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GETTING OUT THE CUT: POLITICS AND NATIONAL FOREST TIMBER HARVESTS, 1960-1995

Introduction

The recent impasse regarding clearcutting of old growth forests in the Pacific Northwest and the concomitant loss of spotted owl habitat exemplifies the continuing debate over national forest policy in the United States. This debate has undergone many shifts since the early 1960s when environmental and recreational interests first began challenging the existing political arrangements evident in national forest policymaking. Public preference for giving more weight to amenity values in U.S. Forest Service decisions ran counter to the prevailing agency ethos favoring timber production as the dominant use within the list of public land management responsibilities, i.e., timber, range, wildlife, water and outdoor recreation (Clary, 1986; Yaffee, 1994).

Historically, the timber policy program closely resembles federal natural resource programs dealing with water (Ingram, 1990), agriculture (Browne, 1990), public rangelands (Culhane, 1981) and mineral extraction (Klyza, 1996). Each was characterized by the emergence of subsystems (also known as subgovernments, policy whirlpools or iron triangles) that restricted participation in policy decisions to public agency administrators, legislators and interest group representatives with shared programmatic concerns. Subsystems maintained a low degree of visibility within the media and the general public and a high degree of stability over time (Freeman, 1955; Cater, 1964). Closed systems of governance of this sort provided a classic example of distributive policymaking where benefits were provided for a relatively small number of individuals while program costs were spread across U.S. taxpayers writ large (Lowi, 1964).

How then are policies altered within systems of limited participation to accommodate new societal perspectives? Some analysts do focus on links between subsystems and policy change (Thurber, 1991; Baumgartner and Jones, 1991), but very little of this few research has been placed within the context of policy frameworks or models. However, one approach that incorporates more information about political actors, institutions and procedures than is typically found in the extant literature is the advocacy coalition framework (ACF) advanced by Paul Sabatier and Hank Jenkins-Smith (1993). Our research objective in this paper is to test and evaluate this approach through an analysis of national forest timber harvesting policies over the past 35 years.

Research Expectations

The basic decisional unit within the ACF is the policy subsystem. Sabatier and Jenkins-Smith (1993) suggest that subsystem operations can be explained through actions undertaken by advocacy coalitions consisting of a large and diverse set of political actors across differing levels of government who attempt to influence developments within a given policy arena. There are often two or more coalitions representing contrasting beliefs about existing programs

and proposals for change. These coalitions tend to be fairly stable over time on controversies involving basic values or core beliefs while secondary aspects of a program are more amenable to resolution through legislative or administrative compromise. Thus:

H1: The lineup of allies and opponents tends to be rather stable on major controversies occurring within a policy subsystem.

H2: Actors within an advocacy coalition will show substantial consensus on issues pertaining to the policy core, although less so on secondary aspects.

A second characteristic of the ACF is its emphasis on the fundamental effect of changing external conditions on a policy subsystem. This happens because of electoral shifts and subsequent change in policy priorities, fluctuating economic conditions or the emergence of unexpected events which are skillfully manipulated by network participants in ways that increase opportunities for reform. The status quo ordinarily prevails unless a sufficiently major change occurs in the external environment to produce a shift in policy. Thus:

H3: Change in the policy core attributes of a governmental action program is achieved because of significant factors external to the subsystem such as changes in socioeconomic conditions, system-wide governing coalitions, policy outputs from other subsystems, and the skillful exploitation of these opportunities by the (previously) minority coalition within the subsystem.

A third characteristic of the ACF is its emphasis on policy-oriented learning. Policy learning may occasionally lead to change in problem areas where advances in technical knowledge have shed considerable light on the usefulness of untested program requirements. It is less likely to produce this result in analytically intractable policy areas where conflict over competing policy views is high and consensus on a methodologically acceptable form of program evaluation is low. Opponents of change view information as simply another weapon in a coalition's resource arsenal that can be deployed to counter arguments offered by prospective policy reformers while reform advocates attempt to use information in a classic conflict expansion strategy aimed at policy brokers or other institutional actors. While the strategic use of information by coalition members is unlikely to influence opposing interests, their primary audience consists of undecided policy actors who can affect policy outcomes. Thus:

H4: Even when the accumulation and deployment of technical information does not change the views of the opposing coalition, it can have important impacts on policy--at least in the short run--by altering the views of policy brokers or other important governmental officials.

