainability and resource capabilities at the forest level rather than national strategic planning concerns. The results generally called for lower harvest levels that contemplated by RPA and deflected the impact of RPA's strategic planning and budgeting for the Forest Service. Ultimately, neither the RPA's strategic design, nor the targets it helped to establish for the production of commodities in each forest, controlled the outcome of land management planning.[180] Other landscape based scientific and timber related criteria contained in NFMA's provisions (discussed *infra*) controlled the initial outcomes of land management planning. The final decisions of forest supervisors and other agency managers contained little acknowledgment that the RPA targets called for higher harvest levels that were apparently inconsistent with NFMA's land and resource-based approach, and were thus not achievable under NFMA planning.

The State of California also responded to the plans, commenting both on the process as a whole and on individual plans.[181] Comments by California Department of Forestry and Fire Pro-

179. Interview with Jim Craine, Vice President of the California Forestry Association (formerly the Western Timber Association) (June 1986).

180. U.S. DEP'T AGRIC. U.S. FOREST SERVICE, POLICY ANALYSIS STAFF, CRITIQUE OF LAND MANAGEMENT PLANNING ORGANIZATION AND ADMINISTRATION, VOLUME 3, 14-15 (June 1990).

181. State departments commenting on the LMPs included The Resource Agency, the Department of Fish and Game, and the Department of Forestry and Fire Protection.

tection (CDF) went beyond discussing timber harvest levels and plans for individual national forests.[182] From the State's perspective, these issues required full consideration of the panoply of demographic, social, and environmental issues affecting the national forests and the surrounding landscape.[183] These comments were intended to reorient Forest Service planning toward a more integrated consideration of the national forests and their contribution to the region and to the state. The department's response attempted to synthesize the results of national forest planning with what was occurring on adjacent private lands.[184] The State wanted more room to maneuver with respect to natural resource issues. For example, the State suggested that sustained yield calculations for timber should employ a regional timber inventory, assessing the stock of timber on both public and private land as the starting point for sustained yield calculations, as opposed to relying solely on that of a single national forest.[185] State concerns extended to a variety of non-commodity issues, seeking to draw the Forest Service more deeply into planning for watersheds and regions, consisting of multiple national forests. Despite federal regulations stating that "The responsible line officer shall coordinate regional and forest planning with the equivalent and related planning effort of other Federal agencies, State and local governments, and Indian tribes,"[186] the agency made little or no effort to comply with the State's interpretation of the regulation. The Forest Service listened, but did not treat the State's suggestions as a serious criticism of land management planning, responding to the State's comments by explaining that its statutory mandate left it with little authority or guidance to undertake the mission that the state proposed.[187]

The Forest Service believed that the value of its vision of comprehensive land and resource planning would become evident over time, forcing observers and opponents to acquiesce to the results of planning. However, as the scope and intensity of the agency's proposals were laid out in the plans, it became clear that

182. FOREST AND RANGELAND ASSESSMENT PROGRAM, CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION, CALIFORNIA'S FORESTS AND RANGELANDS: GROWING CONFLICT OVER GROWING USES 117 (1988).

183. Interview with Robert Ewing, Director, Forest And Rangeland Assessment Program, Cal. Dep't Of Forestry And Fire Protection (Dec. 18, 1992).

184. *Id.*

185. *Id.*

186. 36 C.F.R. 219. 7 (a) (1988).

187. *Supra* note 183. *See also* 36 C.F.R. 219. 7 (a) (1988).

the natural character of many areas in the national forests would change drastically. In response, local, regional and national groups began to work together. Opposition became better organized, especially among environmental groups. Predictably, some of the same individuals and organizations that the Forest Service faced in earlier struggles over clearcutting and wilderness resurfaced to do battle again. In its defense, the agency emphasized its compliance with the procedural rules that had been established for planning. Although the Forest Service believed that its land management plans were legally acceptable, the now familiar aspect of environmental opposition to agency proposals was a troubling sign that the Forest Service might have difficulty getting forestry entirely "back to the forests." This result became more evident as land management plans were completed and adopted as the guiding policy for management of the national forests of the Sierra Nevada.

D. *Conservation Of The California Spotted Owl: Reshaping Resource Planning and Management in the Sierra Nevada*

The present statutory environment for resource management in the national forests is principally defined in the National Forest Management Act (NFMA), NEPA, and the Endangered Species Act (ESA). The legal requirements for protecting plant and animal species contained have played an important role in the evolution of federal and state resource management. Scientific analysis has helped administrators make decisions consistent with the law, but it has often revealed the shortcomings of established uses and management practices. Scientific information in combination with the mandates for the protection of sensitive species essentially required the Forest Service to take account of the needs of the species and/or to provide for its habitat requirements, or to modify any land management plan that fails to do so. Accordingly, the information gathered and made available in the NFMA planning process in the Sierra Nevada has meant that management practices, some in use for many years, may no longer be acceptable in certain areas.

The California spotted owl (*Strix occidentalis occidentalis)*, one of three subspecies of spotted owls, is related to the northern spotted owl (*Strix occidentalis caurina)* and the Mexican spotted

owl (*Strix occidentalis lucida*).[188] The California spotted owl's range extends from the Pit River (which flows into the northern eastern corner of the Central Valley), southerly through the Sierra Nevada. The range also extends south from the San Francisco peninsula, along the central Coast Range, throughout the forested areas of southern California, including the higher mountain regions.[189] The majority of California spotted owl habitat in the Sierra Nevada is within national forests in the Pacific Southwest Region (Region 5) of the Forest Service. (The northern spotted owl inhabits forests in Oregon, Washington, and northern coastal California, and lies partially within both the Pacific Northwest Region and the Pacific Southwest Region of the Forest Service). In the1980s, Forest Service management practices for both the northern and California spotted owls sought to protect small areas of owl habitat in a grid-like pattern, known as Spotted Owl Habitat Areas (SOHA). The Forest Service initiated these measures in the seven national forests on the western side of the Sierra Nevada in1981. The SOHA strategy permitted limited timber harvesting in parts of SOHAs not immediately adjacent to nest trees. Lands outside of SOHAs also were utilized for nesting, roosting and foraging by the owls, but the SOHA policy did not affect timber harvests on the remainder of forest lands.[190]

Research conducted on the northern spotted owl raised the possibility that the SOHA strategy did not sufficiently protect owl habitat and that the continued use of clearcutting was detrimental to the spotted owl. A special team, known as the Interagency Scientific Committee, completed a study on the northern spotted owl in 1989. Their research indicated that the existing management strategy of SOHAs would not sufficiently ensure the survival of the northern spotted owl, and that its continued use would lead to further decline in northern spotted owl numbers.[191] The Fish and Wildlife Service (FWS) listed the northern spotted owl as a "threatened" species under the federal Endan-

188. Verner, *supra* note 102 at 55.

189. The range of the northern spotted owl lies mostly in the Cascade mountain system, and includes part of both the Pacific Northwest Region and the Pacific Southwest Region of the Forest Service.

190. U.S. DEP'T AGRIC. U.S. FOREST SERVICE PACIFIC SOUTHWEST REGION CALIFORNIA SPOTTED OWL SIERRAN PROVINCE INTERIM GUIDELINES ENVIRONMENTAL ASSESSMENT III-1-2 (Jan. 1993).

191. JACK WARD THOMAS, ET. AL., A CONSERVATION STRATEGY FOR THE NORTHERN SPOTTED OWL 427 (1990).

gered Species Act (1973) (ESA)[192] in June 1990. The Mexican spotted owl was also later listed under the ESA.[193] The research findings suggested that the SOHA policy and subsequent administrative actions employed to protect the habitat of the California subspecies also were inadequate, and were as vulnerable to legal challenge as those employed for the conservation of the northern spotted owl.

NFMA and its regulations require that the Forest Service maintain "viable populations of native and desired non-native vertebrate species."[194] There were, however, few demographic or ecological studies specific to the California subspecies. Accordingly, the lack of biological information made it difficult to offer guidance as to what type of habitat management should be adopted or to justify any significant change in management guidelines. Nevertheless, there was some concern among scientists, resource managers, and the public that extensive clearcutting might jeopardize the survival of the California species. To respond to the uncertainty, the Forest Service instituted a new policy, known as Cumulative Effects Analysis (CEA), to supplement the SOHA strategy. CEA called for specific consideration as to how individual projects would affect owl habitat in relation to habitat conservation measures generally required for known or probable owl sites for pairs or resident single owls.[195] Environmental groups continued to express skepticism about the adequacy of the conservation measures, and questioned the decision to continue using the SOHA strategy for management of owl habitats. Eventually, the Natural Resources Defense Council appealed the Forest Service's timber sales in areas of the Sierra Nevada used by the spotted owls adjacent to the SOHAs.[196]

The administrative appeals drafted by the environmental groups relied on arguments raised in the cases concerning a similar controversy surrounding the protection of the northern spotted owl.[197] The appeal contended that NFMA's mandates,

192. 16 U.S.C. §§1531-1543 (1994).

193. 58 Fed. Reg.14248-14271 (1993). This subspecies of the spotted owl has been shown to be genetically distinct from the California spotted owl.

194. 36 C.F.R. 219.9 (1988).

195. Verner, *supra* note 102, at 37.

196. *See generally* NATURAL RESOURCES DEFENSE COUNCIL, APPEAL OF THE TAHOE NATIONAL FOREST LAND MANAGEMENT PLAN (Mar. 15, 1991).

197. Robertson v. Seattle Audubon Society, 503 U.S. 429 (1992); Seattle Audubon Society v. Evans, 952 F.2d 297 (9th Cir.1991); Seattle Audubon Society v. Moseley et al., 798 F. Supp. 1473 (W.D.Wash. May 28, 1992).

especially the section of the regulations requiring the Forest Service to ensure that its plans would provide a "minimum viable populations" of forest species, required the agency to take greater steps to protect wildlife habitat. The Forest Service was faced with a powerful administrative challenge. The agency determined that the argument of the environmental groups had substantial merit, and decided to try to resolve the issue by changing its policies without waiting for the results of the administrative and legal processes. This development was a clear indication that the agency's land management plans were not going to be implemented unless there were substantial modifications. The law's mandates, especially the section of the regulations requiring the Forest Service to ensure that forest plans provide for a "minimum viable population" of forest species, meant that far more would have to be done to preserve wildlife habitat than the agency had envisioned.[198] In this manner, procedural requirements in national forest planning led to additional substantive changes in the direction of resource management.

E. *Developing a Successful Conservation Strategy*

In May 1991, in response to growing scientific and public concern about the status of the California spotted owl, state and federal agencies convened the California Spotted Owl Assessment and Planning Team (Steering Committee). The group's objective was to assess the status of the owl and explore alternative management strategies that would conserve the subspecies and its habitat. The Steering Committee, co-chaired by Ron Stewart, then Regional Forester for the Pacific Southwest Region, and Douglas Wheeler, Secretary of the Resources Agency of California, included representatives from the Resources Agency, the Forest Service, the California Department of Forestry and Fire Protection (CDF), the National Park Service (NPS), the Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), the Board of Forestry (BOF) and the Department of Fish and Game (DFG). Representatives from county government, environmental groups, forest products industries, the Farm Bureau, and several other organizations were also invited to attend. Agency representatives agreed to plan the implementation of conservation measures, focusing on those required if the sub-

198. *See* Michael A. Padilla, *The Mouse That Roared: How The National Forest Management Act Diversity Of Species Provision Is Changing Public Timber Harvesting*, 15 UCLA J. OF ENVTL. L. & POL'Y. 113-150 (1997).

species were to be listed under the ESA. The charter for this project directed participating federal and state natural resource agencies to ". . .work cooperatively . . . to assess local research, inventory and monitoring information for the . . . spotted owl [and that as] more information becomes available. . . agencies will continue to work cooperatively to incorporate other species and habitat needs into a long-term ecosystem planning strategy for the Sierra and Southern California ecosystems.[199]

The Steering Committee immediately created two teams, a "Technical Team," to provide expertise in avian biology and ecology, and a "Policy Implementation Planning (PIP) Team," to provide policy and economic analysis. The project was to produce several results:

- A review by the Technical Team of the status of the California spotted owl, to be published as a technical report.
- Recommendations by the Technical Team for a management strategy to maintain viable populations of the owl, including an assessment of alternative measures considered.
- Analysis by the PIP Team of socio-economic effects resulting from the implementation of the management recommendations of the Technical Team, including an "evaluation of alternative institutional strategies" and regulatory applications to be considered for adoption by state and federal agencies.

