



# New and Old Forestry

## A Confrontation in the Making

Late-twentieth-century controversies over forest management—the “wars in the woods”—emerged in clear form in the 1970s, but they had significant roots in previous decades. They developed out of two divergent tendencies: an ecological approach to forest management based in a prior environmental perspective, expanding the focus on outdoor recreation in a natural setting into emphasis on forests as complex ecological entities; and more traditional commodity forestry, emphasizing wood production, whose proponents resisted the acceptance of ecological objectives and gradually sharpened their own strategies to defend a more limited commodity production role for American forests.

### **From Environment to Ecology: The Beginnings**

Ecological forestry grew out of citizen activity that was more aesthetic than ecological in its perspective. The central thrust of that beginning was popular interest in outdoor recreation, highlighted by a post-1920 outburst of interest in outdoor recreation that continued unabated after World War II. This broad-based citizen activity led to national legislation—the Wilderness Act of 1964 and the National Trails and National Wild and Scenic Rivers acts of 1968—and counterparts among the states as well. These had little ecological content; instead, they emphasized the beauty of natural forests,

high mountains, lakes, rivers, and the outdoors generally. But they did provide new opportunities for citizen initiatives to advocate that more and particular areas be established and legally protected—"set aside" as the phrase went—for enjoyment of their natural beauty. One can therefore root much of the subsequent citizen participation in environmental and ecological affairs in these outdoor recreation programs and the aesthetic impulse that lay behind them. The evolution of ecological forestry involved the growth of citizen participation and the addition of ecological objectives to the earlier emphasis on aesthetic objectives in the natural world of the "outdoors."<sup>1</sup>

The expansion of citizen involvement in the national wilderness program established in the 1964 legislation soon took that program well beyond what Congress had anticipated and involved a much larger public. That law had designated a number of areas as official units of the National Wilderness System, but it had also provided for "wilderness study" areas, that is, areas that the U.S. Forest Service and other land management agencies should examine and propose for addition to the system by Congress. In its investigations the agency frequently sought the suggestions of citizen groups. However, wilderness proposals soon went beyond those formally identified in the law as wilderness study areas when citizen groups brought a wider range of "wilderness candidates" to the table. Often these were proposed not through the Forest Service but directly to Congress in the manner of traditional constituency proposals to members of the House and Senate. They led to a considerable expansion of what was called "de facto" in contrast to "de jure" wilderness, that is, areas that citizens argued in fact had wilderness qualities equal to the areas recognized in the 1964 law.<sup>2</sup>

These citizen-inspired wilderness areas within the national forests extended the focus of the wilderness system from the earlier emphasis on alpine areas, known dismissively as "rock and ice" wilderness, to more heavily forested areas below tree line. The U.S. Forest Service vigorously resisted this transition in order to preserve forest lands for wood production, but citizens continued to press to expand the venue for wilderness action. A symbolic episode of sorts in the incorporation of fully forested areas into the wilderness system occurred when an uncut forested watershed, the French Pete Creek in Oregon, was added after a twenty-year battle pressed by citizen advocates. Little by little, ecological realities of forested lands became an integral part of the recreation movement. This was reflected in changes in outdoor guidebooks, which earlier had been written for mountain climbers. Previously the aim of climbers hiking through forests was to get to the beginnings of the vertical climb as quickly as possible; the trails through the forest to reach that point were often sketched only briefly. The revised

guidebooks, however, greatly expanded description of the forested trails, including the flora and fauna that the climber might encounter. Thus, in several ways one could trace gradual changes in the wilderness movement that enhanced the potential interest of the outdoor adventurer in forest biology, as well as geology.

The growing citizen involvement in forested wilderness areas was especially striking in the East, where the de facto wilderness movement was almost wholly within the context of forested rather than alpine “rock and ice” areas.<sup>3</sup> The potential for the inclusion of eastern areas in the wilderness system attracted eastern members of the Sierra Club who, having experienced western areas, turned to their own backyards. Most of the new eastern chapters of the club, formed state by state in the early 1970s, grew out of wilderness proposals in their nearby national forests. Club chapters sponsored outings to scout potential wilderness areas, prepared slide shows to convey the attractiveness of the areas to a larger audience, drew up proposals with maps and detailed descriptions of biological as well as geological characteristics, and enlisted their representatives in the Congress to introduce bills to include the areas in the wilderness system. These proposals were consolidated in omnibus bills and served to establish in a 1974 law the first eastern components of the wilderness system.