A more recent reformulation of the AFC acknowledges the prospective importance of venue-shopping as a tactic occasionally used by advocacy coalitions to alter existing policies (Sabatier, 1995). This is reinforced in recent studies of policy shifts in nuclear power (Baumgartner and Jones, 1991) and public rangeland programs (Davis and Ellison, 1996). Thus:

H5: In the absence of a perturbation exogenous to the subsystem, change in the policy core of a governmental program requires a change in the principle venue of policy-making.

Data and Methods

To analyze fluctuations in national forest policy, we content analyze testimony presented at a sample of congressional committee hearings conducted over the past 35 years. This permits a test of the first two hypotheses through an analysis of (a) the composition and stability of competing advocacy coalitions and (b) the consistency of policy core and secondary beliefs held by coalition members over time. The coding schema provides a means of organizing and classifying testimony that tells us whether organizational learning has taken place as well as between coalition differences coalitions on land use preferences for national forest management.

Other sources of information are tapped to evaluate the remaining hypotheses dealing with the impact of external influences such as new governing coalitions, fluctuating socioeconomic conditions or policy outputs from other subsystems on the timber subsystem decisions. We do this through an examination of government documents as well as studies dealing with the relationships between interest groups, political institutions and timber harvesting decisions.

The Timber Policy Subsystem

Since the Forest Service began managing the national forests in the early 1900s under the charismatic leadership of Gifford Pinchot, it has been guided by a professional ethos and a statutory framework that established timber production as the dominant use of national forest resources (Clary, 1986; Dana and Fairfax, 1980). As the first Chief of the U.S. Forest Service, Pinchot shaped an organizational culture within the agency that enshrined sustainable timber production as its *raison d'être*. This view went unchallenged for several decades while the country's wood needs were primarily supplied by privately owned timberlands. With annual cuts of only 1 billion board feet (bbf), the Forest Service was mainly playing a custodial management role on its roughly 190 million acres until the post World War II era.

A pro-commodity development bias was supported by members of Congress serving on the Agricultural Committees in both chambers as well as the forest program subcommittees within the House and Senate Appropriations Committees. For legislators representing rural forested areas, timber sales to lumber, paper and related industries were favored as a source of jobs for their constituents (Clary, 1986). Accordingly, Congress enacted laws which highlighted the importance of timber harvesting as a dominant use with national forest management decisions. Strong links between communities and national forests were forged in the early 1900s thanks to the adoption of a revenue sharing policy which allocated 25% of timber sale receipts to local governments to support schools and roads. This program was expanded with the passage of the Payments in Lieu of Taxes Act of 1976 resulting in an even more generous formula for cities and counties located near the national forests (Fairfax, 1987).

Another statute contributed a significant economic incentive to the Forest Service for increasing timber harvests at the expense of other resource uses. The Knudson-Vandenberg Act of 1930 altered the normal budgeting process at work in most federal domestic programs by allowing the Forest Service to keep a share of the receipts obtained from the sale of timber

(hereafter referred to as K-V funds) for reforestation costs. But in 1976, this Act was amended by the National Forest Management Act (NFMA). Under the new legislation, the Forest Service was given substantially greater latitude to use K-V funds for a variety of management purposes. However, agency administrators could exercise discretionary authority in spending these monies only if timber was actually harvested (O'Toole, 1988; Wilkinson, 1992).

Another key actor within the forest policy subsystem includes firms involved in the extraction and processing of lumber products. Timber industries benefit greatly from a low cost supply of trees readily available from national forests. Both large industry and trade association representatives have cultivated close ties with members of Congress and administrators serving within the upper echelons of the Forest Service and the Department of Agriculture. Counties with national forests in their jurisdiction are another client group particularly motivated to use any means at their disposal to encourage high timber yields since they receive revenue from the sale of timber in lieu of property taxes (Clary, 1986; O'Toole 1988).

From a resource management perspective, the national forests were not extensively cut until midcentury since national needs were largely met from privately owned timber stands (Dana and Fairfax, 1980). However, the opportunity for a sizeable increase in timber harvests from public forests arose in the post World War II economic boom. The lumber industry was unable to meet the increase in demand from its own stands thanks to an acceleration of timber cutting for war-related purposes as well as questionable silvicultural practices. Consequently, the annual harvest figures from the national forest rose dramatically from prewar historic annual levels of 1 billion board feet (bbf) to 3 bbf in the early 1940s to 4.4 bbf in 1952 and over 12 bbf in 1966 (Wilkinson 1992). Thus, in just 25 years, national forest timber production increased twelvefold. And agency officials were both anxious and willing to fill the role of volume producer, a role it had been yearning to fill since its founding.