The Forest Service had recently introduced an "Ecosystem Management"[200] initiative, and the spotted owl initiative was consistent with its direction. Subsequently, President Clinton honored a campaign promise and convened a Forest Conference in Portland in the spring of 1993, which echoed support for such an approach. The "Forest Ecosystem Management: An Ecological, Economic, and Social Assessment" report (FEMAT)[201] and the companion Final Supplemental Environmental Impact Statement (FSEIS)[202] and Record of Decision,[203] prepared to guide

199. *Charter*, California Spotted Owl Assessment and Planning Team (May 14, 1991) (unpublished manuscript, on file with the author).

200. USFS Memo, *supra* note 8.

201. *See* U.S. DEP'T AGRIC., U.S. FOREST SERVICE PACIFIC NORTHWEST REGION, FOREST ECOSYSTEM MANAGEMENT ASSESSMENT TEAM, FOREST ECOSYSTEM MANAGEMENT: AN ECOLOGICAL, ECONOMIC, AND SOCIAL ASSESSMENT (May 1993).

202. *See* INTERAGENCY EIS TEAM, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT ON MANAGEMENT OF HABITAT FOR LATE-SUCCESSIONAL AND OLD-GROWTH FOREST RELATED SPECIES WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL (Feb. 1994).

public land management in the northwest, tended to confirm that the Forest Service and the Bureau of Land Management were sharply altering their management direction.

The Technical Team analyzed the status of the owl and evaluated several alternative management strategies for the owl. The Technical Team investigated the causes for the loss of suitable habitat in the Sierra Nevada. The Team observed that suitable owl habitat probably was once more extensive, and concluded that habitat loss has been caused by even-aged silvicultural practices and catastrophic fire. Their research attributed further diminution in habitat to the activities of miners and sheepherders in the nineteenth century.[204] The scientific analysis suggested that existing policy and management measures used to protect the spotted owl and its habitat were completely inadequate. SOHAs did not provide habitat sufficient to sustain a population of spotted owls in the Sierra Nevada. The Team noted that the current policy, adopted as a result of NFMA planning, called for increased clearcutting and other forms of regeneration harvests.[205] This approach emphasized the harvest of all trees in an area, or the harvest of large diameter trees, which were the preferred nesting and brooding sites of the owl. These actions removed forest structures upon which the owl was dependent.

The Technical Team presented its analysis and recommendations, known as the "CASPO report," to the Steering Committee in May 1992. The report, *The California Spotted Owl: A Technical Assessment of Its Current Status*, was published in July 1992.[206] The Technical Team regarded current management direction as detrimental to the long term well being of the habitat and the species.[207] Under the Land Management Plans (LMPs) for the Sierra Nevada national forests, the Technical Team estimated that the amount of suitable habitat would further decline

203. *See* INTERAGENCY EIS TEAM, RECORD OF DECISION FOR AMENDMENTS TO FOREST SERVICE AND BUREAU OF LAND MANAGEMENT PLANNING DOCUMENTS WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL; STANDARDS AND GUIDELINES FOR MANAGEMENT OF HABITAT FOR LATE-SUCCESSIONAL AND OLD-GROWTH FOREST RELATED SPECIES WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL (Apr. 1994).

204. VERNER, *supra* note 102, at 10-11, 225, 232-233, 240-241, 248-253.

205. Data from national forest timber sales reflected this increase. *See* VERNER, *supra* note 102, at 240-241.

206. *Id.*

207. Interview with Jared Verner, Project Leader, Wildlife Monitoring and Range Research, Pacific Southwest Research Station (July 22, 1993).

at a rate of 229,000 acres per decade.[208] The research also concluded that suppression of fire had accelerated the accumulation of fuels and significantly increased the likelihood of fires that would destroy timber stands, including those essential to the spotted owl. The Team concluded that these management actions had additional detrimental effects on spotted owl habitat. The Team proposed an interim strategy to enable additional research, but the interim strategy also proposed an end to clearcutting and the harvest of large trees in areas used by spotted owls.[209] An ongoing drought and several recent and severe wildfires in the Sierra had heightened concerns about forest fire and fuels management well before the CASPO study. While the Technical Team did not address the fire danger on a regional basis, it did address the concern in and around owl habitat. The strategy recommended a system of thinning of dense stands and the use of other types of fuels management.[210]

The Technical Team's conclusions made it clear that habitat protection for the owl in the Sierra Nevada could not be achieved while simultaneously allowing clearcutting or otherwise permitting the removal of old large trees in these forests. The Forest Service's existing policies and plans faced the prospect of wholesale modification. The new interim policy precluded any large-scale use of clearcutting or other methods intended to achieve even-aged forest management. Ultimately, it appeared that the effect of the regulation requiring that the agency provide for "minimum viable populations" of forest species would significantly alter the Forest Service's course. The result was that earlier changes proposed by Forest Service land and resource management planning, such as the clearcutting of large areas in the Sierra Nevada, had to be reconsidered. Eliminating timber harvests in owl habitat was clearly going to have a dramatic effect. An independent estimate predicted that adoption of the recommendations of the Technical Team would reduce the timber harvest in the national forests of the Sierra by at least 60 percent[211]

208. VERNER, *supra* note 102, at 11 and Ch. 13.

209. *Id.* at Ch. 1.

210. *Id.* Data from national forest timber sales reflected this increase.

211. L. RUTH AND R. STANDIFORD, CONSERVING THE CALIFORNIA SPOTTED OWL: IMPACTS OF INTERIM POLICIES AND IMPLICATIONS FOR THE LONG-TERM REPORT OF THE POLICY IMPLEMENTATION PLANNING TEAM TO THE STEERING COMMITTEE FOR THE CALIFORNIA SPOTTED OWL ASSESSMENT 10, table 4-4 (Wildland Resource Center, Univ. of Cal., Davis, May 1994) [hereinafter PIP TEAM REPORT].

F. *Turning Strategy to Policy: the Limits to Federal-State Cooperation*

To adopt the CASPO recommendations as management policy, the agency followed the planning and public participation requirements of NFMA and NEPA. The Forest Service prepared the California *Spotted Owl Sierran Province Interim Guidelines Environmental Assessment* (EA).[212] The EA incorporated substantially all of the CASPO management recommendations into an interim management plan for the Sierra Nevada national forests. A decision by Regional Forester formally amended the regional guidelines for land management in the seven Sierra Nevada national forests. This procedure satisfied the requirements of NEPA, as these amendments were judged to be "non-significant" actions.[213] On January 13, 1993, the Regional Forester adopted the plan as a management direction for these national forests.

The Regional Forester's decision received a mixed reaction from the other members of the Steering Committee. Representatives from state agencies initially refused to accept the view that a unilateral change in policy was justified, alleging that the Forest Service decision to change policy abrogated the interagency agreement and departed from the exercise of shared authority they believed to be implicit in the owl assessment process. The Forest Service argued that there was no breach of this agreement, maintaining that it was clear that the long term survival of the population of the owl could not be assured if existing policy permitting extensive clearcutting and other forms of regeneration harvests remained in force. The Forest Service noted that the data submitted in the Technical Team's report left no choice: the agency was legally required to revise its management policy. The agency maintained that the Steering Committee's involvement in the development of policy pertaining to national forests was strictly advisory. At the same time, the agency agreed to remain part of the interagency process as it continued the preparation of the EIS.

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212. U.S. DEP'T AGRIC., U.S. FOREST SERVICE, CALIFORNIA SPOTTED OWL SIERRAN PROVINCE INTERIM GUIDELINES III-1-2 (1993).

213. U.S. DEP'T AGRIC., U.S. FOREST SERVICE, PACIFIC SOUTHWEST REGION, DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT FOR CALIFORNIA SPOTTED OWL SIERRAN PROVINCE INTERIM GUIDELINES, DN-13-15 (Jan. 1993) [hereinafter CAL OWL NOI].

Members of the Steering Committee representing the State of California found themselves in an awkward position. They recognized the need to implement changes in forest management to respond to concerns about owl habitat. They fully understood and accepted the Forest Service's desire to avoid a legal challenge to its management policies. Nevertheless, state officials now felt that their concerns had fallen on deaf ears, and that the agreement to jointly develop policy for spotted owl conservation had exerted no influence whatsoever on the federal government. The state's support for the California Spotted Owl Assessment had always been conditioned on two points. The first was the federal government's assurance the collaboration would include a substantial effort to address the economic and environmental implications of changes in management of national forests in the surrounding region. The second was the principle that this was a collaborative effort between equal partners.

Ten years earlier, the State of California commented extensively on individual Forest Service plans, expressing concern about the Forest Service's failure to respond to the changing context for forest management. The message to the federal government had been that if land management planning was to succeed in the Sierra Nevada, the process needed to more fully consider regional effects. The state had called for a more cooperative approach to regional planning that never materialized. Moreover, state and local officials were concerned that the sudden decline in the timber supply would have a punishing effect in the communities of the Sierra that continued to have an economic dependence on timber harvesting and processing. With the Forest Service's announcement, the CASPO process seemed to have reached a result without any substantial mitigation of the regional economic impacts caused by the decline in timber harvesting.

Arguably, the Forest Service's failure to pay heed to the concerns expressed by the State of California regarding the environmental context land management planning process in the prior decade, led to increased state support for cooperative initiatives designed to focus more local and regional attention on Forest Service planning, and on other issues in the Sierra Nevada. Evidence of the state's support for a more ecologically integrated, regional approach to management is reflected in the state's strong role in the drafting, adoption and implementation of the

"Memorandum of Understanding on Biological Diversity."[214] Accordingly, state officials sought to better integrate measures to conserve habitats for multiple species while maintaining viability of local economies into Forest Service planning and decision-making. Realizing the Forest Service was not in a position to undertake or foster this kind of work, the state began to do so. These initiatives also included the California Spotted Owl Assessment itself, the California Council on Biological Diversity, the Sierra Summit,[215] and Sierra Nevada Research Planning (SNRP), and the California Fire Plan.[216] Although the state's views of how conservation objectives should be accomplished have provoked criticism on different occasions from both environmental groups and commodity interests, the state continues to articulate these same concerns.

NFMA planning, conceived as a method to provide for multiple use of the forests while ensuring resource sustainability and conservation of biological diversity, clearly had not ended conflict between forest use and protection in the future of the national forests. The law's provisions, channeled the political activism of the era and objections to the plans into the legal process. As the Forest Service's land and resource plans were completed in the Sierra Nevada, Conflicts over forest use and protection increasingly came to be characterized as scientific questions, which under the law, could provide the basis for a legal challenge to the plan. As the Forest Service's land and resource plans were completed in the Sierra Nevada, the Forest Service had not evolved methods to respond to the substance of public objections to NFMA planning. At first, the agency's answers to its opponents in forest planning disputes were formal, and contributed to the climate of "adversarial legalism[217] that surrounded forest planning. Public pressure for reinterpretation of the Forest Service's statutory responsibilities, along with the likelihood of a legal challenge forced the Forest Service to reex-

214. MEMORANDUM OF UNDERSTANDING, CALIFORNIA'S COORDINATED REGIONAL STRATEGY TO CONSERVE BIOLOGICAL DIVERSITY, 'THE AGREEMENT ON BIOLOGICAL DIVERSITY', STATE OF CALIFORNIA, THE RESOURCES AGENCY (Sept. 19, 1992) (on file with author).

215. THE RESOURCES AGENCY, THE SIERRA SUMMIT STEERING COMMITTEE, THE SIERRA NEVADA: REPORT OF THE SIERRA SUMMIT STEERING COMMITTEE (July 1992).

216. CALIFORNIA STATE BOARD OF FORESTRY, CALIFORNIA FIRE PLAN (Mar. 1996).

217. *See* Kagan, *supra* note 7.

amine the emphasis it had placed on commodities. Only at this juncture did the agency begin to seriously restructure natural resource planning and management to better incorporate scientific information about local areas into national forest planning and management.[218]

III.
ECOSYSTEM MANAGEMENT STRATEGIES IN THE SIERRA NEVADA

The Forest Service, despite modifications to its policies, remained under attack. Challenges to its competence, authority, and mission forced the agency to explore new methods to respond to resource conservation issues. In the 1990s, realizing that it had made erroneous assumptions regarding legal requirements for biological diversity, the agency concluded that it could no longer ignore the likely effect of legal requirements. The Forest Service's treatment of controversies over resource conservation in the Sierra Nevada was influenced by the agency's experience in a similar controversy in the Pacific Northwest that was played out in a series of drawn out legal battles.[219] Forest Service officials struggled to respond constructively to changes in the interpretation of the agency's legal obligations. In other regions, the Forest Service may have been slow to recognize its legal responsibilities. Chastised by legal defeats over the spotted owl[220], it rapidly began to change existing policies to comply with statutory and judicial requirements. In 1990, the Forest Service embraced the concept of "ecosystem management" to meet the challenges posed by environmental and ecological issues.[221] The Forest Service embarked on policy initiatives in California designed to avoid a repetition of defeats suffered elsewhere. The Forest Service adopted an ecosystem approach to natural resource management issues, believing that this would allow the agency to satisfy the panoply of legal directives requiring the agency to take account of increasingly complex ecological information. The Forest Service's decision to provide interim protection for the spotted owl allowed the agency to take steps to ensure conservation of the California spotted owl and its habitat and to continue research on the owl proceeded in a constructive direction. The de-

218. *See, e.g.,* YAFFEE, *supra* note 9.
219. *Id.*
220. *See* Robertson v. Seattle Audubon Society, 503 U.S. 429 (1992).
221. USFS Memo, *supra* note 8.

cision gave the agency time to gather additional data and to develop a policy that would take into account new scientific information. As concern about the owl intensified, it became apparent that there was a dearth of authoritative scientific information not only in regard to the owl, but also pertaining to the old growth forests in the Sierra Nevada —the very forests favored by owls and other species.