The Wilderness Act of 1964 grew out of citizen activity in the form of the Wilderness Society. Initially this was a relatively small group of advocates, located primarily in the East. But action subsequent to the act of 1964 greatly expanded the number of people involved in promoting wilderness protection, enlisting advocates throughout the nation. A “movement” started by a few gradually became a nationwide effort on the part of many. Confined at the start to an advocacy group in the nation’s capital—even as late as 1977 the Wilderness Society had only one western state chapter, in Montana—by the 1980s wilderness activity had brought together a number of national organizations, but, more important, it had generated regional, state, and local action throughout the country. As interest in the ecological characteristics of the national forests emerged in the 1970s, many in those organizations added ecological and watershed objectives to their interests, creating an ecological forestry perspective in addition to the environmental forestry of the outdoor recreation movement.<sup>4</sup>

#### *The Clear-Cutting Issue*

Wilderness activity served gradually to bring the nation’s forests closer to the American people. Events pertaining to the forest at large, not just areas of wilderness potential, augmented the process by which forested areas be-

came more visible to the public, and enhanced public interest in how they were managed. A number of events between the mid-1960s and the mid-1970s were important steps in this direction.

The first of these that grew out of the Multiple-Use Act of 1960 was initiated by the wood products industry when it sought to amend that act to give it more emphasis on wood production. The 1960 act had identified the "multiple uses" under which the national forests should be managed: wood, water, grazing, recreation, and wildlife, with the stipulation that wilderness would not be "inconsistent" with these objectives. However the act did not set priorities among these uses, and the industry argued that it should, and that wood production should rank high among them. In the late 1960s the industry took a bold step in this direction by proposing legislation, the Timber Supply Act of 1969, giving wood production a much greater role in much of the national forests. The environmental coalition that had successfully fought for the wilderness, trails, and rivers acts of 1964 and 1968 applied its influence now to this proposal and defeated it.<sup>5</sup>

Almost immediately, however, the issue of clear-cutting and how forests should be harvested came to dominate the national forest debate. Clear-cutting not only engaged the nation's capitol in debate over the national policy, but affected the many Americans who had explored the out-of-doors since World War II. As the Forest Service adopted clear-cutting in the 1960s as the preferred method of harvesting trees, those who hiked and camped in the woods could see the results for themselves. They considered the remains of a clear-cut to be utterly repugnant and reacted not just with their minds but with their emotions. Pictures of the results of clear-cutting reached an even larger audience and expanded further the public that would feel involved in the ensuing debate.

Reaction against clear-cutting arose initially in the Bitterroot Forest of western Montana and the Monongahela Forest of West Virginia. In both areas, citizens called upon their legislators, Senator Lee Metcalf in the first case and Senator Jennings Randolph in the second. In Montana, Professor Arnold Bolle, dean of the Forestry School at the University of Montana, authored a report highly critical of the Bitterroot clear-cut.<sup>6</sup> In West Virginia it was a citizen fisherman's group, the Izaak Walton League, which took up the cause and with the help of an attorney with the Sierra Club, Jim Moorman, devised a legal argument that clear-cutting was contrary to the 1897 act, the initial management statute under which the Forest Service operated. That act, Moorman argued, directed that only mature trees be sold and that they be marked individually for sale.

Clear-cutting soon became the subject of hearings in Congress, sparked

by Senator Gale Magee of Wyoming, after which a legislative proposal was developed to restrict its practice.<sup>7</sup> The Nixon administration, customarily ambivalent about environmental matters, drew up an executive order to restrict clear-cutting in the national forests but as the issue heated up, withdrew it.<sup>8</sup> The issue, however, remained dramatically alive when the federal courts accepted the claims of the environmental plaintiffs and declared the practice contrary to the 1897 act. To the wood products industry it was obvious that the law needed changing to legitimize clear-cutting, but doing so opened the door to a much more extended debate over management of the national forests, in which a number of critics of national forest management had an opportunity to make themselves heard. The resulting National Forest Management Act of 1976 became a focal point in the clash between the new and the old that set the stage for the steady evolution of ecological forestry and perfected and hardened the vigorous reaction of commodity forestry advocates.

The management issues set off by the controversies over clear-cutting were argued and decided at the upper levels of government in Washington, D.C. But as the issues evolved they came to involve the wider public more fully. The initial human reaction to clear-cutting was aesthetic; the devastation evident in the tangle of discarded pieces of trees and brush seen when one came upon a clear-cut during a hike was a sharp contrast to the beauty of the full canopy forest. But it did not take long for the hiker with an inquiring mind to explore what else was involved. The destruction was more than aesthetic. Clear-cutting, many came to believe, had a profound effect on forest plants and animals, destroying a complex range of habitats from the canopy to the ground level and implicitly raising questions as to just how long the effects of the cut would last and if recovery would ever take place. Wilderness of rock and ice did not raise such questions. But the fully forested wilderness established a new visual image of wilderness to be protected, and called attention to the seemingly dim prospects of recovery from massive timber harvesting. Clear-cutting had the potential of moving the interested citizen in a new direction, toward a more complex and more comprehensive ecological view of what had been destroyed and what should be restored.