A Chronology of Forest Policy Change

From the early 1900s to the early 1960s, the forest policy subsystem was able to dominate the policymaking process. Neither environmentalists nor wildlife groups had yet emerged as a political force to mount a credible challenge on forest policy issues and the federal courts were largely silent on resource management issues affecting the Forest Service. However, two important trends predated shifts in policy. The first was rapid growth in national forest recreational use. As Wilkinson (1992) argues, "the postwar timber boom was paralleled by a recreation boom - total recreational visits to national forests increased from less than 10 million in 1948, roughly the historic level, to 190 million in 1976, a twentyfold increase." Thus, maintaining timber harvesting as a dominant use became a contentious issue when the Forest Service's role changed from custodial manager to volume producer at precisely the same time recreational use of the national forests began increasing sharply (Culhane 1981; Hirt 1994).

A second trend was increasing public awareness of the environment and growing concerns over environmental degradation, disappearing wilderness, and threats to biological diversity. This led to a corresponding rise in public scrutiny of Forest Service management practices. As Cortner and Schweitzer (1993) argue, "The stage was set for a clash between desires to sustain high levels of timber harvest and the public's increasing concern for the environment." The simultaneous rise of these competing trends - high yield timber production versus recreational and environmental values - led to pressures for change in the hallways of Congress (Steen, 1976). From 1960 to 1994, forest policy gradually evolved within three

distinct phases.

From "Dominant Use" to "Multiple Use"

The first phase began in 1960 with enactment of the Multiple-Use Sustained-Yield Act (MUSY). This statute was notable in that it required the Forest Service to consider resource values other than timber production. But it is equally important to note that MUSY preserved agency autonomy. While the new law ostensibly gave equal statutory weight to recreation, fish and wildlife habitat, range, timber, and watershed protection, no guidelines were established for establishing priorities. Once again, Congress left the power of decision up to Forest Service officials to determine how these competing values should be balanced.

From a more strategic perspective, MUSY provided the Forest Service with the legal cover it needed to continue its campaign of timber production while publicly embracing multiple use rhetoric. The letter of transmittal written by Edward P. Cliff from the Forest Service's annual report entitled Report of the Chief of the Forest Service, 1964 illustrates the agency's continuing commitment to timber production:

"(F)orestry measures must be intensified to meet future demands. Annual timber growth is now exceeding the harvest. But the declining supply of larger, high-grade trees and the overburden of low-grade timber are serious problems. There is no room for complacency as we move to meet the rising demands of all kinds [sic] that are being concentrated on the Nation's forest land."

Three important events occurred during this period. Two of these received considerable media attention and were based on an increasingly skeptical view of Forest Service timber management practices. The first was the clearcutting and terracing controversy in Montana's Bitterroot National Forest which led Senator Lee Metcalf (D-MT) to appoint a commission to study Forest Service administrative methods. The committee's resulting report (known as the Bolle Report, 1970) was a scathing document highly critical of Forest Service management practices in general and clearcutting practices in particular. As Wilkinson (1992) points out, the report was unambiguous in its findings:

- "-Multiple use management, in fact, does not exist as the governing principle on the Bitterroot National Forest....
- Quality timber management and harvest practices are missing.
- Consideration of recreation, watershed, wildlife and grazing appear as afterthoughts....
- The Forest Service...needs to be reconstructed so that substantial, responsible, local public participation...can 'naturally' take place."

A second important event was the issuance of the Church Report in 1972 which criticized Forest Service clearcutting in West Virginia's Monongahela National Forest. Issued under the auspices of the Senate Interior Committee, the Church Report provided a set of guidelines specifying where timber harvesting in general should be avoided; i.e., on "highly scenic land, land with fragile soils, land with low reforestation potential, and land where reforestation or environmentally acceptable harvesting would be uneconomical" (Wilkinson, 1992).

If ever there was a window of opportunity for fundamental reform, this was it. Two highly publicized and critical reports lay before Congress lambasting the lack of multiple use management principles guiding Forest Service policy. But after the publicity died down, Congress simply handed national forest policy back to the Forest Service with instructions to undertake "remedial action" based on the findings in the reports. Consequently, these two events might have passed into oblivion with little real change if the third event had not occurred. In 1973, a U.S. district court case, *Izaak Walton League v. Butz*, rendered a decision which outlawed clearcutting on a significant portion of the nation's national forests based on a narrow interpretation of the 1897 Organic Act. Upon losing its subsequent appeal of the case, there was only one course of action for the timber policy subsystem. According to Hirt (1994), "the Forest Service, the timber industry, and their congressional allies began drafting legislation to repeal or revise the 1897 Act."

A More Assertive Congress?