A. *The Sierra Nevada Ecosystem Project (SNEP)*

The Forest Service and its critics recognized that the practice of ecosystem management entailed better knowledge of the landscapes, resources and ecological dynamics. This realization led to increased support for research on these elements of the national forests. The lack of information about old growth characteristics and processes meant the agency had little data to rely upon in the development of a long-term policy for habitat protection for spotted owls and other sensitive species in the region. Congress therefore began to pay attention to a chorus of voices from resource managers, environmentalists, and scientists, who had called for action to resolve certain controversies over old growth. Grass roots environmental interests, later joined by the Forest Service, called for the development of an independent map of old growth forests in the Sierra Nevada.[222] Some agency personnel suggested that Congress should also request a thorough review of the entire suite of resource issues associated with these forest areas. After several legislative efforts, Congress requested an assessment of the Sierra Nevada ecosystem as part of the Conference Report for Interior and Related Agencies 1993 Appropriation Act (H.R. 5503).[223] This legislation appropriated funds for a scientific study by an independent panel of scientists of the remaining old growth in the national forests of the Sierra Nevada in California, and for further analysis of the entire Sierra Nevada ecosystem.

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222. In a January 19, 1993 letter to Forest Service Chief Dale Robertson, Congressman George Miller, Chairman of House Committee of Natural Resources, and seven other members of Congress called for the creation of an panel of scientists who would produce a map of old growth ecosystems in the Sierra Nevada, and a report to Congress that was to include range of alternatives for Sierra Nevada management. *See* SIERRA NEVADA ECOSYSTEM PROJECT PROGRESS REPORT 50-52 (May 1994). *See also* Sierra Biodiversity Institute <http://www.oro.net/~sbihome/history2.htm#Establishment> (visited Apr. 13, 2000).

223. *Conference Report for Interior and Related Agencies 1993 Appropriation Act*, H.R. Doc. No. 118-5503 (1993).

The background and legislative history of the study emphasized that the report was to advise Congress rather than to prepare a plan or to develop a spectrum of alternatives for future consideration in an environmental impact statement. Simultaneously, however, the Forest Service was engaged in the spotted owl policymaking process. The agency had already committed itself to a revision of existing plans to better conserve owl habitats. The results of the independent study would furnish information about the condition of additional species and other natural resources. All interested parties anticipated that the new information would cause a reevaluation of existing policies, and thus could have profound implications for future natural resource policy in the region's national forests as well as for other lands and resources in the region.

As a result of the scientific research and cooperative planning associated with the California spotted owl, the Forest Service knew that credible scientific information was an essential element in habitat protection and forest management. Building on instruction from Congress, the Forest Service established an independent steering committee to clarify the charge from Congress and to select a team of scientists (Science Team). The intention was to ensure that the Science Team and the study would be insulated from the Forest Service's influence but informed by Forest Service research data and expertise. Steering Committee representatives included representatives from the Forest Service, the National Park Service, the University of California, the National Academy of Sciences, and the California Academy of Sciences. The Steering Committee selected a Science Team, which began meeting in the summer of 1994.

Together with the Steering Committee, the Science Team clarified the general objective of the Sierra Nevada study, stating that the Science Team was to developing a scientific assessment of the health and sustainability of the Sierra Nevada. Pursuant to Congress's request, the project was to examine existing research to provide an overview of the status of resources and ecosystems. The final report was also to include strategies designed to protect the health and sustainability of the Sierra Nevada in the future while providing resources to meet human needs. The mission and the objective of the SNEP team were separate and distinct from the traditional approach to land management planning under NFMA. This distinction may be understood by considering three

areas in which the study diverged from the ongoing NFMA and NEPA processes in the Sierra Nevada:

- The area of study in the SNEP assessment was the entire geographical region of the Sierra Nevada. The objective was to include assessment of all lands and resources, both public and private.
- The two processes' objectives were distinct. SNEP was intended to be an environmental assessment and not a management plan. On the other hand, the NFMA land management planning process, characterized by the Forest Service as developing a plan for "ecosystem management," was a decision-making process for future natural resource conservation and development. As such, it was oriented toward the development of the sustainable resource management on national forest land within the context of existing laws and regulations. Pursuant to legal rules in NFMA and NEPA, Forest Service planning must lay out and justify a management scheme that can be implemented to manage the land and resources under its jurisdiction.
- SNEP offered "strategies," while the NFMA/NEPA process presents a range of "alternatives." SNEP's "strategies" were intended to be heuristic exercises. The strategies were intended to educate Congress and the public, and to create a better understanding of unexpected ramifications brought about by human action. The strategies demonstrated broad choices and the implications of management choices. They pertained to selected components of the ecosystem, rather than to an entire landscape or to the entire region. As such, they lacked the necessary comprehensiveness and the intricate detail required in the management plans prepared for inclusion in an EIS document.[224]

The Sierra Nevada Ecosystem Project built on existing scientific research and conducted assessments of the region's ecosystems, natural resources, and examined their relationship to society.[225] The *Final Report Of The Sierra Nevada Ecosystem Project*, sum-

224. CENTERS FOR WATER AND WILDLAND RESOURCES, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Chs. 36. 37, 38, 39 (1996). *See id.* at Addendum (1997); *id.* at Vol. 2, Ch. 40 (1996). *See also* <http://ceres.ca.gov/snep/pubs/> (visited Apr. 11, 2000).

225. *Id.*

marizing the work of the SNEP Science Team was published in three volumes in1996, with an addendum in 1997.[226]

B. *The Progress of Forest Service Management Proposals in the 1990s*

As the Sierra Nevada Ecosystem Project progressed, Forest Service management plans for the Sierra Nevada again attracted attention. The Regional Forester had implemented the CASPO guidelines as an interim policy. Timber interests, and several counties whose economies and revenues were affected by the Regional Forester's decision, challenged the decision in court. The Forest Service's "interim strategy" proved sound enough to easily withstand these challenges.[227] When CASPO was implemented, as predicted, it resulted in a dramatic decline in timber harvests in the national forests of the Sierra Nevada. Timber harvests were reduced to approximately two-thirds of their level prior to the adoption of the plan.[228]

The CASPO report also recommended that measures be taken to improve fuels management in and around forest stands. Reducing the accumulations of forest fuels was essential to reducing the fire danger in the national forests. Without timber harvesting, there were fewer opportunities for the Forest Service to undertake fuels management. Over the prior several decades, fuels accumulations in many areas had been reduced as the area was being logged, although logging did not eliminate fire risk, nor did it prevent fires or from spreading.[229] On the other hand, statutory arrangements had designated a portion of timber harvest receipts for use in the forest where the sale originated. Fuels management projects, especially in areas where independent or additional treatments were required, depended in part on these

226. *Id.*

227. California Forestry Association v. Jack Ward Thomas et al., 936 F. Supp. 13 (D. D.C. Aug. 27, 1996).

228. *U.S. Dep't Agric. U.S. Forest Service Pacific Southwest Region (Region 5)* (visited Feb. 25, 1998) <http://www.fs.fed.us/land/fm/salefact/salefact.htm>. *See also* William Stewart, *Economic Assessment of the Ecosystem, in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 3, Ch. 38, p.1020 (1996).

229. Certain practices associated with logging had been observed to increase fire risk. *See* Fire-Silviculture Relationships in Sierra Forests, *in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 44, p.1173 (1996).

funding sources. As logging levels dropped, projects that might once have been possible became problematic or were no longer viable.

Finding and implementing solutions to the practical problems of forest and fuels management became increasingly difficult for the Forest Service. Prescribed burning, which can reduce the fire danger by controlling fuels accumulations, was employed on a very limited basis in the Sierra Nevada region. Due to impacts on air quality, risks to human safety and to property, and considerations of potential liability, these programs require careful planning and supervision, and are costly to administer. They also require extensive coordination between local government, resource managers, and air quality management agencies.[230] For these reasons, it is difficult to implement prescribed burning on a scale large enough to make it an effective method for managing fuels in the Sierra Nevada national forests.[231]

In January 1995, after review of the results of ongoing research on the owl, the Forest Service issued a new plan for conservation and management of the national forests of the Sierra Nevada.[232] Accordingly, the agency developed a new plan with the objective of improving conservation planning by addressing the needs of the owl as part of the broader suite of forest species. The plan and the accompanying "Draft EIS: Managing California Spotted Owl Habitat in the Sierra Nevada National Forests of California."[233] were intended to help the Forest Service design a long-term policy for forest management in the Sierra Nevada. The release of the documents brought the next stage of national forest planning in the region to public attention.

Public and scientific reaction to the Draft EIS (DEIS) was swift and extremely critical. Reviews and public comment received by the Forest Service indicated that the draft did not take account of research published in SNEP pertaining to old growth

230. *See Calls for Controlled Burns Resisted as Smog, Forest Goals Clash*, S.F. CHRON. & EXAMINER online, Apr. 12, 1999, <http://www.sfgate.com>.

231. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3 (1996).

232. The technical team had recommended a number of ongoing population and demographic studies on owls. *See* VERNER , *supra* note 102, at Chapter 1.

233. U.S. DEP'T AGRIC., U.S. FOREST SERVICE PACIFIC SOUTHWEST REGION, DRAFT ENVIRONMENTAL IMPACT STATEMENT. MANAGING CALIFORNIA SPOTTED OWL HABITAT IN THE SIERRA NEVADA NATIONAL FORESTS OF CALIFORNIA: AN ECOSYSTEM APPROACH (Jan. 1995).

forests and other ecosystem resources, nor did it meet the public's expectations for a more ecologically sensitive plan.[234] The agency elected to substantially revise the document in order to respond to concerns raised in public comments and to circulate it anew for additional comment. Another draft, the Revised Draft Environmental Impact Statement for the Sierra Nevada National Forests (RDEIS),[235] was released for review in August 1996. This document met an even swifter demise; in an extraordinary action, the RDEIS was withdrawn by the Secretary of Agriculture one day after its release. The stated reason for the withdrawal was that the Forest Service needed additional time to fully consider the implications of the scientific research contained in the SNEP, and that the agency had erred in releasing the document. The administration's action suggested that it believed that the RDEIS may have contained serious deficiencies or omissions that were best addressed prior to the release of the document.

After the withdrawal of the RDEIS, criticism of the administration's action arose from several quarters. Timber interests were upset by the action. The timber industry was aware that that any new plan for habitat conservation was unlikely to lead to a significant reversal of the downward trend in the region's timber program. Nevertheless, the industry believed the withdrawal of the RDEIS was an effort to avoid articulating a final decision on management policy for the Sierra Nevada and the legal scrutiny that would follow its action.[236] Other reactions were mixed. Within SNEP and the Forest Service, a few individuals complained that the RDEIS, a good effort by the Forest Service to respond to complicated and conflicting directives, was being un-

234. *See* Jerry F. Franklin and Jo-Ann Fites-Kauffman, *Assessment of Late-Successional Forests of the Sierra Nevada, in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 21 (1996); Jerry F. Franklin et al, *Alternative Approaches to Conservation of Late-Successional Forests in the Sierra Nevada and Their Evaluation, in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 3 (1996).

235. U.S. DEP'T AGRIC., U.S. FOREST SERVICE PACIFIC SOUTHWEST REGION, REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT, MANAGING CALIFORNIA SPOTTED OWL HABITAT IN THE SIERRA NEVADA NATIONAL FORESTS OF CALIFORNIA: AN ECOSYSTEM APPROACH (Aug. 1996) (on file with author) [hereinafter RDEIS].