Both the expansion of wilderness affairs from *de jure* to *de facto* objectives and the clear-cutting issue had immediate effects on the public context of national forest management. But they also had more slowly evolving consequences by focusing public interest on just how the forested areas of the country should be managed. The ecological perspective that gradually influenced management objectives was not implicit in either *de facto* wilderness

or the reaction against clear-cutting but had significant roots in the fertile circumstances established by those developments. That perspective also had roots in the elaboration of two new contexts for public debate that came onto the scene in the same years, the environmental impact statement (EIS) required by the National Environmental Policy Act of 1969 (NEPA) and the Endangered Species Act of 1973 (ESA). The steady evolution of an ecological perspective on forests brought together citizens' direct experience of forests and the opportunities that both NEPA and ESA provided for citizens and scientists to participate more fully in national forest management.

#### *Legislative Innovations with Ecological Potential*

Both NEPA and the ESA had a potential to influence national forest management that was only dimly recognized when they were enacted, and neither act had an immediate impact on the development of an ecological approach to forest management. However, as the debate over forest management sharpened and the provisions of both pieces of legislation were used more frequently, their influence came to be so extensive that commodity forest advocates looked on them, and rightly so from their perspective, as crucial. They worked mightily to cut them back sharply or even to repeal them.

The National Environmental Policy Act had some wide-ranging policy provisions, as its title indicated, but both the Council for Environmental Quality (CEQ), which was established to administer it, and the courts let that part of NEPA remain unused.<sup>9</sup> They declined to interpret the act as mandating agencies to make policy decisions in a favorable environmental direction. However, in Section 102 the act also contained a procedural requirement that the environmental consequences of federally approved actions be carefully analyzed before those actions could take place. The provision for environmental impact analysis did not require the agency to take action one way or another, but by simply requiring that careful and thorough study precede action it potentially could bring a wider range of factors into consideration for forest management than had traditionally been the case. Hence it provided an opening for ecological concerns to become a part of decision making.

Environmental impact analyses, so the requirements ran, had to be comprehensive, interdisciplinary, and searching. They could not be simple and one-dimensional, and the courts frequently made decisions that agencies must live up to that requirement. The EIS process also required that alternative courses of action with different consequences be fully examined and that the agency make a reasoned choice among them. All this meant that a broader view was now called for as to what a forest comprised and

what had to be taken into account in comprehensive forest management. It was now legitimate, indeed required, to consider the more central aspects of ecological forestry, such as a much wider range of species than those capable of producing wood fiber, as well as more complex and longer-term ecological processes.

Gradually, over the years, ecological forestry advocates, both citizen groups and scientists, found in the EIS an opportunity to bring the latest in ecological forest science to bear on forest plans. The citizen groups followed the relevant scientific literature closely and spread widely those scientific studies with ecological implications. They consulted with scientists as to the latest knowledge about the ecological consequences for forest conditions of human actions such as logging, road building, or recreational vehicle use. At times they served to bring scientists together to make joint statements about the ecological wisdom of proposed courses of action. As a result of these efforts, the agency often financed impact studies by individual scientists or consultants and at times hired their own specialists, particularly in the regional offices, in order to ensure that their environmental analyses would pass legal muster. In such ways the Forest Service was forced to bring a broader ecological perspective into the agency, although it did so piecemeal and often with great reluctance.<sup>10</sup>

The nation's endangered species program, which evolved through a series of enactments but reached a relatively comprehensive form in the Endangered Species Act of 1973, also required the agency to manage more broadly and provided opportunities for citizen groups and scientists to pressure it to do so. The act was administered by the U.S. Fish and Wildlife Service (FWS), and its provisions were imposed upon all federal land and water management agencies. The agencies were required to call upon the FWS to investigate, through a "biological opinion," whether or not a species on agency lands might be endangered or threatened. Moreover, members of the public could petition the agency to list species as endangered, as provided for in the act. The agency, in turn, called upon biological specialists in the species in question to determine the relevant population levels, whether or not they were declining, and if so, if they had reached levels that could not sustain the species.<sup>11</sup>

It took some time for the program called for by the ESA to be developed, for an active constituency on the part of citizen groups and biological specialists to form, and for the agency to bring together a group of scientists, both in-house and externally, to implement it. But as it did so it revealed the way in which the program served as an instrument to link the public, the scientists, and the agency in a common endeavor.<sup>12</sup> Accomplishments

under the act always lagged behind its potential. But over the years, both the ESA and NEPA provided important mechanisms whereby ecological forestry took shape. The National Forest Management Act of 1976 established even more comprehensive opportunities for the expression of this new approach to forest management. Ecological forestry evolved not just through the new procedures available to its advocates; it also took shape through intensive give-and-take with commodity forest advocates in the Forest Service, the forest profession, and the forest industry. A variety of commodity forest organizations were unprepared to bring emerging ecological ideas into the orbit of their thinking and accepted them only with reluctance and often vigorous resistance.