The second period began in 1976 with passage of the National Forest Management Act (NFMA). This law served both above-board and below-board goals. Above-board, a primary objective was to strengthen national forest planning processes by adding to and amending the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 and the Organic Act of 1897 to "improve the quality of multiple use management planning on the national forests and to achieve better integration of management needs with funding;" below-board, it was a congressional end-run around the circuit court ruling, *Izaak Walton League v. Butz*, that had banned clearcutting on significant portions of national forest land. Even though NFMA was compromise legislation that included biological diversity and public participation clauses favored by environmental interests, it was "primarily motivated by the perceived need to legalize clearcutting so that the Forest Service could get back to its task of rapidly liquidating its native forests and substituting even-aged forests of commercial species" (Hirt 1994). While subsystem policy actors found it necessary to make some concessions to environmental interests, passage of NFMA indicated that the Forest Service's commitment to timber production over other forest values was alive and well.

Yaffee (1994) suggests that most of the controversial issues involving national forest policy were specifically related to the exercise of control over national forests rather than turf and partisan battles between the executive and legislative branches of government. Despite the negative publicity generated from several clearcutting controversies, members of the timber policy subsystem were relatively pleased by the enactment of NFMA which incorporated specific annual timber harvesting goals to be met under multiyear forest management plans. This law offered a sizeable carrot to advocates of a larger allowable cut within the national forests but, as Leshy (1992) indicates, a tradeoff was the expansion of Congressional involvement in the decision-making process.

While environmental groups were victorious in a number of NFMA-related issues, they recognized that political leaders were increasingly sensitive to the costs as well as the benefits of new regulatory programs. In 1980, the environmentalists attempted to shift the national forest policy debate from a focus on aesthetics (clearcutting) to economics (below-cost timber sales). The Natural Resources Defense Council (NRDC) spearheaded this assault with its influential report, Giving Away the National Forests: An Analysis of U.S. Forest Service Timber Sales Below Cost (Wilkinson, 1992).

While the programmatic impact of this report was difficult to gauge, it did provide an important counter argument to positions favored by the Reagan administration. Assistant Secretary of Agriculture John Crowell had attempted to appease timber industry officials by increasing national forest harvest levels. While his rationale for higher timber sales was based upon economic efficiency arguments, the environmental coalition was engaged in research that demonstrated the diseconomies of accelerated cutting. This stimulated other research efforts by academic economists, environmental allies such as the Wilderness Society and the Conservation Foundation, the Society for American Foresters and the General Accounting Office. It also gave environmentalists the strategic option of building an occasional alliance of convenience with conservatives wedded to free market principles.

Old Growth, Spotted Owls and the Courts

Beginning in 1987, a third phase began with the spotted owl controversy in the Pacific Northwest. The central issue was whether or not the preservation of habitat for a threatened or endangered species such as the spotted owl should be required if the result was a substantial loss of timber-related jobs in resource dependent communities. Many of the original forested areas in lower lying areas of Washington, Oregon and Northern California had already been cut, particularly the private or state owned timberlands. Very little of the ancient forest remained except on federal lands controlled by the Forest Service or the Bureau of Land Management (Dietrich, 1992).

Industry and Forest Service officials advocated rapid harvesting of old growth timber stands since old and dying trees represented a valuable resource that ought to be developed so that new stands could be planted. They also contended that a sufficient amount of old growth had already been preserved through the designation of parks and wilderness areas. Environmentalists disagreed, arguing that the owl could not be saved under provisions of the Endangered Species Act and NFMA unless large areas of old growth timber were placed off limits for logging operations and set aside for nesting sites. They also took issue with industry estimates of a steep decline in employment opportunities, suggesting that structural changes within the regional timber industry involving the modernization of machinery and the export of unprocessed logs to Japan were more responsible for job loss than environmental regulations (Hoberg, 1993; Wenner, 1993).

Prior to 1987, logging of old growth forests was not on the public agenda. However, things began to change as environmental groups like the Portland and Seattle chapters of the Audubon Society shifted their focus from the RARE II process of wilderness designations to the preservation of large tracts of forested lands within the BLM and Forest Service for spotted owl habitat. Since the Congressional delegation from Oregon and Washington included influential legislators such as Senator Mark Hatfield (D-OR) and Representative Tom Foley (D-WA) who were strongly aligned with the timber subsystem, environmentalists found it necessary to pursue their policy objectives through the federal courts (Wenner, 1993).