236. Telephone interview with Mark Rey, Senior Professional Staff, U.S. Senate Committee on Energy and Natural Resources (Sept. 2, 1996).

fairly abandoned.[237] Agency personnel complained that the eleventh hour withdrawal forced the Forest Service to take the heat for an administration that had never given the agency a clear direction as to what policy changes the administration believed were necessary.[238]

As a prelude to a renewal of the NEPA process, the Clinton Administration requested a formal review of recent scientific research and of the adequacy of the RDEIS prepared by the Forest Service.[239] A special investigation by the California Spotted Owl Federal Advisory Committee conducted an extensive review of Forest Service planning and decision-making. The committee concluded, *inter alia*, that the Forest Service had not adequately considered available scientific information pertinent to spotted owls in formulating its management plans.[240] Nevertheless, the Advisory Committee also found that planning had become too focused on spotted owls to the detriment of other species and forest attributes. It further concluded that the Forest Service had failed to adequately account for other resource concerns, particularly fire and fuels management, old growth forests, and the needs of other sensitive species[241] Congress requested another review, which was undertaken by the California Forest EIS Review Committee (CFEISRC). This panel conducted a narrower review of the RDEIS and articulated a very different view of the science in question. This report suggested that the Forest Service's work had been adequate for the purposes of land management planning and for release as a draft NEPA document.[242]

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237. Electronic mail communication from Connie Millar, U.S. Forest Service/PSW (Sept. 6-7, 1996) (on file with author); Telephone Interview with Connie Millar, U.S. Forest Service/PSW (Sept. 6-7, 1996).

238. *Id.*

239. U.S. DEP'T AGRIC. DEPARTMENT REGULATIONS NUMBER 1043-31, CALIFORNIA SPOTTED OWL ADVISORY COMMITTEE (Mar. 3, 1997).

240. U.S. DEP'T AGRIC. REPORT OF THE CALIFORNIA FOREST EIS REVIEW COMMITTEE (May 14, 1998). This Committee was formed at the request of the U.S. Senate Subcommittee on Forest and Public Land Management (Chair: Senator Larry Craig) and House Subcommittee on Forests (Chair: Congresswoman Helen Chenoweth).

241. U.S. DEP'T AGRIC., FINAL REPORT OF THE CALIFORNIA SPOTTED OWL FEDERAL ADVISORY COMMITTEE, 2-1 to 2-9 (1997).These included other furbearing mammals, including the fisher (*Martes penannti*) and the Pacific marten (*Martes americana*), whose status was already the subject of concern and scientific study.

242. REPORT OF THE CALIFORNIA FOREST EIS REVIEW COMMITTEE (May 14, 1998) (on file with author).

C. *Policy Prospects*

National forest policy initiatives, until comparatively recently, tended to respond to single-purpose functional demands, such as timber, range, or recreation.[243] Despite the trappings of multiple use, the agency continued to serve different segments of the public by providing separately for their needs. With the increased demands and use of the forests by the public, it became more difficult to successfully serve one constituency without angering another.[244] Implementation of NFMA was designed to address this dilemma by creating a blend of resource utilization and conservation that responded to the natural attributes and public values within each national forest.[245] Although NFMA contains explicit requirements for the evaluation and conservation of ecosystem attributes and functions, the Forest Service has had only limited success in incorporating an ecological approach into land and resource planning and management. Analysis of NFMA and other policies, and of the continuing efforts to resolve controversies over natural resource management, demonstrates that much of the opposition to Forest Service plans since 1976 has been due to the agency's efforts to continue a multiple use approach.[246] While the agency has sought to protect natural resources, it continued to provide timber and other commodities, an activity that appeared to take precedence over the ecological protection provisions of federal law and policy. In 1990, the Forest Service's "Ecosystem Management" initiative attempted to integrate the diverse statutory mandates governing its land and resource management activities.[247] The program also represented a somewhat tardy response to citizen concerns about the ecological effects and implications of the agency's own resource management activities. Concerns expressed by agency personnel had often been overlooked or ignored in the agency's earlier management plans. Environmentalists and scientists cautiously welcomed the changes, but agency operations continued to be perceived as inconsistent with scientific understanding and the legislative mandates for the management of the national for-

243. *See* HIRT *supra* note 38.

244. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3, p.51-52 (1996).

245. WILKINSON AND ANDERSON, *supra* note 37.

246. YAFFEE, *supra* note 9.

247. USFS Memo, *supra* note 8.

ests.[248] For these reasons, the implementation of ecosystem management in the Sierra thus far has proven unsuccessful in defusing resource conflicts.

Regardless of the promise of ecosystem management, public dissatisfaction and political and social activism over national forest management has continued. Heightened legal scrutiny of Forest Service decision-making has also continued. Citizen activists and interest groups are able to draw on specific elements of NFMA and its regulations, such as the requirement that planning protect populations of forest species, that lend support to their particular position.[249] The agency, on the other hand, generally must try to balance the operation of particular provisions with other goals within NFMA. In many instances, it has done so only to find that a decision will not meet legal or regulatory standards. Conflicting objectives, such as habitat conservation and commodity production, are both supported by elements within NFMA and other applicable laws.[250] To achieve these often divergent ends, the Forest Service promulgates policy intended to reconcile the conflicts within the framework of planning, conservation, and management. Absent strong criteria to defend its choices, attempts to balance competing objectives are vulnerable to legal challenges because they do not satisfy specific provisions of the law or regulations. This is the history of Forest Service actions with respect to the three species of spotted owls, although the specific objections were different in each instance.[251] If the agency's direction or its compromises display a lack of attention to legal or administrative mandates pertaining to environmental protection, the public and scientific scrutiny that these plans face quickly lead into opposition, administrative appeals, and lawsuits. The larger outcome of the NFMA processes—unintended by the Forest Service, but consistent with judicial interpretation of NFMA and NEPA— is that plans and management activities poised to have a substantial and often adverse impact on the ecosystem have been prevented from being fully implemented.[252]

248. Natural Resources Defense Council appeal to F. Dale Robertson regarding his January 13, 1993 Decision Notice (Mar. 1, 1993)(on file with the author).

249. *See* 16 U.S.C. § 1600 *et seq.* (1994).

250. Roger Sedjo, *Mission Impossible*, 97 J. OF FORESTRY 5, 13-14 (May 1999)

251. *See* YAFFEE, *supra* note 9.

252. CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS (1996).

The intense public attention focused on NFMA has been an understandable source of frustration to many Forest Service managers who face opposition in the planning process. Agency actions with environmental effects that did not comply with the intent of the law and its attendant regulations were bound to be carefully examined by opponents. Citizen activism, however, helped the forest planning process to function as a self-correcting mechanism, albeit a slow one, to remedy administrative errors.[253] Imperfect and unsatisfactory as this course may appear, it has had great and positive impact. From the point of view of implementing management plans and producing timber and other outputs, the effect may appear to be detrimental, but from the point of view of upholding and enforcing the provisions of the law, the operation of public activism has been beneficial and constructive.

The Forest Service's ongoing effort to change its policy to incorporate new scientific information on the California spotted owl is an example of the process at work. It is true that the agency made major policy changes in the Sierra only after Forest Service plans for continued high levels of timber harvest in the habitat of the northern spotted owl were blocked repeatedly in court. These actions made it clear that such policies would likely meet a similar fate in California. Irrespective of an ongoing search for solutions, the Forest Service has been unable to implement land and resource management plans that survive longer than a few years. The need for frequent revision of Forest Service policies during the recent decade is a reminder that the Forest Service has not successfully demonstrated a strategy to ensure long term sustainability of the natural resources and ecosystems in these forests, and that policy modifications are not yet complete.[254]

Producing land management plans that respond to current national forest management priorities in the Sierra Nevada —providing for habitat and species conservation while promoting fuels management and commodities production— continues to be a difficult technical problem. The conflicting views and priorities of federal, state, and other key public actors, as well as those of individuals and groups, naturally, complicate the process of achieving solutions. No proposal for managing the national forests of the Sierra Nevada thus far has led to a strategy that will

253. *See* YAFFEE, *supra* note 9.

254. *See* CALIFORNIA SPOTTED OWL FEDERAL ADVISORY COMMITTEE, Chapter 2, *supra* note 241; *see also* NRDC appeal , *supra* note 248.

demonstrably satisfy the ecological, socio-economic, political,[255] and legal criteria[256] by which these policies are judged. Recognition of the difficulty in integrating ecological, technical, and social concerns into a successful management plan was part of the motivation for the Sierra Nevada Ecosystem Project. The project's final report, however, was not designed to offer authoritative policy solutions, rather it was designed to raise the level of knowledge regarding the state of the region's resources and ecosystems and also to discuss the future effects of trends in force around the region. The fruits of the project, the scientific assessment and scenarios developed by the Science Team, now provide a wealth of scientific and social information that is proving useful as further environmental problem solving efforts proceed in the region.[257] Public concerns regarding the management and conservation of national forest ecosystems, however, cannot be resolved by the application of the findings of the SNEP Science Team and subsequent research alone.

The policy of conserving the California spotted owl and other species deliberately began to shift the focus of planning and management from commodities to conservation of ecosystem resources. NFMA's provisions for resource assessment and conservation called for planning based on resources and the capability of specific areas. As the agency fought to avoid the effects of a possible listing of the owl as a threatened or endangered species, the focus of planning and management became more detailed and more dependent on site specific information. The Forest Service's outlook began to evince a shift from an almost uniform consideration of the national forests to highly individualized consideration of the resource issues in a particular region. The environmental impact reporting requirements of NEPA were essentially given a second chance to operate. NFMA's provisions and other laws providing timber sales in the

255. *See* Andrea L. Hungerford, *Changing the Management of Public Land Forests: The Role of The Spotted Owl Injunctions*, 24 ENVTL L. 1395 (1994); *cf.* Victor M. Sher, *Travels With Stix: The Spotted Owl's Journey Through The Federal Courts*, 14 PUB. LAND L. REV. 41 (1993).

256. *See generally* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 1 (1996).

257. Sierra Nevada Framework Design Paper - Contexts and Commitments, Version 1.4, 11/18/98, U.S. Dep't Agric., U.S. Forest Service, Pacific Southwest Region and Pacific Southwest Research Station, (visited Apr. 12, 2000) <http://www.r5.fs.fed.us/sncf/framework/design_paper/design_paper_1.4.html>. *See also* <http://www.r5.fs.fed.us/sncf/framework/design_paper/overview.html>.

national forests remained in effect, but after environmentalists and scientific experts drew attention to the plight of the spotted owl, the emphasis on timber harvesting in these national forests disappeared. After completion of CASPO, SNEP, and subsequent studies, on the protection of the spotted owl, conservation of biological diversity, and providing for resource sustainability in the Sierra Nevada became the new watchwords of Forest Service planning.

Forest management activities in the national forests of the Sierra Nevada as of March 2000 remain subject to the "interim strategy" developed by the CASPO Technical Team, continuing the policies articulated in the decision notice accompanying the 1993 EA.[258] In January 1998, the Forest Service initiated the "Sierra Nevada Conservation Framework" to further revise its management policy in the region and the Modoc plateau.[259] The Forest Service sought to couple agency planning with a collaborative effort involving the public and other agencies to develop "a broad set of visions, goals, and activities planned for 11 national forests." An informal advisory group of representatives from other federal and state agencies also began meeting to help craft closer interagency collaboration and to suggest directions for additional future revisions to management plans. A draft EIS, technically an amendment to the land and resource plans of each national forest in the Sierra Nevada, is scheduled to be released for review and public comment in Spring 2000.[260] The new plan, incorporating existing ecosystem research from SNEP and other studies, and responding to the recommendations of the California Federal Advisory Committee, is intended to chart a new course for environmental stewardship in these national forests. The plan's modifications will have less effect on the timber industry than the preceding EA, due to the reduction in timber harvest already in place. Nevertheless, significant issues remain to be addressed, and further changes in land management practices are anticipated after the completion of a final EIS in Fall 2000. Another likely influence on the planning process is the possibility of additional changes in the status of national forests lands in the region. On April 15, 2000, President Clinton created a national

258. CAL OWL NOI, *supra* note 213.

259. Memorandum from the USDA Forest Service, *Sierra Nevada Conservation Framework* (Jan. 22, 1998) (on file with author).

260. Sierra Nevada EIS Timeline (visited Mar. 6, 2000) <http://www.r5.fs.fed.us/sncf/eis/eis_timeline.html>.

monument to confer additional protection on the Sequoia groves and surrounding lands within Sequoia National Forest.[261] Additionally, three separate administrative initiatives are likely to have moderate systemic effects on land allocation and management practices. The first of these is the Forest Service proposed policy to limit the construction of new roads.[262] A second policy now under consideration is aimed at protecting roadless areas in the national forests.[263] A third initiative is the pending revision of the NFMA planning regulations.[264]

Simultaneously, the status of the California spotted owl and its habitat remains under investigation. Research completed after the report of the technical team was released provides an indication that the population of spotted owl in the Sierra Nevada is continuing to decline. Two environmental groups, the Sierra Nevada Forest Protection Campaign and the Southwest Center for Biological Diversity, petitioned for such a review.[265] An examination of recent research on the owl and its habitat could result in a decision by the US Fish and Wildlife Service to review the spotted owl's status under the Endangered Species Act (ESA). If a review is conducted, the California species could one day be listed pursuant to the ESA as "threatened" or "endangered." Such a designation could require the Forest Service to make additional modifications to the planning initiative now underway for the national forests of the Sierra Nevada.[266]

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261. Edwin Chen, "Clinton Orders 328,000-acre Sequoia Monument, SAN FRANCISCO EXAMINER, Apr. 16, 2000, C-7.