### The Response of the Old to the New

The proposals advanced by advocates of ecological forestry presented a significant challenge to established forestry institutions, represented by the U.S. Forest Service, the forestry profession, and the wood products industry. Since the late nineteenth century those institutions had provided the main impetus in shaping forest management. Over the years of the twentieth century, these institutions and their leaders had shaped the scientific and managerial practices in wood production forestry to the extent that the word “forestry” in both technical and popular language implicitly meant “wood production.” The forestry leaders and institutions now were so firmly committed to wood production that, when confronted by the press of new objectives in environmental and ecological forestry, they had difficulty in accepting them. Often they considered these new ideas as threats to their primary interest in wood production rather than as opportunities to broaden their vision as to what forests constituted and how they were to be managed. Hence, when the drive toward ecological forestry began to emerge in the 1970s, the leaders of traditional forest institutions were not prepared to exercise constructive leadership in the growing pursuit of environmental and ecological objectives.

This reluctance reflected deep-seated professional values and commitments from which a silvicultural perspective had emerged over the years. That perspective was one-dimensional, focused sharply on that small piece of the forest, species of trees that were marketable as lumber and also for pulp for paper products. This viewpoint was rooted in commitment to a sharply specialized branch of “forest botany” that greatly narrowed perspective in training, profession, and management. Many of the earlier for-

esters had training in traditional botany, which introduced them to a wide range of plants and plant evolution. But in the process of becoming field foresters and forest managers, that perspective was narrowed to increasingly detailed knowledge about those relatively few plants that contained marketable wood fiber. Hence a more limited field of botanical knowledge called “dendrology” came to replace a broader botany. By 1950 the most widely used dendrology text book, authored by Harlow and Harrar, advised the reader that “It is felt that students of forestry should first know well the commercial species of North America.”<sup>13</sup>

#### *The Evolution of Wood Production Practices in the Forest Service*

The Forest Management Act of 1897 stipulated two major objectives in management of the forest reserves: wood production and watershed protection. The agency soon became preoccupied primarily with the first. The 1897 law provided little guidance about wood production, save to authorize a policy to maintain a “continuous supply of timber” and to stipulate that only mature timber be cut. The agency took this authorization as a broad mandate. Elaboration of that authority in practice came to be the agency’s central preoccupation over the years of the twentieth century.

Pressures arising from the market shaped the agency in a number of ways. One was the need to sell wood to return agency income, a need in which the agency inevitably conformed to the requirements of the market. Hence sales contracts were shaped so as to be attractive to timber buyers. The agency developed the practice of organizing these contracts around lumber mills and soon thought of its responsibility as one of providing a continuous supply of timber for specific mills that sustained community economies. Often this desire to foster a local wood products economy resulted in the agency shaping the details of contracts, their length and terms, so as to be more acceptable to timber buyers.<sup>14</sup> In this way the requirement for a “continuous supply of timber” became a major statutory instrument for fostering an industry and establishing a community economic base resting on resource extraction. All this was intended to bring about a major change from instability in the industry and communities that resulted from the “cut and run” practices of earlier years.

Equally significant and evolving early in the agency’s history was the penchant to eliminate older trees and to replace them with the fully “regulated forest,” which would be subject to continued careful control from planting to harvest.<sup>15</sup> Sound forest management, in the eyes of the foresters, could advance only by removing the old to make way for the new. Those

who valued old forests for their aesthetic and later for their ecological characteristics and who spoke of “old growth” or “ancient forests” stood outside the pale of scientific forestry.<sup>16</sup>

A third major tendency in production forestry practice involved the way in which the market undercut one of the most widely accepted features of good silviculture, that of removing smaller trees through thinning—to “thin out judiciously and advance the crop,” as the phrase went. This practice was continually stymied by the unwillingness of buyers to purchase thinned products. In almost all sources of wood supply from the smaller forest woodlot to the larger holdings, market pressures led to a preference for cutting the larger trees and leaving the smaller ones, a practice that came to be known as “high-grading.” These market pressures played an important role in undermining selection silviculture, which, while it emphasized cutting the larger and more merchantable trees, also embraced thinning as a strategy for producing future marketable trees.<sup>17</sup>

#### *Agency Response to Objectives Other Than Wood Production*

The firmly established wood production objectives of the Forest Service made it difficult for the agency to integrate other objectives into its program.