Much of the legal work was undertaken by the Sierra Club Legal Defense Fund (SCLDF). While initial efforts to halt federal logging activities were unsuccessful, the SCLDF attorneys eventually found a more receptive audience with U.S. District Court Judge William Dwyer who ordered the Forest Service to comply with the habitat protection requirements spelled out in NFMA. Injunctions were subsequently issued that effectively halted most logging activities on BLM and Forest Service lands. His decisions were subsequently reaffirmed by the Ninth Circuit

Court of Appeals. The environmentalists' use of litigation affected policy in two ways. First, it nationalized the spotted owl issue so that legislators were unable to confine the issue within the region. Second, it shifted the status quo from a position that favored the timber industry to one that benefitted environmental interests.

But the issue continued to percolate on administrative and legislative fronts. In 1989, the Forest Service sought to comply with court orders to produce a more credible habitat management plan for the spotted owl by setting up the Interagency Scientific Committee consisting of representatives from the Fish and Wildlife Service, Park Service, BLM and the Forest Service. The committee was chaired by Jack Ward Thomas, a Forest Service wildlife biologist, and was instructed to produce recommendations for saving the owl based on "good science." The result of their efforts was a 1990 report titled A Conservation Strategy for the Northern Spotted Owl which called for the prohibition of logging on more than 5 million acres of old growth forests that would be designated as "habitat conservation areas" (Wenner, 1993; Wilkinson, 1992). Timber industry officials were dismayed, contending that the likely consequence of implementing these recommendations would be the "immediate loss of 9,000 to 12,000 timber industry jobs with additional job losses in northern California and in supporting industries" (Yaffee, 1994).

Members of the Washington and Oregon Congressional delegation were active as well. Senators Mark Hatfield (D-OR) and Brock Adams (D-WA) succeeded in attaching riders to the 1989 and 1990 appropriations bills for BLM that effectively prohibited the federal courts from issuing injunctions aimed at reducing logging operations in national forests. The 1990 law authorized substantial timber harvesting to occur in areas known to contain viable owl populations and was subsequently labeled "the Rider from Hell" by the Oregon Natural Resource Council (Wenner, 1993). While Congress did not go along with a similar pro-industry rider strategy to circumvent court decisions after 1990, the chronology of events did show interplay between political actors shuttling back and forth in search of a favorable institutional venue (Hoberg, 1993).

The issue of jobs versus the owl eventually spilled over into the realm of Presidential politics. In the 1992 campaign, President Bush actively sided with the lumber firms and workers residing in resource dependent communities in the Pacific Northwest suggesting that jobs ought to take precedence over conservation policy objectives. Interior Secretary Manuel Lujan called for amendments to the Endangered Species Act that would require an assessment of the economic consequences of listing a species as threatened or endangered before any new additions could be made to existing lists. Democratic Candidate Bill Clinton, influenced in part by the strong conservationist leanings of running mate Al Gore, advocated a stronger environmental position that combined an emphasis on preserving the habitat of the northern spotted owl with job training programs for displaced loggers and mill workers in affected communities.

After Bill Clinton was elected President in 1992, a series of events have affected timber harvesting policies within the national forests. His well publicized timber summit which was held in Portland, Oregon in April, 1993 brought all parties together in an effort to provide a brokered solution to the spotted owl controversy. The "Option 9" strategy adopted by the Clinton Administration was a classic compromise solution, setting aside more habitat conservation areas than the timber industry wanted but a larger transitional timber harvest than environmental groups would have preferred. Most of his key administrative appointments, notably Interior Secretary Bruce Babbitt, Assistant Secretary of Agriculture Jim Lyons and

Forest Service Chief Jack Ward Thomas have been well received by environmental groups. Under their leadership, federal land management agencies have pushed for the development of ecosystem management policies as a more environmentally sensitive means of addressing land use allocation decisions.

However, proponents of a stronger emphasis on commodity development received a major boost in the November, 1994 Congressional elections when the Republicans swept control of both the U.S. House of Representatives and the Senate. The new leaders of committees with jurisdiction over natural resource programs are staunch opponents of environmental regulation, have pushed for an accelerated harvest of salvage timber that allows a suspension of protective environmental laws such as the Clean Water Act, promoted takings legislation that would compensate private property rights for costs incurred in complying with resource conservation laws, recommended the abolition of the National Biological Service within the Interior Department, worked to place more emphasis on economic impacts in the reauthorization of the Endangered Species Act and passed budget initiatives with substantial reductions in resource conservation programs.