262. *See* http://www.fs.fed.us/news/roads/index.shtml

263. *See* Roadless (visited Apr. 12, 2000) <http://roadless.fs.fed.us/>.

264. The current regulation is at 36 C.F.R. pt. 217 (2000). *See* NFMA Proposed Rule Notebook Table of Contents (visited Apr. 13, 2000) <http://www.fs.fed.us/forum/nepa/rule/>.

265. *See* SOUTHWEST CENTER FOR BIOLOGICAL DIVERSITY & SIERRA NEVADA FOREST PROTECTION CAMPAIGN, A PRELIMINARY REPORT ON THE STATUS OF THE CALIFORNIA SPOTTED OWL IN THE SIERRA NEVADA (June 21, 1999); Glen Martin, *A Petition to Help California Bird Endangered Status Sought for Kin of Northern Spotted Owl — Only 2,000 Left*, SAN FRAN. CHRON., Apr. 14, 2000; Tom Knudson, *Groups to Urge Legal Shield for California Spotted Owl*, THE SACRAMENTO BEE, June 23, 1999.

266. The spotted owl or another plant or animal species in the Sierra Nevada, if listed as a "threatened" or "endangered" species under the ESA, could act as a trump card, forcing agencies to reconsider land and resource uses to ensure that any activities are not injurious to the viability of these species.

D. *The Quincy Library Group*

Local and regional groups, both those with established roles and ad-hoc or unofficial groups, have rapidly proliferated in rural areas especially in the western United States.[267] Observation of watershed and ecosystem planning groups in the western United States reveals that environmental groups, industrial concerns and other commodity interests, and citizens of rural communities are all participating in these efforts. Recently, they have begun to figure prominently in discussions about resource policy. Some of the better known examples of these groups include the Applegate Partnership in Oregon, the Colorado River Headwaters Forum, the Klamath Bioregional Group, and in the Sierra, Feather River Coordinated Resource Management (CRM), and the Quincy Library Group ("QLG"). Many watershed-based or regional collaborative planning initiatives emerged after the apparent failure of traditional agency planning or regulation initiatives to achieve their intended objectives, or to do so in a manner acceptable to the public. Collaborative groups are generally made up of citizens who join together in an unofficial or semiofficial capacity to tackle resource or environmental issues. These groups are often regarded as the adversaries of public agencies. Watershed or regional groups naturally draw freely on the perspectives of their members. For this reason, they are regarded as unlikely to produce scientifically and legally sound proposals for resource management. Nevertheless, some of these groups have persevered. There has been a gradual, if grudging, recognition by public officials and resource agencies that locally based initiatives may speed implementation of ecosystem policies. One method by which groups are able to do this is by addressing whole environmental and regional economic issues.[268] Another is that local groups, unconstrained by the organizational parameters of public resource agencies, are often able to suggest imaginative methods to reallocate existing capital to effect pragmatic solutions.[269]

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267. NATURAL RESOURCE LAW CENTER, THE WATERSHED SOURCE BOOK, WATERSHED-BASED SOLUTIONS TO NATURAL RESOURCE PROBLEMS (Univ. of Colo. 1996).

268. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3, p.51 (1996).

269. *See* NORTHEASTERN CALIFORNIA ETHANOL MANUFACTURING FEASIBILITY STUDY, QUINCY LIBRARY GROUP, CALIFORNIA ENERGY COMMISSION, CALIFORNIA INSTITUTE OF FOOD AND AGRICULTURAL RESEARCH, PLUMAS CORPORATION, TSS

The Quincy Library Group, based in the northern Sierra Nevada, was originally formed in 1993. The Library Group is by no means the earliest of these groups, but arguably has been among the most successful in its ability to influence policy.[270] Thanks to controversies surrounding the scientific and environmental efficacy of its proposals,[271] it is also among the most celebrated and notorious.[272] The fact that CASPO decision in 1993 led to swift and significant changes in timber harvesting policies is a key to understanding the objectives and results of the QLG. CASPO-related policies meant dramatically lower timber harvest levels. As a result, there were rancorous debates about the effect of the policy change and related issues.[273] After the timber harvest reductions went into effect, timber industry interests, who appeared to have lost the battle, believed that they might still win the war. Foresters supporting the industry emphasized the efficacy of clearcutting and the harvest of old growth trees. Timber interests and their supporters attempted to justify the harvest of larger trees as a vehicle to continue brush control and otherwise facilitate better fuels management. On the practical side, however, the CASPO decision temporarily ended legal and administrative controversies over clearcutting and harvesting of large trees in the national forests of the Sierra Nevada.

The effect of CASPO was to eliminate clearcutting and the harvesting of old growth and other large trees in adjacent national forests for the foreseeable future. Under an old formula, federal law mandates that the Forest Service distribute 25 percent of its gross receipts to the counties of origin.[274] In communities like Quincy, the likely economic effects of the CASPO initiative were anticipated to be reductions in local government revenues, school financing, local employment, and business activ-

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CONSULTANTS, NATIONAL RENEWABLE ENERGY LABORATORY (Nov. 1997) <http://www.qlg.org/pub/act_acp/ethanol/feasibility.htm> [hereinafter ETHANOL PLAN].

270. The QLG, unlike many groups, secured legislative support for its proposals, and also successfully lobbied Congress for appropriations to ensure the project was carried out. *See* <http://www.qlg.org/> (visited Apr. 12, 2000).

271. For an overview, *see* <http://www.qlg.org/> (visited Apr. 12, 2000).

272. *See* Timothy Duane, *Community Participation in Ecosystem Management*, 24 ECOLOGY L.Q. 771, 771-97 (1998). For an insider's perspective, *see also*, GEORGE TERHUNE, THE QUINCY LIBRARY GROUP, A CASE STUDY (1999).

273. *See* Duane, *supra* note 272, at 79.

274. National Forest Revenue Act of 1908, 16 U.S.C. 500. When originally passed this act required the federal government to give 5 percent of revenues from national forests to the counties in which the forests were located. In 1913 the percentage was increased to the current level of 25 percent of national forest revenues.

ity.[275] The policy change created or highlighted many social, economic and resource management issues; e.g., social well-being of the local community, employment for area residents, financing for local government and schools.[276] In light of the resource management constraints imposed by CASPO-related policies, traditional methods of financing much of the practical work of forest management, were no longer available.

With the decline in timber harvesting, the Forest Service reduced its staff; it also lost funding it had obtained directly from timber sale receipts, and some of the organizational flexibility inherent in the timber sale program.[277] The staff and revenue reduction limited many options for on-the-ground activities, including fuels management. In addition, pending the completion of further research on the spotted owl, the pace of the agency's management activities had slowed dramatically.[278] Removal of many of the major points of controversy in conservation and resource management, such as choices about the fate of old growth trees and of the nature and level of timber harvesting, did not dispose of many other resource-related controversies.

Outside the agency, many believed that finding solutions to resource management and community welfare required a new approach and along with it, new methods of analysis, planning, and funding. This was particularly true for those items like fuels management that had in the past been addressed either directly or indirectly as a function of the Forest Service's timber harvesting program. The CASPO decision and its aftermath created an opportunity to build a consensus for new methods of resource conservation and management.

In Quincy, even before the CASPO decision was announced, three individuals representing different sides of the debate began

275. Michael Jackson and Tom Nelson, Address at Univ. of California, Berkeley (Mar. 21 1996).

276. *Id. See also* Jonathan Kusel, *Well-Being in Forest-Dependent Communities, Part I: A New Approach*; in CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 12, p.361-374; Sam C. Doak and Jonathan Kusel *Well-Being in Forest-Dependent Communities, Part II: A Social Assessment Focus* in CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 13, p.375-402 (1996).

277. *See* PIP TEAM REPORT, *supra* note 211, at Ch. 3, p.25-27.

278. Herger-Feinstein Quincy Library Group Forest Recovery Act, Pub.L. No. 105-277, Div. A, § 101(e), 112 Stat. 2681 (1998) [hereinafter Herger-Feinstein].

discussions to determine whether there were aspects of resource management and forest conservation upon which they could agree.[279] Bill Coates, then a Plumas County Supervisor; Michael Jackson, a local attorney and environmentalist, and Tom Nelson, a professional forester employed by Sierra Pacific Industries (the largest timber company in the state and owner of a local lumber mill) participated in the first meetings that were originally held in the Quincy Public Library. As the discussions continued, the group expanded. The QLG focused its attention on developing policy alternatives for the Plumas National Forest, the Lassen National Forest, and the Sierraville Ranger District of the Tahoe National Forest.[280] It is now comprised of local citizens and others with a variety of experience and perspectives, including certain members of the local environmental community and representatives of timber interests.

In the aftermath of CASPO, various agencies, individuals and interests struggled together to make adjustments to the new policy. The QLG held a series of discussions in an attempt to reach agreement on methods to manage and restore the forest ecosystem, and to sustain the community and the economy. The objective was to develop and lobby for the implementation of a management plan that incorporated scientific information and otherwise complied with environmental laws such as NEPA, ESA, and NFMA.

The QLG presented the Forest Service with proposals for revisions of the current land management plans. Their ideas were designed to promote ecosystem and local economic sustainability. These plans emphasized the preservation of larger trees, harvesting of small diameter trees to supply a local mill, fuels management, and the restoration of certain habitats.[281] After receiving support from President Clinton, Vice President Gore, state and federal lawmakers in both major political parties, as well as state and local officials, the QLG secured funding for Forest Service programs to implement a pilot project on an experimental basis was secured. When the Forest Service remained unreceptive to its ideas, the QLG made a decision to pursue legislation in Congress that would force the Forest Service to implement the group's recommendations. Fortuitously, members of

279. TED BERNARD AND JORA YOUNG, THE ECOLOGY OF HOPE, 157 (1997).

280. See QUINCY LIBRARY GROUP COMMUNITY STABILITY PROPOSAL, (visited Apr. 14, 2000) <http://www.qlg.org/pub/agree/comstab.htm>.

281. *See* TERHUNE supra note 272, at 8.

the group were able to draw on extraordinarily good connections to elected officials in both the Democratic and Republican parties.

Many national and regional environmental groups were concerned about the QLG's proposals and the legislation. The concern was due in part to opposition to specific aspects of the resource management plan. The environmental groups were also concerned about establishing what they regarded as an undesirable precedent that effectively allowed Forest Service planning prerogatives and environmental protection responsibilities to be arrogated to local groups.[282] The QLG, because it had formed outside of federal, state, or local government, was not subject to requirements of public disclosure or accountability. Environmental leaders argued that such arrangements could effectively transfer management authority to local communities. Further, this kind of arrangement had the potential to reverse environmental gains won as a result of hard fought legal battles.[283] Environmental leaders expressed concerned about the consequences of what they to be perceived devolution of decision-making authority from the agency. Despite the fact that the Forest Service retained responsibility for making resource management decisions in Quincy, environmentalists raised these concerns repeatedly. Environmental groups made opposition to the QLG legislation a focal point of their agendas and public campaigns.[284] Although the arguments against the QLG proposal received serious consideration during the debate over the legislation in Congress, few senators and members of Congress voted against the bill.[285] Despite substantial opposition from national and regional environmental groups, after a series of delays in Congress, the legislation, known as" the Herger-Feinstein Quincy Library Group Forest Recovery Act was enacted and signed into law as part of the appropriations legislation in October 1998.[286]

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282. *See* Duane, *supra* note 272, at 792.

283. Michael McCloskey, *The Skeptic: Collaboration Has Its Limits*, HIGH COUNTRY NEWS, May 13, 1996, at 28 [hereinafter *The Skeptic*].

284. *See* The Diversity of Perspectives on the QLG (visited Apr. 14, 2000) <http://www.qlg.org/pub/contents/perspectives.htm>.

285. The original legislation passed overwhelmingly in the U.S. House of Representatives. In the Senate, legislative "holds" placed by members of the Senate prevented the legislation from coming to the floor for a vote. Eventually the QLG bill was incorporated into the 1999 Dep't of the Interior and Related Agencies Appropriations Act. *See* Herger-Feinstein, *supra* note 276.