The first challenge to the agency’s objectives came early in its history amid the popular view that the nations’ public forests served both as parks with desirable aesthetic qualities and as sources of wood products. This view was expressed most frequently by one of the most extensive and vigorous advocates of the forest reserves, the General Federation of Women’s Clubs.<sup>18</sup> Their support led eventually to the formal designation of reserves as national forests where wood production would occur, but also to the designation of areas—local, state, and national—as parks where it would not. This dual role of forests was expressed widely by a Coloradan, Enos Mills, who had close connections with the Federation of Women’s Clubs and who was hired by Gifford Pinchot, the head of the newly designated Forest Service, to “spread the gospel” of the national forests. Mills spoke throughout the nation, and his main constituency was the network of state chapters of the Federation of Women’s Clubs. His speeches reflect the two roles of forests—as parks and for production—which he, like many members of the public, did not see as incompatible.<sup>19</sup>

Gifford Pinchot, however, the nation’s most forceful advocate of national forests, could not bring himself to include both sets of forest management objectives as legitimate functions of the new agency. He opposed park proposals that stipulated a no-cutting policy and sought to incorporate parks into the national forests with explicit approval that they provide for wood

harvest.<sup>20</sup> By the time of the celebrated Governor's Conservation Conference in 1908, Pinchot's distinction between forests and parks had become sharpened to the point of almost irreconcilable alternatives. Pinchot refused to give either Mills or the Federation of Women's Clubs an integral role in the conference proceedings or in the proposals arising from it.<sup>21</sup> Silviculturists and park proponents went their separate ways. The main objective of the park proponents thereafter was to establish a national park administration separate from the Forest Service, and despite Pinchot's vigorous opposition, they won when Congress in 1916 established the National Park Service.<sup>22</sup>

These events established a rivalry between the two agencies. The most significant result was their competition for land, resulting in a loss of U.S. Forest Service jurisdiction over forest land when a series of new national parks were carved out of national forests.<sup>23</sup> However, the rivalry had even more extensive significance for the future. For while the National Park Service provided over the years a forum for concern over a wide range of forest species and ecological processes, the Forest Service (not always without hesitation) maintained a rigid rejection of a wider view of its own ecological resources and resisted their inclusion in its management program.<sup>24</sup> As it confronted ecological forestry in the 1970s and after, these earlier commitments to wood production constituted an agency burden that greatly limited the ability of the old to respond constructively to the new.

The watershed program of the Forest Service, also derived from the 1897 Forest Management Act, carried a similar burden. That provision grew out of the desire on the part of western towns and cities on the one hand, and irrigators on the other, to protect the watersheds from which their water supplies were drawn.<sup>25</sup> These water users were primarily concerned about watershed erosion and silting in their reservoirs, and the tendencies of both logging and grazing to cause erosion. However, in administering the 1897 act, the Forest Service shifted the focus of its watershed program from the role of forests in protecting watersheds and water supplies to their role in facilitating the loss of water through transpiration. To prevent that loss trees on the watershed should be cut, rather than be retained to protect against erosion.

Thus a program that might well have called for restriction on logging in order to protect watersheds was turned into a justification for timber harvest to enhance water supplies. These developments constituted the early stages of an issue that evolved with considerable force in later years as ecological forestry placed great emphasis on the protection of aquatic species—salmon was the most dramatic case—through restricting timber harvests in order to maintain watershed protection functions. In the face of these new demands

on forest management the Forest Service had little experience or management skills on which to rely, not even a system for inventorying or measuring the health of watersheds.<sup>26</sup> A traditional management orientation focused on commodity forestry now proved to be a roadblock in the agency's ability to take up a major element in the ecological forestry program, one that, ironically, constituted an action to recapture a statutory mandate in the 1897 act.

### *Recreation*

In the 1920s the national forests entered into a new social milieu as a result of their increasing accessibility by automobile. The national forests in the East, acquired under the 1911 Weeks Act, were especially subject to increased use from a more mobile public. The Forest Service was now called upon to accommodate driving for pleasure as a form of recreation, which came to be the most extensive noncommodity use of national forests, and a growing public interest in hiking, camping, and wildlife.