Advocacy Coalitions, External Events and Policy Change

How can we make sense of the evolution of events and policy decisions? Let us begin with a discussion of three advocacy coalitions involved in national forest policymaking (Sabatier, et al, 1995). The commodity production coalition consists of lumber firms, mill workers, some Forest Service administrators, local government officials and members of Congress representing jurisdictions with a sizeable economic impact from logging activities. Their primary goal is to maximize timber production on public lands and they tend to see secondary land uses as either compatible with intensive management practices such as clearcutting or even enhanced by these activities (e.g., the contribution of logging roads to recreation).

Second, an amenity coalition focuses on the protection of wildlife and the natural environment by limiting the adverse environmental impacts associated with extensive logging of national forests or the practice of clearcutting on public timberlands. It is comprised of environmental and wildlife groups, water quality agencies, game and fish departments, members of Congress supporting natural resource conservation policies and a subset of Forest Service employees favorably predisposed toward the preservation of ecosystems. Third, there is a scientific management coalition largely made up of Forest Service officials who are committed to the ideals of the Progressive Era originally espoused by Gifford Pinchot in the early 1900s. Members of this coalition are firmly committed to the principles of multiple use and sustained yield which are aimed at preserving maximum discretion within the agency to make land use decisions with minimal political interference from political organizations or institutions.

Stability of Advocacy Coalition Membership and Policy Beliefs

We now consider the hypotheses dealing with the stability of coalition membership over time as well as the consistency of their core policy beliefs expressed through legislative testimony. The results of the analysis strongly support H1 but are less supportive of H2. Our findings show that the lineup of allies and opponents was highly stable over the length of the study period. For both the amenity and commodity production coalitions, the same groups appeared at most hearings, often joined by region- ally based groups that were directly

affected by certain policies. The commodity production coalition included the Industrial Forestry Association, American Pulpwood Association, National Forest Products Association, American Forest Council and the Western Timber Association. Within the amenity coalition, long term players include the Sierra Club, National Audubon Society, Wilderness Society, Natural Resources Defense Council, Sierra Club Legal Defense Fund, National Wildlife Federation and the Izaak Walton League. And the scientific management coalition is comprised of the U.S. Forest Service, Society of American Foresters, American Forestry Association, and the International Association of Fish and Wildlife Agencies.

To examine the degree of consensus over time on policy core and secondary beliefs (H2), we compared each advocacy coalition's congressional testimonies across the four decades (1960-69, 1970-79, 1980-89, 1990-95). The data indicate that each coalition consistently supports core values - the commodity production coalition voices support for economic well being, the amenity coalition highlights the importance of ecological health and the scientific management coalition places emphasis on agency autonomy, i.e., leaving forest management decisions in the hands of natural resource professionals. A like pattern is found in the orientation of each coalition to political conflict. While the amenity and commodity production coalitions lean toward their respective emphases on environmental protection and resource development in reacting to political conflicts, the scientific management coalition has been inclined to testify on behalf of a balance between production and conservation activities, particularly since 1976.

We also attempted to determine how each coalition responded in the hearings to the question of accountability for Forest Service decisions. Should agency administrators be more responsive to experts, to the public or to a mix between the two? The commodity coalition has varied considerably on this issue, beginning with a high level of consensus in the 1970s (over 90%) that decisions should be left up to the experts to lower levels of consensus on this matter during the 1980s through the 1990s. It is unclear whether this reflects a straightforward assessment of the relationship between the locus of decision and the likelihood of a favorable outcome or a growing concern that industry testimony demonstrate a more caring "public face" in dealing with public participation or environmental protection.

Conversely, the amenity coalition has shown a more balanced orientation toward the question of accountability. In the 1960s, there was considerable support for the position that Forest Service decisions should represent a mix between expert and public opinion but, in the 1970s, coalition members were evenly split on this issue. From the 1980s to the present, environmentalists and wildlife groups have increasingly voiced support for giving greater weight to public preferences in agency decisionmaking. As expected, the scientific management coalition did not waiver in their belief that agency experts should be given the latitude to make resource management decisions.

In addition to core policy beliefs, we also coded responses to secondary beliefs. What were the most common reasons given by either the amenity or commodity production coalition for supporting increasing timber harvests or environmental protection activities? And to what extent did these responses vary over time? The commodity production coalition did not consistently testify in support of any given belief other than the need to maximize commodity production goals. From the 1960s through the 1980s, maintaining high levels of timber harvests was an article of faith for industry spokespersons but this line of testimony declined substantially in the nineties. In recent years, testimony has been increasingly directed toward maintaining community stability or enhancing forest health, positions that convey the

impression of concern for both resources and people located in or near the Pacific Northwest forests.