286. Herger-Feinstein, *supra* note 278.

The QLG legislation initiated a separate planning process for the Plumas and Lassen national forests and the Sierraville Ranger District of the Tahoe National Forest, directing the Forest Service to develop a plan to implement the QLG proposal for a period of five years.[287] Preparation of the EIS on an initial "Pilot Project" began in December 1998. A draft EIS was released for review in early summer 1999. After a period for public comment, the FEIS[288] and Record of Decision (ROD) were released in August 1999.[289] Despite vocal opposition from many environmental groups, the Forest Service approved the QLG pilot project, but the final decision provided for the possibility of slight modifications to permit additional protection for owl habitat.[290]

The future of the Quincy Library Group's proposal remains somewhat uncertain. The Sierra Nevada Conservation Framework, the current iteration of Forest Service planning underway in the region will set new guidelines for the conservation of spotted owl habitat. This in turn will determine whether the specifics of the QLG plan meet the requirements of the ESA, NFMA and NEPA. The Forest Service's decision, including its modifications to the QLG plan, has been appealed on different grounds by parties on opposing sides of the issue, including the QLG and the Sierra Nevada Forest Protection Campaign, a regional environmental group.[291] Additionally, if the United States Fish and Wildlife Service determines that the survival of the California spotted owl is in doubt, there is a distinct possibility that the species or selected populations may be listed pursuant to the ESA as a "threatened" or "endangered" species. This may require additional modifications to national forest planning in the Sierra Nevada and to the QLG plan.[292]

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287. *See* Quincy Library Group (visited Apr. 14, 2000) <http://www.qlg.org>.

288. U. S. FOREST SERVICE, U.S. DEP'T OF AGRIGCULTURE, FINAL ENVIRONMENTAL IMPACT STATEMENT: HERGER-FEINSTEIN QUINCY LIBRARY GROUP FOREST RECOVERY ACT (August 20, 1999)[hereinafter HFQLGEIS].

289. *Id.*

290. *Id.*

291. *Id. See also* Appeal by the Quincy Library Group of the Final EIS and Record of Decision for the Herger-Feinstein Quincy Library Group Forest Recovery Act, November 4. 1999 (visited March 5, 2000) <http://www.qlg.org/pub/act/appeal.htm> ; Sierra Nevada Forest Protection Campaign, *Conservationists Appeal Quincy Decision* (visited Oct. 18, 1999) <http://www.sierraforests.org/html/updates101899.html>.

292. The spotted owl, or another plant or animal species in the Sierra Nevada, if listed as a "threatened" or "endangered" species under the ESA, could act as a trump card over agency planning (including the area covered by the Quincy Library Group).

Irrespective of the eventual outcome, several aspects of the Library Group's initiative differ dramatically from traditional modes of Forest Service planning, conservation and management. First, the diverse experiences of the QLG's founders and members in the forest planning process, and in resource and environmental issues in the region, as well as their knowledge of each other's effectiveness as adversaries, were important ingredients in the group's formation. They brought both experience and pragmatism to the discussion table.[293]

Second, the QLG built a local coalition entirely outside of the ordinary channels of public involvement in the NFMA planning process. Initial meetings actively excluded Forest Service personnel, although this has now changed.[294] The Quincy Library Group was – and continues to be – guided by the direct involvement of the individuals represented at the Group's inception. As a result, some national and local interests, particularly environmental groups, believe their voices have been excluded from the opportunity to influence the group's decisions,[295] despite the presence of several ardent environmentalists on the QLG's Steering Committee. Local grazing interests also expressed their irritation that the QLG has been slow to respond to their concerns.[296] In contrast, Sierra Pacific Industries, the timber company, has been an important player in the group. Efforts by other local partnerships, on the other hand, have kept those players with key economic interests in the outcome of planning out of their groups, and away from the planning process.[297] For the QLG, however, such involvement is an essential if implicit ingredient, especially since the plans developed by the Library Group are meant, among other things, to keep the local mill in operation to treat a particular area. With the advent of the CASPO rules, however, harvesting of large trees in spotted owl territory was largely restricted,[298] thus reducing significantly the value of timber sales and making it far more difficult to address fuels

293. *See* TERHUNE, *supra* note 272, at 4.

294. Forest Service staff, as well as staff from other agencies regularly attend Library Group meetings and offer information and reports on various issues to those present.

295. David Edelson, Address at Univ. of California, Berkeley (Feb. 1997).

296. *See* TERHUNE, *supra* note 272, at 10.

297. *See, e.g.,* Michelle Nijhuis, *Flagstaff Searches for its Forest Future*, HIGH COUNTRY NEWS, Mar. 1, 1999, at 8-12.

298. The CASPO decision restricted harvesting in spotted owl habitat to trees less than 30 inches in diameter. *See* PIP TEAM REPORT, *supra* note 211, at 4-8 to 4- 12.

management concerns. Despite the Forest Service's efforts to find creative ways to address the fuels management issues, little was being done to reduce fuels accumulations[299] and fire danger in the forests.[300]

After a forest fire burned more than 44,000 acres in the area near Quincy in the summer of 1994, the community became particularly concerned about fire danger.[301] The QLG rapidly discovered that lack of fuels management was more than a resource management issue. Drawing on the SNEP report and other sources, the QLG sought to ensure that fuels management projects would be designed to return fire to a more natural role in the forest ecosystem. The ecological concerns, however, were not the entire story. As suggested in the SNEP report, the QLG examined the entire process of fuels management and came up with ideas to respond to financial constraints and to improve the economics aspects of fuels treatment in the area. The group's pragmatism expressed itself in an entrepreneurial impulse that includes a very serious effort to locate and build an ethanol plant in the area. The plant would be powered by brush and slash gathered in local fuels management operations. The idea behind the ethanol plant was to reduce the overall cost of fuels management.[302] If the plant could be developed and located in the region, it would reduce the cost of disposing of the fuels removed from forested areas. Such a development would increase the feasibility of fuels management programs. Reducing the cost would facilitate their implementation. Application of these programs over greater areas of the landscape would increase the probability of achieving the objective of eventually reducing the damage caused by fires.

The QLG's proposals built on the creativity, knowledge and energy of its members. The QLG also relies on the credibility and the successes of a number of other groups in the area in designing environmental management and restoration projects. Most notably, these groups include the Plumas Corporation, the local economic development agency, and Feather River Coordinated Resource Management (CRM), a local collaborative plan-

299. Art Mackey, *Fire, Fuels, Air Quality and Energy in* WORKING PAPER CLEVELAND FIRE AREA RECOVERY PROJECT ELDORADO NATIONAL FOREST, 1-6 (June 1993) (on file with the author).

300. CALIFORNIA FIRE PLAN, *supra* note 216.

301. Ed Marston, *The Timber Wars Evolve into a Divisive Attempt at Peace*, HIGH COUNTRY NEWS, Sept. 29, 1997.

302. *See* ETHANOL PLAN, *supra* note 269; TERHUNE, *supra* note 272.

ning group, whose members include representatives from state, federal and local agencies, and local interest groups.[303] Both of these groups long predate the QLG. The QLG has drawn freely on the expertise of its individual members and the staff in public agencies, including the Forest Service, and CDF.

The QLG's initiative in policy design, with its attention to environmental issues, local economic concerns, and operational aspects of management prescriptions, remains controversial and experimental. Some of these developments appear to be productive. At the same time, a clear majority of the environmental groups continue to be extremely dissatisfied with the QLG initiative and policy to date.[304] Even where environmentalists can and do appreciate specific and limited aspects of the proposals, they continue to regard the QLG and its overall objectives with great suspicion, if not outright hostility. In spite of the QLG's progress thus far, environmental interests continue to challenge the scientific assumptions and the ecological merit of the group's proposals.[305] In any case, the experience deserves attention, especially in contrast to the limitations inherent in the Forest Service treatment of the same issues. In light of the attention already focused on the QLG plan, it is almost assured that the plan and its associated projects will be monitored and evaluated by a variety of interests. The purpose of the evaluation is not only to measure the plan's ecological impact, but also the implications of QLG's approach for future ecosystem planning and management.

Since the enactment of the Quincy Library Group legislation, interest and involvement has remained at a high level. The QLG and other interests revolving in and around the Library Group are still engaged in a struggle to advance their own objectives, and the outcome of the Quincy plan and process is far from certain. It is worth recalling that the QLG and other non-conventional approaches to forest planning and management in the region all emerged after the possibility of a legal challenge caused the Forest Service to reconsider its land management plans. The CASPO inspired policies introduced in 1993 were the

303. Jonathan Kusel, *Coordinated Resource Management, in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 3, Ch. 24, p.1065 (1996).

304. *See, e.g.,* Sierra Nevada Forest Protection Program (visited Apr. 14, 2000) <http://www.sierraforests.org/index.html>.

305. Interview with David Edelson, Natural Resource Defense Council, San Francisco, California (Jan. 25, 2000).

result. Despite the enactment of the QLG legislation, the Quincy Library Group, environmental groups, the Forest Service and others remain constrained both legally and politically by that result. In Quincy, the participants and stake-holders are engaged in a still-unfolding "bargaining in the shadow of the law,"[306] wherein the parties bargain and negotiate agreements based on their understanding of what results the law will sanction. Although the quest for solutions is subject to many constraints, there are clearly a multitude of unexplored opportunities for creative and practical approaches to many aspects of ecosystem management and conservation.

E. *National Forests Planning and Management in the Year 2000 and Beyond*

1. Contemporary Management Setting

Over the past forty years, the Sierra Nevada has undergone remarkable changes. While great expanses of the Sierra Nevada remain relatively wild and undeveloped, the rest of the region has experienced major demographic, economic, and social changes, all of which have implications for resource management.[307] Four transformative and interactive forces are at work, reshaping the relationship between people and the natural environment of the region. These forces are discussed in the *Final Report Of The Sierra Nevada Ecosystem Project.*[308] A brief summary follows:

- Continuing population growth and changing patterns of human settlement and development:

  Development of several kinds- urban, exurban, commercial and recreational- directly and indirectly affects ecosystem status and health and also contributes to institutional change. Population growth and development have resulted in more people visiting and settling in the region, increasing the demand for governmental and other services. It has also

306. *See* Robert H. Mnookin and Lewis Kornhauser, *Bargaining In The Shadow Of The Law*, 88 YALE L.J. 5, 950 (1979).

307. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 2, p.36-40 (1996).

308. *Id.* at Chs. 3 and 11.

increased the diversity of values and issues influencing environmental policy and governance.[309]

- Capitalization of the costs of ecosystem maintenance and environmental risk:

  Historically, markets developed in timber and other natural resources that emerged as commodities, however, markets for the range of ecosystem resources are largely undeveloped, resulting in a dearth of capital investment in the natural systems in the Sierra. As the region shifts away from an extractive economy, there has been a gradual recognition of a need for new sources of funding to cover the costs of ecosystem maintenance and restoration.[310]

- Governmental coordination and efficiency:

  Examination of the current institutional arrangements for ecosystem management reveals certain gaps:
  (a) Jurisdictions and private land holdings seldom conform to watershed or ecosystems boundaries.
  (b) Overlapping jurisdictions result in expensive and inefficient delivery of public programs.
  (c) Agency appropriations, designed to support production of timber and other commodities, supply substantially smaller amounts for administration of non-consumptive uses.
  Intergovernmental and interagency cooperation is beginning to reshape certain sectors of resource administration, such as fire fighting, but many other areas remain inefficient. Some governments and agencies resist the drive for coordination because they seek to avoid the loss of resources under their control. Increasingly, however, ecological approaches to natural resources management are accompanied by a need to maximize the effectiveness of agency expenditures.

- Citizen activism and the institutional response:

  People who live in the region and others with extensive knowledge about the Sierra Nevada are important sources of human capital. Grass-roots activism is a formidable ingre-

309. *Id. See also* TIMOTHY DUANE, SHAPING THE SIERRA: NATURE, CULTURE, AND CONFLICT IN THE CHANGING WEST (1999).

310. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3, p.51 (1996).

> dient in policy formation.[311] Activism influences, challenges, redirects, and, in some cases, may even replace resource management institutions. Citizen involvement provides a wealth of information about the environmental conditions of the Sierra. Activists and others also monitor resource-related activities, and observe and publicize actions by public officials and agencies.[312]

These social, economic, and political forces create a unique mixture of concerns and opportunities in the Sierra Nevada. The Forest Service, despite considerable expertise and technical proficiency, has not been able to fully respond to the effects of these four forces. In critical areas, legislative and administrative institutions do not allow the Forest Service sufficient flexibility to account for these forces in policy. In other instances, legal rules and agency tradition has not encouraged the kind of initiative or leadership required to utilize what room for cooperation does exist.[313] As a result, the agency generally is not able to take advantage of the dynamic aspect of the region, even where the effect of these forces apparently would provide support for aspects of the Forest Service's mission and objectives. The national forests are inextricably bound to the rest of the Sierra region. Naturally, planning and resource use on these lands is heavily influenced by changes in population, human settlement, use and activism. Failing to take these factors into account when making policy leads to a risk of developing policy alternatives that are outmoded as soon as they are promulgated, or fail to respond to the concerns of the region.