Driving for pleasure came to impact the forests in the early stages of the automobile era, when in the 1920s the effect of timber cutting, and especially clear-cutting, on the visual quality of forest roads became a subject of internal debate in the Forest Service. Should clear-cutting to the edge of the road be permitted or prohibited? Advocates of clear-cutting argued that while the public might object, this objection could be overcome by a careful explanation that the practice was silviculturally sound. But advocates of prohibition expressed considerable doubt that such an explanation could overcome public objections on aesthetic grounds. To prohibit clear-cutting down to the road edge would reduce the amount of forest available for harvest, and this amounted to a considerable acreage if it were applied to all car-traveled roads throughout the national forest system. The agency chose to keep the area along roads—the “visual corridor”—free of clear-cutting.<sup>27</sup>

Closely associated with driving for pleasure was the growing popularity of car camping in the national forests. Beginning in the 1920s, car camping grew steadily in the 1930s, amid the development of an extensive recreational infrastructure in the nation's parks and forests created by the Civilian Conservation Corps. Car camping often led to scattered campsites and the spread of forest fires; the agency met these problems with a series of planned campgrounds and the requirement that camping be confined to those areas and be prohibited elsewhere.

Both visual corridors and specified campgrounds established a pattern of land classification or zoning on the national forests that separated “special uses,” where timber harvest would be restricted or prohibited, from

the “general forest” where harvest would prevail as the dominant use. This reflected the agency’s approach to noncommodity uses in which they were separated from the general forest, with the implication that they were secondary uses and generally incompatible with the main forest’s more important use for wood production.

In the 1960s these approaches were extended to the national wild and scenic rivers and national trails system that were then evolving. Each was planned with scenic visual corridors. These seemed naturally to be required for aesthetic enjoyment of both river recreation and hiking, and therefore the policy was extended to the new recreational uses. In the earlier years when the wood products industry was relatively uninterested in the national forests, there had been little objection from that quarter to visual corridors. Now in the 1960s, with a much more lively interest in the national forests, the industry was quick to complain that the forest acreage required by this zoning practice would greatly restrict wood production. But the practice had long been established, and in the new circumstances it prevailed.

### *Wildlife*

Greater public accessibility to the national forests opened them to a steady increase in hunting and fishing and brought wildlife as a resource more directly into the realm of forest management. Over the years this presented national forest managers with problems that were even more difficult to deal with than was the case with recreation. For while recreation could be isolated from wood production through zoning, wildlife with its varied and complex habitat requirements was a more integral part of the forest. The earlier focus of wildlife protection was on nesting and the reproduction of the young and was simple enough for the agency to deal with, but as information derived from radio telemetry greatly expanded knowledge about the geographical range and complexity of wildlife habitats, the integration of wildlife with wood production became ever more difficult. Moreover, wildlife was subject to the jurisdiction of the states, not federal authority, and national forest supervisors had to work within the context of decisions made by state game commissions.<sup>28</sup>

During the 1930s wildlife as a public management issue became increasingly important. Hunting on public lands grew steadily. The National Wildlife Federation was established.<sup>29</sup> The Wildlife Society was founded as a professional organization.<sup>30</sup> Thus, on both public and scientific fronts, wildlife commanded a new presence. A report by a special committee of the Society of American Foresters on wildlife emphasized the difficulties of integrating wildlife into traditional forest management.<sup>31</sup> The Forest Service

responded to these new circumstances by increasing its resources for wildlife management in the 1930s. But different priorities during World War II brought this to an end, and after the war that commitment was restored only slowly.<sup>32</sup>

During these early postwar years, prior to the emergence of environmental and ecological objectives in forest management, the roles of wildlife and silvicultural management were dovetailed in the “early successional” forest, that is the young forest in its first decade or so of regeneration after harvest. These new forests provided considerable food for browsing animals, such as deer and ruffed grouse. This satisfied the interests of both deer and grouse hunters, on the one hand, and some wood production interests, on the other. In the Great Lakes states, the accommodation of both interests was especially firm, since the replacement of the older pine forest with aspen, raw material for the pulp and paper industry, gave rise to a short-lived forest in which the early successional stage would be repeated frequently every fifty years or so. Hence both the pulp industry and the game hunters forged a firm partnership to object to creating older, late successional forest acreage.<sup>33</sup> In Pennsylvania the relationship was more tenuous, since here the wood production goal emphasized hardwoods, and successful regeneration of the best hardwoods was jeopardized, since the seedlings were prime deer food.<sup>34</sup>

These varied adjustments of wildlife to silviculture came at a time when wildlife interests were primarily matters of game hunting. The emergence of ecological forestry, however, brought a new twist to the role of wildlife, emphasizing nongame animals and human appreciation rather than hunting.<sup>35</sup> Among wildlife professionals, as those, for example, in the Wildlife Society, the new nongame wildlife interests were more readily accommodated.<sup>36</sup> The changes were also reflected in the revised North American Game Policy, which appeared with a new title, the North American Wildlife Policy.<sup>37</sup> Amid the new interest in a wider range of nongame wildlife, the accommodations in earlier years between silviculturalists and hunters were not so easily repeated, and those accommodations actually became a major roadblock in the adjustment of the old to the new.