Looking at the secondary beliefs of the environmental coalition, we find fairly high and consistent levels of consensus on three of the reasons for opposing timber production goals - its impacts on wildlife, recreation and, to a somewhat lesser extent, water quality. Two other reasons, forest health and the quality of wilderness are cited less consistently. Finally, whether timber harvests are economic unjustifiable is an argument that was cited with some regularity during the 1980s when domestic programs were more frequently evaluated on economic grounds but this issue was not utilized in any of the other time periods.

In summary, our findings indicate that while consensus on some core beliefs is strong and consistent, on others it is neither. All three coalitions, especially the commodity production coalition, appear to have more or less consensus depending on the policymaking context of specific committee hearings. For example, issues that dominated forest politics in the seventies brought much more consensus in most core values to the commodity coalition than the decades preceding or following it. Also, there does not appear to be any significant difference in the levels or consistency of consensus between core and secondary beliefs, especially with the environmental coalition. We conclude that the expression of core beliefs in legislative testimony does not demonstrate the kind of stability expected under H2.

External Factors and Policy Change

The relative consistency of a coalition's membership and core policy beliefs may conceivably affect its ability to alter the direction of policy particularly if core beliefs are in sync with the policy preferences of a new governing coalition. But there are other external factors such as fluctuating economic conditions or change within the distribution of natural resources that can also affect program decisions. In addition, the latter conditions will be exploited by those holding minority views within a subsystem who now see a window of opportunity to push for change. One way of cashing in on opportunities of this sort is through the manipulation of information to influence key governmental officials by demonstrating the harmful effects of the programmatic status quo or by illustrating the positive benefits that are likely to accompany a shift in policy.

The impact of new governing coalitions on policy change affecting the national forests has been mixed. The effects of turnover within the Presidency or Congress are less evident if we try to account for the enactment of major statutes such as MUSY, RPA or NFMA. Each was passed during a Republican Presidential term and, in general, these laws contained substantive changes acceptable to the respective coalitions. The enactment of MUSY in the last year of the Eisenhower Administration was strongly supported by members of the amenity coalition since the new law added recreation and the protection of wildlife as statutorily recognized forest management activities to accompany timber and watershed. Forest Service officials also testified on behalf of MUSY because the Act reaffirmed the importance of managerial autonomy and it effectively ratified a series of programs that had already been created administratively (Culhane, 1981).

In a similar vein, the passage of RPA and NFMA contained much to please the commodity production coalition since ambitious timber harvesting goals were established for each national forest through the implementation of multiyear management plans. But a political price for success was the need to make concessions to an increasingly influential amenity coalition

that pushed hard for provisions allowing public participation in forest planning processes and land use decisions. Moreover, these statutes were not influenced by Presidential politics. Some took several years to pass because of the need for coalition members to muster sufficient support (e.g., MUSY). Others received a significant boost because of decisions made elsewhere. NFMA was enacted, in part, to allow the Forest Service to circumvent a ban on clearcutting in national forests that was issued in the federal district court case, **Isaac Walton League vs. Butz** in 1973.

On the other hand, Democratic Presidential Administrations have been more supportive of ancillary natural resource policies that have placed restrictions on Forest Service timber sales. Policy development of this sort is also consistent with another part of H3 which hypothesizes that one of the external conditions facilitating policy change is outputs from other subsystems. If the presence of an environmental protection subsystem is accepted, then the enactment of natural resource policies of the 1960s and 1970s can be appreciated as a flank attack by the amenity coalition to chip away at existing programs aimed at preserving timber harvesting as a dominant use. Preservationist laws such as the Wilderness Act of 1964, the Wild and Scenic Rivers Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 have created hurdles to the efficient administration of timber harvesting practices.

A particularly good example of a law which takes aim at timber harvesting bias is the Wilderness Act which was originally introduced during the Eisenhower Administration. This proposal was tirelessly promoted by prominent members of the amenity coalition, Wilderness Society officials and Senator Hubert Humphrey (D-MN). But the legislation did not pass until it received support from Presidents Kennedy and Johnson with the help of Interior Secretary Stewart Udall, a strong conservationist. The new law prohibited logging activities in newly created wilderness areas which were largely drawn from roadless tracts of land within the national forests (Allin, 1982). As members of the commodity coalition feared, this legislation has not only resulted in the withdrawal of lands with commercially viable stands of timber but has precluded sales in wilderness study areas as well (Culhane, 1981).