2. Rethinking the Forest Service's Approach to Ecosystem Management

The extensive NFMA land management planning process has not succeeded in providing durable management guidelines for the national forests. In order to avoid repeating the errors of earlier planning efforts, fundamental questions about the process need to be raised. Scientific assessment of the natural resources of the Sierra Nevada is now of central importance as the basis for planning and managing the region's national forests. Scientific

311. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 20 (1996).

312. *Id.*

313. *Id.*

knowledge will assist the public and decision-makers in understanding the issues and choices involved in resource management and stewardship. Improving the state of scientific knowledge and its utilization in planning, however, is not sufficient to move the planning and management of national forest lands in the Sierra Nevada forward. The reports of the California Spotted Owl Federal Advisory Committee[314] and the CFEISRC focused on possible deficiencies of the California Spotted Owl RDEIS.[315] The scientific reviews can provide a guide that may ultimately help to produce legally defensible "scientific management" for the national forests. Examining the scientific adequacy of planning proposals is necessary to ensure the management alternatives are consistent with scientific understanding, but it is not the only aspect of the process that needs attention.[316] Based on this information, Forest Service land management planning may narrow the management issues in contention, but a multitude of other factors — social, economic and institutional — overlay the biological systems of the Sierra Nevada and exert powerful influences on resource management.

Only a portion of the issues plaguing policy development and implementation in the Sierra region pertain to scientific controversies. Even where differences over science are important components of the disputes, often what lies at the heart of the argument is not solely a disagreement over science. The dispute may have its root in a different set of values and priorities, or the basic desire to develop, preserve, or restore a particular landscape, resource or ecosystem.[317] Many controversial matters cannot be resolved through better understanding of the scientific aspects in controversy. Equally, repeated efforts to resolve outstanding resource management controversies have not ended conflict over the conservation and management of ecosystems and associated resources in the Sierra. A further period of policy instability or stalemate probably lies ahead.

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314. U.S. DEP'T AGRIC., FINAL REPORT OF THE CALIFORNIA SPOTTED OWL FEDERAL ADVISORY COMMITTEE (1997).

315. *See* RDEIS, *supra* note 235.

316. Scientific research has played a central role of in transforming the natural resource policy of the region, but the application of scientific information alone doesn't solve problems. The findings of the reports, the scientific information adduced elsewhere, clearly valuable ingredients in the policy process, do not by themselves move the national forests of the Sierra region significantly closer to an acceptable management scheme.

317. REED F. NOSS AND ALLEN COOPERRIDER, *Saving Nature's Legacy*, PROTECTING AND RESTORING BIOLOGICAL DIVERSITY 12-21 (1994).

For planning to translate into workable solutions to real management issues, two other sets of issues must be addressed: implementation, and the future purposes and management objectives of the national forests. Both issues lie primarily outside the realm of science, but are of key importance if planning is to more closely provide rationale and methods for long term management of these lands. Tackling these issues will be difficult, but essential if the present round of planning is to lead to the creation of a stable environment for conservation and management.

Out of frustration with the uncertainty of the NFMA planning process, legislative proposals appear as a means to abridge the planning process, or to circumvent environmental objections to agency proposals.[318] By providing clearer direction, and either shortening the planning process or curtailing opportunities for administrative appeals, such proposals appear to provide easy routes to implementing a management plan. Certainly such efforts can reduce or nullify the immediate effects of public opposition to resource management activities. In the long term, however, this approach may prove problematic.[319] Ignoring scientific concerns, as well as opportunities for public deliberation about local variations in the plans, simultaneously risks failing to remedy the problems while engendering additional opposition to agency plans and resource management. Implementing management plans is an important objective, but synoptic legislative "fixes" applied to existing plans clearly have the potential to ignore scientific concerns and the value of an incremental approach able to account for changes in scientific understanding and economic conditions. Public deliberation over the merits of land management plans is also important; without a highly publicized planning process leading up to the adoption of the plan, many individuals who have great interest in the area and who are affected by the plan will feel themselves left out. Accordingly, they will have little reason to offer support or allegiance to these management programs.

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318. *See, e.g.*, 1995 Rescissions Act (Timber Salvage Rider), Pub.L. No. 104-19, 109 Stat. 240 (1995), *as amended* Pub.L. No. 104-134, 110 Stat. 1321-202 (1996); *California Spotted Owl Interim Protection Act of 1998,* H.R. 3467, 105th Cong. (1998); *Granite Watershed Enhancement and Protection Act of 1998,* H.R. 2886, 105th Cong. (1998).

319. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3, p.51 (1996).

The Forest Service may be commended for the intention to proceed in good faith, and for its apparent openness in the current assessment and planning process, and in the development of the Sierra Nevada Conservation Framework. One may reasonably assume that the agency will do its best to remedy any problems that prevented full consideration of scientific information. By embarking on this course, the Forest Service will respond to many of the criticisms of the RDEIS. This may provide a measure of reassurance to those who criticized earlier Forest Service plans. Widespread dissatisfaction with the nature of past land management planning and its results in the Sierra Nevada, however, was not solely due to criticism of the agency's application of scientific information. The process itself, and the agency's capacity to deliver some of the necessary management changes, were also identified as problems. Several recent examinations of state and federal agency responsibilities and operations in region suggest that the region's environmental attributes and its socioeconomic setting are so distinctive that organizational reform is desirable.[320] Despite extensive research and far ranging discussions on the question of scientific and technical improvements to ecosystem stewardship, comparatively scant attention has been given to the institutional aspects of the problems that resource planning and administration face on public land in the region. Until these issues are addressed, the policy process faces many of the same obstacles that have plagued prior land management planning processes.

3. Moving Ahead: Program Development, Planning, and Implementation

To move policy forward, it is worth considering whether the current institutional structures for planning and management can produce policy and management that respond to changes in scientific knowledge, ecological condition, and social concerns. In the past, the Forest Service proposed plans and administered lands and resources for which it had primary responsibility, consistent with the legislative purposes for which the national forests

320. For a discussion of institutional and organizational reforms aimed at improving environmental management in the region, *see* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS, and CALIFORNIA FIRE PLAN, *infra*.

had been established.[321] Nominally, the same arrangement appears to apply today. NFMA calls for the "multiple use and sustained yield"[322] of forest resources. More than a decade of land management planning has clearly led toward a new and very different equilibrium between environmental protection and commodity production than the one that previously existed. Over the past ten years, the Forest Service largely functions as a quasi-regulator of land and resource uses on these public forests. This is in juxtaposition to its previous role, in which it administered opportunities for the use of public land and resources. The difference may appear subtle, but it is significant. "Sustained yield," with its twin emphases on conservation and use, remains part of the legal standard, but achieving ecological sustainablilty of forest resources, with little or no emphasis on consumptive resource uses, has become the aspirational objective of Forest Service management.[323]

Current management concerns and opportunities are driven by complicated environmental issues, such as threatened and endangered species and cumulative impacts on watersheds. Responses to these issues are determined by laws (such as NEPA, NFMA, ESA, the Clean Water Act) and attendant administrative regula-

321. *See, e.g.,* United States v. New Mexico, 438 U.S. 696, 707 n.14 (1978). In Footnote 14, the Forest Service's position can be seen. In this footnote, the Court in an opinion written by Justice Rehnquist noted:

> The Government notes that the Act forbids the establishment of national forests except "to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber," and argues from this wording that "improvement" and "protection" of the forests form a third and separate purpose of the national forest system. A close examination of the language of the Act, however, reveals that Congress only intended national forests to be established for two purposes. Forests would be created only "to improve and protect the forest within the boundaries," or, in other words, "for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber."
>
> This reading of the Act is confirmed by its legislative history. Nothing in the legislative history suggests that Congress intended national forests to be established for three purposes, one of which would be extremely broad. Indeed, it is inconceivable that a Congress which was primarily concerned with limiting the President's power to reserve the forest lands of the West would provide for the creation of forests merely "to improve and protect the forest within the boundaries;" forests would be reserved for their improvement and protection, but only to serve the purposes of timber protection and favorable water supply.

Id. at 708.

322. 16 U.S.C. § 1604 (e)(1) (1994).

323. Michael Dombeck, *A Gradual Unfolding of a National Purpose: A Natural Resource Agenda for the 21st Century,* Address to Forest Service Employees (Mar. 2, 1998).

tions that intentionally restrict agency discretion in certain matters without regard to the impact this may have on the agency's other missions. The result is that Forest Service decision-makers often do not exercise authority commensurate with the tasks the agency is called upon to perform. In other cases, the Forest Service does not possess the resources or organizational capacity adequate to accomplish these objectives.

The problems the agency faces are increasingly complicated and require sophisticated solutions that must draw on detailed social, economic, and technical analyses. Without adequate necessary information, there can be little expectation that planning will develop conservation and management projects that are economically feasible as well as scientifically sound. Yet the Forest Service, under NFMA and NEPA, is obligated to respond to changing conditions and information.[324] The agency must ensure that management actions correctly conform to a sizable burden of laws and regulations. Under the present statutory framework, the Forest Service is empowered to select management schemes that incorporate scientific information into management, but this does not ensure that the agency will be able to accomplish what is required for successful policy implementation. As a result, Forest Service decision-makers, far from functioning as stewards of the land, have often found their energy and prerogatives almost entirely consumed by the need to react to national and regional direction on how to respond to local conditions. Instead of being empowered to develop and implement a positive vision of resource stewardship and management, the agency's planning function is increasingly confined to outlining resource management prescriptions. as opposed to being able to operate pragmatically to speed implementation of plans and projects. Of the planning alternatives developed by the agency to respond to a given situation, predictably, nearly all appeal to certain segments of the public and provoke opposition from others. Opposition to major agency planning initiatives thus seems foreordained. The Forest Service is no longer in the role of leader, thus it is no longer able to propose and implement a positive vision of management. Rather, it is reduced to damage control and responding to critics.

The institutional legacy of the Forest Service, as, *inter alia*, a provider of timber, made the agency slow to respond to scientific

324. NFMA requires an update every ten to fifteen years or as conditions change. *See* 16 U.S.C. § 1604 (1994).

concerns that came to light during the NFMA planning process. By the 1990s, critics made their voices heard and the agency was forced to respond rapidly to new scientific information. Now the Forest Service is struggling to develop policies incorporating the scientific information that are practical and cost-effective as well. When compared with the citizen process underway in Quincy, the Forest Service appears unable to offer policy alternatives that address the practical economic and social context of major national forest management issues, such as fuels management, as comprehensively as is being done at the local level. In part, this is due the agency's caution over the scientific uncertainty regarding biological and resource issues, but it is also due to a lack of capacity for which the agency can not be faulted. The Forest Service operates under statutory authority that does not treat environmental, economic, and social issues in a coordinated fashion, let alone ensure that the chosen methods are practical and that the desired results will be achieved.[325]

The operation of NFMA, NEPA, and ESA have increasingly confined the Forest Service to applying scientific information to environmental and resource management concerns. Despite the change in the functional role of the agency, there has not been commensurate legislative or financial support for the practical aspects of this shift.[326] Theoretically, this approach to managing national forests and conserving resources is valid; practically, however, the legacy of conflicting objectives pertaining to the development and use of natural resource commodities within the national forests is extremely problematic. The lack of adequate funding for ecologically sensitive natural resource management is also problematic, and restricts the ability of the agency to accomplish its objectives. This is especially apparent when existing measures do not address variable local conditions. For example, many of the new prescriptions for fuels management, riparian restoration, etc., bring little or no revenue and are expensive to undertake. Thus, the implementation of these alternatives depends on budgetary appropriations beyond the agency's control. However, the core of the issue regarding the degree to which resource management plans, projects, and prescriptions will in

325. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 1, Ch. 3, p.51-53 (1996).

326. *Id.*

fact be able to achieve the desired objective, is not fully addressed during the public review of plans and the NEPA process.

To compound the problem, until recently there has been comparatively little support within the Forest Service for innovative programs that could assist the national forests to reach environmental quality goals more efficiently. Legal, economic and financial obstacles are formidable. Issues pertaining to program design and implementation also include improving interagency cooperation and enabling collaborative planning and management. To its credit, the Forest Service is now trying to redress the deficiency in prior agency decision-making and administration.[327] Nevertheless, it is instructive to note that many current initiatives sponsored by the Forest Service and other groups to foster ecologically sensitive management suggest that a cooperative approach is critical, both to the success of these efforts, and to the solution of a variety of national forest policy issues.[328] Considering the gap between the ideal of collaboration and the existing legal and financial structure that still precludes collaborative decision-making is essential if the objective of improving the stewardship of the national forests is to be taken seriously.