### *The Challenge to Agency Autonomy*

The varied demands for use of the national forests, which seemed to increase steadily over the years, led to proposals to incorporate some uses into the agency’s management mandates. Thus, the Multiple-Use Act of 1960 formally identified five acceptable uses of the forests—grazing, recreation, wildlife, watershed protection, and wood production—and declared that

wilderness, though not included in the list, was “not inconsistent” with those uses. Three of these uses, grazing, recreation, and wildlife, were not included in the Forest Management Act of 1897. Decisions as to which uses should be allowed or favored on specific forest lands were still in the hands of the Forest Service, and this continually prompted proposals on the part of interested sectors of the public for legislation to preempt the agency’s authority to enhance the role of one or another use.

Proposals challenging the agency’s autonomy were not without precedent. In the past, failure to respond more positively to external demands had led to significant losses of the agency’s freedom to make its own decisions. Because of its rejection of national park objectives, the Forest Service failed to prevent the establishment of a separate national park agency and faced the transfer of a significant number of its lands to the National Park Service; because of its resistance to permanent wilderness designations on national forest lands it lost the authority to establish such areas to Congress in the Wilderness Act of 1964 and the Eastern Wilderness Act of 1974; in the endangered species program the agency, as with all of the federal land management agencies, was faced with decisions by another agency, the U.S. Fish and Wildlife Service, about important species and habitat designations on its own lands.

The issue of agency autonomy and the continual possibility of statutory restraints on that autonomy, therefore, lurked behind the emerging controversies of the 1970s. Environmental and ecological advocates hoped that the application of the National Environmental Policy Act of 1969 would impose restraints on the Forest Service on behalf of their objectives. But when the administrators of NEPA and the courts seemed to abandon the substantive requirements of that law and confine it to acceptable procedures—how the agency should make decisions and not what the substance of those decisions should be—the would-be reformers turned increasingly to new legislation that would include such substantive requirements.

By the middle of the decade, therefore, commodity forest advocates were primed to seek new legislation to legitimize clear-cutting, and environmental and ecological advocates were prepared to join in with their own proposals for statutory reform that would specify more precisely their environmental and ecological goals. The result was a legislative struggle leading to the National Forest Management Act of 1976 (NFMA), an enactment that was as promising for sharpening a new and more formalized setting for the conflict between commodity and ecological forestry as it was for solving the immediate problems of defenders of commodity forestry.

### The Forest Management Act of 1976

The immediate impetus for congressional action leading to the National Forest Management Act of 1976 was the *Monongahela* decision, in which the court decided that clear-cutting was contrary to the Forest Management Act of 1897, under which the U.S. Forest Service had long administered the national forests.<sup>38</sup> The decision created a crisis for both the wood products industry and the Forest Service, which had been committed to clear-cutting as the preferred method of harvest for over a decade. The drive for changes in the law to permit the practice was spearheaded by the industries that harvested and processed wood, but, taking a lesson from the failures in the drive for the Timber Supply Act of 1969, the industry now sought to organize the entire wood products industry, from the woods to the finished product and including lumber mills, commercial outlets, and labor, in a massive drive under the rallying cry that the future of the entire industry was at stake.<sup>39</sup>

Almost immediately, however, legislative proposals took a somewhat different turn. The initial bill was introduced by Senator Hubert Humphrey, who had long argued that a new climate in forest affairs took it well beyond wood production alone, and who had been searching for an approach that would broaden the context of forest management.<sup>40</sup> Humphrey's proposal would establish a wide-ranging planning process in which the agency and each national forest would periodically establish plans to guide their activities over the following decade or so. The proposal was brought forward under the rationale that planning conducted within the context of "scientific" natural resource information would become the prevailing method of making national forest decisions and would replace the evolving context of political controversy and litigation. A way had now been found under which future national forest decisions would move forward smoothly and outside the realm of politics.<sup>41</sup>

Competing with the Humphrey proposal was another proposal arising out of the environmental community and focusing on the emerging substantive environmental and ecological issues in national forest management. It was sponsored by Senator Jennings Randolph of West Virginia, who had established close relationships with environmental groups during the controversy over clear-cutting in the Monongahela National Forest.<sup>42</sup> These groups were wary of circumstances in which the Forest Service would have sole administrative authority to make national forest decisions and desired to include in the new law specific substantive provisions in the form of policy requirements. Some of these groups had wanted to use NEPA to es-

establish substantive goals for forest management and were disappointed that the courts and the Nixon administration had turned that law into an overwhelmingly procedural device. They now came to the debate over the new forest act hoping to work substantive provisions into it.