Accordingly, it has been difficult for the agency to effectively address the underlying ecological issues highlighted by the NEPA process. If existing institutions cannot do so, the result will be additional conflicts over land management planning in the Sierra. Logically, this suggests that the organization and institutional structure of the national forests should be examined to determine whether they are appropriate to the broader objectives established in the law. Unresponsive institutions can neither resolve significant issues concerning national forest management issues, nor effectively address underlying ecological concerns. Prudence suggests that such organizational issues should be assessed to see if resource management and stewardship functions could be improved. Institutional arrangements which are less than optimal may need to be redesigned or replaced.

The quasi-regulatory approach of the Forest Service today contrasts with the type of ends-oriented organization that the agency once aspired to be (and was, for much of its history).[329] Society clearly no longer wishes the Forest Service to accomplish the same objectives of decades past, but it desires more than an end-

327. *Supra* note 257.
328. *See* Dombeck, *supra* note 323.
329. *See* HAYS *supra* note 1; CLARKE and McCOOL *supra* note 3.

less planning process with outcomes that cannot be implemented because the institutional structures cannot or will not support them.[330] If the present policy objective is to improve the development and delivery of ecosystem and resource stewardship, employing a more proactive organizational approach is essential. This kind of process would not only emphasize planning and assessment but also the actual accomplishment of the objectives that have been set out. In an organization with a more anticipatory approach to resource management and conservation, decisions would be made only after the implications of various choices have been fully considered. This kind of consideration would evaluate proposals not just in terms of their scientific implications, but also in terms of how likely it is that policy proposals will be successfully implemented and their objectives achieved. The agency's apparent lack of systematic attention to the result is why the ends-oriented approach that local collaborative groups have adopted has become increasingly compelling to many interested parties.

Resource policies often depend on factors which the Forest Service is not required —or permitted— to consider in the land management planning process. Organizational decision-making needs to be able to recognize and respond to changing conditions if the agency is to be effective in providing for resource management and stewardship in these areas. These factors include: flexibility of agency response, ability to respond quickly to new information or changing conditions, economic feasibility of management proposals, availability of funding, and collaborative efforts.[331] Certainly many of these factors are beyond the control of the Forest Service. Nevertheless, being able to adjust to major changes in funding and economic conditions is essential, especially when management plans include relatively expensive fuel management prescriptions.

Recognition of the gaps in Forest Service authority and its capacity to respond to these problems could be construed as support for an argument to expand the agency's authority or to create a comprehensive, integrated, inter-agency resource policy for the region. This latter policy would be roughly equivalent in

330. *See e.g.*, The Committee of Scientists Final Report, (visited December 21, 1999) <http://www.fs.fed.us/news/science/cos-ch1pt2.pdf> p.3.

331. *See* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS (1996).

scope to the kind of "industrial policy," operating in Japan and elsewhere.[332] It would accompany resource planning and management with targeted economic and technical assistance judged to be necessary to accomplish overall ecosystem and economic objectives for the region. Although these ideas have surfaced during contemporary discussions about the future of the national forests in the Sierra Nevada, most analysts recognize that there is little support for this approach in the region.

Moreover, existing programs appear to lack coordination. A strategic plan to achieve ecological and other goals inherent in NFMA, carefully thought out and sensibly implemented, may offer considerable value in the present context. This type of strategic plan might still serve to enable more active integration of federal and non-federal lands in a range of cooperative ventures between different public and private land owners designed to achieve an entire spectrum of forest related goals, not simply RPA timber targets.[333]

The setting in which the Forest Service now operates calls for recognition that local communities, counties, and state agencies are in many cases capable of fulfilling a constructive and creative role in policy innovation and implementation. Almost all current methods either require or could benefit from local involvement, area-specific expertise, and regional coordination. Policy choices should be made with sensitivity to local social economic and environmental conditions, and they should permit an active collaboration to *facilitate* policy implementation. This approach would ensure that management methods are appropriate to scientific prescriptions and that these methods can be implemented under local economic and environmental conditions. Attention to the details of resource conservation will help to ensure that sound management and ecosystem stewardship actually occur. The "hazard fuels management" program, supported by the Clinton Administration, and championed in California by the Wilderness Society and a diverse coalition of public agencies and other interests, is an example of this approach. The program seeks to increase agency funding for prescribed burning and other means of

332. *See generally* CHALMERS A. JOHNSON, MITI AND THE JAPANESE MIRACLE: THE GROWTH OF INDUSTRIAL POLICY 1925-1975 (1982).

333. These ventures might include watershed and/or multiple national forest planning, regional planning, as well as public-private cooperative management ventures.

returning fire to a more natural role in the landscape, although the program is not tied to a particular locale.[334]

Simultaneously, community based groups, interest groups, and others are proposing new visions for management, some of them highly sensitive to the intricacies of ecosystem stewardship. These efforts are increasingly sophisticated, resulting in both scientifically well thought out and pragmatically constructed plans which locate resource management policies within social and political as well as physical landscapes. Recent proposals for reform offered by sources outside the Forest Service are demonstrably more comprehensive than contemporary Forest Service planning.[335] Increasingly, local and other collaborative groups are designing management systems that seek to tie together scientific knowledge with management prescriptions and to link the management prescriptions with economic feasibility, community well-being, and other socio-economic factors.[336] The specific scientific validity of these ideas and individual proposals, as in the case of the Quincy Library Group proposals, must be reviewed on an individual basis. The virtues of such an approach, however, particularly in their pragmatic outlook, should not be overlooked.

Environmental interests, as discussed above, are skeptical of the rationale and the impetus for community based resource management. Throughout the land management planning process in the Sierra Nevada, environmental groups fought for better communication and better explanation of the impacts of proposed plans with the public and local groups by the Forest Service. Environmental groups have been among the most responsive to local concerns regarding specific natural resource issues and have worked closely with local groups whose aims are in accord with more general environmental perspectives. Additionally, these groups have drawn heavily on the power of local citizens to make a positive contribution to resource policy and

334. *See* HFQLGEIS, *supra* note 288.

335. *See* Committee of Scientists Final Report, *supra* note 331. *See also* The Thoreau Institute Public Land Research and Analyses Second Century Report (visited March 5, 2000) <http://www.ti.org/2c.html>.

336. Jonathan Kusel, et al., *The Role of the Public in Adaptive Ecosystem Management in* CENTER FOR WATER AND WILDLAND RESOURCES, UNIVERSITY OF CALIFORNIA AT DAVIS, SIERRA NEVADA ECOSYSTEM PROJECT, STATUS OF THE SIERRA NEVADA, FINAL REPORT TO CONGRESS Vol. 2, Ch. 20, p.611-624 (1996).

management.[337] Certainly, there are countervailing factors. Environmental groups have fought arduous and exhausting battles over the interpretation of statutory mandates pertaining to national forest management and forest planning decisions. Justifiably, they do not want to see the results of these victories eroded. Nor do they wish to see the return to the resource management of an earlier era that favored the interests of local communities over sound conservation practices. There is also a concern that if planning and decision-making devolve to a sub-regional or local level, the local planning processes will occur in settings where environmental groups are at a disadvantage.[338] Where environmentalists are underrepresented, outmaneuvered, or pressured to make inappropriate compromises, the result may well be environmentally undesirable. Depending on the legal rules governing a particular process, such a result may not be easily corrected at a later date. Also, there is concern that the myriad local planning processes will lead to processes that will force these groups to spread their organizational resources too thinly as they attempt to police these processes. Finally, relaxing or changing the legal mandates now in place to suit local conditions is also troubling to many environmentalists, because it has the potential to further dilute the influence of environmental interests, especially their ability to ensure that the prescriptions that are adopted are in fact ecologically sound.[339]

For an ecological approach to natural resource management to succeed, community based resource management is probably not required, nor is it sufficient by itself. Initiatives like those of the Quincy Library Group clearly do not please everyone. For the time being, however, they are part of the policy landscape in the Sierra. For lasting progress to be made, paths must be found that will lead away from acrimonious disputes over natural resources policy, use, and management in the Sierra Nevada. Failure to find —or to create — positive outcomes condemns the community of

337. The Sierra Club is a national organization composed of regional chapters and local groups, which have continually monitored environmental conditions and Forest Service actions in the region. The Sierra Club and other organizations, such as the Sierra Nevada Forest Protection Campaign, and the Sierra Nevada Alliance, among other groups have also kept the public and other environmental organizations informed regarding existing and emerging issues in the Sierra Nevada.

338. *See The Skeptic*, *supra* note 283, at 28.

339. Louis Blumberg, Asst. Regional Director of The Wilderness Society, *An Environmentalist's Commentary on the Quincy Library Group*, Address at the Univ. of California, Berkeley (Feb. 10, 1998).

actors in ecosystem and resource policy to further protracted involvement. The community of interest, of individual actors in ecosystem and resource policy, is vast and creative. It includes concerned citizens (irrespective of whether they reside locally or maintain a tie to the area from a distance), agency planners, managers, public officials, organizations at all levels of government, businesses and non-governmental organizations, all of whom have something of value to contribute. Citizens, environmental interests, and others are exploring and experimenting with new methods of participation and different roles in resource management. The results they accomplish depend on the ability of the public and various interest groups to promote and maintain future management objectives for the national forests in the Sierra, and to create or recreate institutions to implement programs and achieve the desired results.

IV.
LESSONS FOR THE FUTURE

Examining forty years of forest policy allows for reflection on the complexity of the institutional setting in which these policies operate. Understanding the sources and contours of past conflicts over resource management and conservation cannot by itself provide a solution to the conflict, but insights gained from the experience furnish the means to address the continuing conflicts in environmental management. The history of reversals in Forest Service planning over the last several decades offers evidence of a period in which the changing preferences of the American public had a decided impact on public policy. Through the legislative and legal processes, the public has exerted a profound influence on the natural resource conservation and management policy for the national forests. Public sensitivity to the changing scientific basis for resource management, coupled with forceful objections to Forest Service planning and agency management proposals for the Sierra Nevada led to successive administrative and political failures. Struggles over the conservation and management of the region's natural resources over the past forty years, particularly of late, provided a catalyst for more competent and comprehensive assessments of the region's natural resources and ecosystems, such as the Sierra Nevada Ecosystem Project. The information obtained, however, has often revealed additional gaps in our knowledge.

Environmental and natural resource-related policies had operated without explicitly considering the ecosystem as a point of reference for policy formation, implementation or evaluation. Changing public values and priorities forced the agencies to do so. Efforts to apply the kind of knowledge gained as a result of SNEP and other studies are now the central focus of ecosystem planning in the region. As the Forest Service's experience with planning has demonstrated, better gathering and analysis of natural and socio-economic data are necessary to ensure that policies will be legally adequate, publicly accepted, and implemented. The data is essential to the development and evaluation of policy and planning in the Sierra Nevada. A great deal of information and experience gained as a result of the funded experience of successive statutory and administrative reforms resides in the public, agency officials and scholars. Whether this knowledge will enable better environmental management and translate into more stable policy for the Sierra Nevada, remains to be seen.

The source of direction for national forest management has also subtly but surely changed. The centralization and standardized approach to resource management employed by the Forest Service under the auspices of the Multiple Use and Sustained Yield Act and in the early days of NFMA has been replaced.[340] Even though NFMA continues in effect, the Forest Service no longer controls national forest policy. Instead, mandatory provisions of the law and regulations, such as the regulatory requirement to provide for "minimum viable populations," mean that the regional and local landscapes, watersheds, and their resources are now the focus of attention. Assessments of the viability of these resources now come first and the results of these assessments directly influence planning for the future.

During the period in which this new information has emerged, the institutional landscape and the organizations responsible for taking account of new scientific information and priorities remained relatively unchanged. Natural resource policy for the region, however, has undergone significant reformation. Congress and scholars of natural resource policy have recognized that the institutional structure and objectives for the conservation and management of these lands and resources are often not well suited for the demands currently placed upon resource managers.

340. Dombeck, *supra* note 323.

This appears particularly true when the national forests of the Sierra Nevada are viewed in the context of current environmental priorities. Environmental goals embodied in the environmental law and present natural resource policy emerged as a result of the changes in social and economic structure of the surrounding region and of California. Organizational structures and financing mechanisms for resource conservation and management, however, have not undergone substantial change. This portends further changes in the administration of natural resources and ecosystems. The inability of the Forest Service and other public agencies to interpret and respond effectively to the public's priorities regarding the national forest management may be changing. Nevertheless, the Forest Service and other agencies lack the institutional capacity or authority to fully develop and implement ecosystem conservation agendas and resource management programs. The frontier of scientific knowledge has advanced in light of study, research, and experimentation. The institutional frontier in the Sierra Nevada is similarly open for inquiry, experimentation, and reform. Further investigations, followed by institutional redesign and innovation could better support advances in scientific understanding and would serve to complete a transformation in natural resource policy in the region.