A number of these specifics pertained to silvicultural standards, such as the use of clear-cutting and selection cutting, or that land be classified into levels of productive capacity and timber harvest be restricted to lands of sufficient potential for regrowth, or that harvest not be permitted unless regeneration could take place within a limited time after harvest.<sup>43</sup> But others dealt with environmental and ecological objectives, such as maintaining the diversity of plant and animal communities and protecting riparian areas. The agency resisted these objectives and the standards that they implied on the grounds that these were "technical" matters that had best be left to "the professionals," but the citizen environmental organizations argued that they were far more than mere technical matters and the agency would not reform itself unless required to do so through substantive requirements enacted through legislation.

The initial significance of the 1976 NFMA was to fulfill the main goal in the industry drive by legitimizing clear-cutting, though under some restriction. Moreover, the law established the planning process that Senator Humphrey had promoted. Commodity forestry advocates were particularly relieved that much of the prescriptive element of the Randolph bill that would have reduced the autonomy and influence of the agency was considerably softened. This self-confidence on the part of commodity forestry advocates played a major role in prompting the industry to become involved with the Reagan administration with a firm belief that it could count on continued influence in national forest policy and to encourage the forest industry as well as the Forest Service to belittle and ignore the persistent but unspectacular growth of ecological forestry.<sup>44</sup>

The long-term significance of the act, however, was to extend the Forest Service planning program that had already begun to develop in the agency into a comprehensive and forest-wide process. Each forest now was required to develop a fifteen-year plan and to propose alternative courses of action and justify which one it chose to approve. Opportunities for citizen input into the plans would be required, and appeals to modify the plan for any national forest could be taken through the agency administrative appeal system. The process by which these plans were developed and their application in on-the-ground management from this time forward constituted the focal point of debate over national forest policies. And ecological forest management proposals became a critical aspect of this debate.

Initially the planning program established by the 1976 act aroused considerable enthusiasm on the part of those who envisaged a sharp reduction of controversies over national forest management. The program, so it was predicted, would replace a highly politicized national forest scene with a smoothly running decision-making system under the direction of a professional and value-free administrative agency. In later years, since public debate did not lessen, but in fact increased, and since litigation as a part of that debate continued, these planning advocates looked upon the act as a failure. However, use of the act's planning program by citizen and scientific groups shaped it into a major forum for the environmental and ecological objectives emerging in the wider society to work themselves out in the context of specific forests. In this view, one can well look upon the 1976 act not as a failure of planning but as a successful mechanism for the gradual, even glacial advance in expression of environmental and ecological forest objectives.

That the act would play this role became apparent soon after it was approved in 1976. Initially it took the form of a handbook for citizen forest reformers as to how they could use the act's procedural and substantive provisions to advance their objectives.<sup>45</sup> Published originally in 1980 after the agency developed the initial regulations under which the act would be carried out, and then reissued in 1983 after the revised regulations themselves had been approved in 1982, the handbook was a joint venture of the Wilderness Society, the Sierra Club, the National Audubon Society, the Natural Resources Defense Council, and the National Wildlife Federation. The handbook served as a how-to guide to citizen reformers in their efforts to participate in the planning process. More important, it served to identify a midpoint in the emergence of ecological forestry, a stage in which earlier impulses in that direction were consolidated and from which, through the forest planning process, they were integrated to shape a more fully developed nationwide ecological forestry initiative.

In using the planning program now required by the 1976 act, ecological forestry advocates applied not just the substantive provisions of the act, but also the requirements of NEPA that environmental analysis be multidisciplinary as well as comprehensive and "searching," and also the requirements of the ESA of 1973. Hence a variety of procedural and substantive requirements under which national forest management now took place were brought together, often to reinforce each other, as citizens and ecological scientists sought to bring an ecological perspective to bear on decisions made by the Forest Service.

The focus on planning in each national forest soon led to a process by

which forest reform groups with an environmental and ecological perspective organized their efforts around individual national forests. They stepped up their work to investigate and discover in greater detail the circumstances of individual forests, to identify objectives and problems in site-specific terms, and to create citizen-sponsored plans to compete directly with the plans formulated by agency personnel. In each major region of the country, more local groups formed regional organizations that increased their resources and capabilities in developing regional multi-forest strategies and mobilizing wider public support.<sup>46</sup> Several national organizations, mainly those that had joined in developing the citizens' handbook, and in particular the Wilderness Society, developed "citizen support facilities" in order to assist groups with technical advice and resources.<sup>47</sup>

During the 1980s, these organizations steadily increased their presence in national forest affairs, and through their continual engagement with the Forest Service they identified and sharpened a complex of issues that specified the elements involved in an ecological approach to forest management. By the end of the twentieth century, this complex of policies had come to constitute a body of knowledge and objectives that could rightly be described as ecological forestry. Organized forest reform activities and the policies that they shaped are the subject of the next chapter.<sup>48</sup>