An exception to the partisan trend noted above was the Administration of President Richard Nixon who worked with a Democratic Congress to enact two laws with significant implications for the management of national forests. The National Environmental Policy Act (NEPA) of 1969 required that any proposed federal action with potentially significant impacts on the human environment be accompanied by an environmental impact statement (EIS) which was designed to identify more environmentally friendly project options. More importantly, the preparation of EISs had to be undertaken with input from the public. The citizen participation requirement has since become a major procedural tool for environmental groups seeking to delay or halt national forest timber sales through litigation (Gericke and Sullivan, 1994).

Over the past decade, the Endangered Species Act of 1973 has also affected the volume of national forest timber available for harvesting because of the need to protect habitat for threatened or endangered species. In short, the commodity production and scientific management coalitions have strongly influenced the development of major policies dealing with national forest management. Members of the amenity coalitions have succeeded in wringing some environmental concessions from Congress in MUSY and NFMA but have obtained more significant restrictions on logging through the implementation of related natural resource laws.

What about the effects of fluctuating economic conditions? It is difficult to assess the relative importance of this factor in shaping legislation. On the one hand, legislative testimony

by timber company officials and other coalition members during the 1960s and 1970s reveals relatively infrequent use of arguments pertaining to community economic health. This is not surprising since the driving force behind MUSY, RPA and NFMA was less a product of the economic conditions surrounding timber companies and communities than the desire to achieve greater program efficiency in the management of national forests and to better accommodate commodity and non-commodity land uses. (Hirt, 1994). However, the number of industry initiated references to economic health at Congressional hearings increased considerably during the 1980s and 1990s - a trend that is partially attributable to the spotted owl controversy in the Pacific Northwest.

Quite apart from what Congress does, economic conditions may conceivably influence use allocation decisions within the national forests. Logging activity declined precipitously in the early 1980s because of an economic recession. Consequently, the Forest Service was forced to "[buy] back timber sale contracts in the mid-1980s to avoid contract defaults by timber purchasers" (Hirt, 1994). A similar drop in national forest timber harvests occurred in the late 1980s because of the combined effects of another recession and court ordered cutbacks in Washington and Oregon (Farnham and Mohai, 1995). This is closely intertwined with another factor mentioned by Sabatier and Jenkins-Smith - a decline in the distribution of natural resources, i.e., old growth timber stands and wildlife species such as the owl and the red cockaded woodpecker.

A fourth hypothesis directs attention to the strategic use of information by advocacy coalitions to influence key governmental officials outside the subsystem. There is evidence to indicate that lawmakers have been swayed by reports prepared by forest policy experts. Since research conducted by the Forest Service has often called for increases in the allowable cut, these studies have often been carried out by individuals or groups more sympathetic to resource conservation policy goals. Efforts to pass a wilderness bill in the early 1960s were bolstered not only by the efforts of the amenity coalition but by the release of the Outdoor Recreation Resources Review Commission's report which revealed growing public support for non-commodity uses of the national forests such as recreation, wildlife protection and wilderness (Wilkinson, 1992).

In like fashion, the Bolle Commission Report of 1970 and the Church Report of 1972 were critical of the Forest Service's overreliance on clearcutting as a management tool without considering its compatibility with other management uses. The policy impact of these reports was significant although the pathway to political influence was a rather circuitous route. The most immediate effect can be observed in the Butz vs. Isaac Walton League case of 1973 which, in turn, led to the enactment of NFMA. Conversely, information can have strategic value quite apart from short term policy consequences. The primary value of the Natural Resources Defense Council's report of 1980 titled Giving Away the National Forests: An Analysis of U.S. Forest Service Below Cost Timber Sales was to diffuse arguments initiated by Reagan Administration officials that an escalation of logging in the national forests served policy goals of efficiency and economy. It also signalled a willingness on the part of some members of the amenity coalition to use economic as well as aesthetic, moral or recreation arguments to influence policy debates.

Perhaps the most recent example of a report that produced important policy impacts was the Interagency Scientific Committee which issued the report, A Conservation Strategy for the Northern Spotted Owl. This research was timely since it provided scientific evidence to justify a policy solution for a pressing and seemingly intractable public problem. In addition, as Yaffee

(1994) indicates, the report was written by a prominent scientist, Jack Ward Thomas, whose credibility with lawmakers was quite high. Not only were the findings of this study instrumental in providing the technical foundation for federal court ordered restrictions on logging in the Pacific Northwest national forests but they were of considerable value to Clinton Administration officials in the 1993 formulation of a plan to break the political gridlock associated with the northern spotted owl controversy (Yaffee, 1994).

It is instructive to note that the strategic use of information by the amenity coalition has often been used in conjunction with an effort to find a more favorable institutional venue for policy decisions. To counter the success enjoyed by the commodity production coalition in the core policy provisions contained within MUSY, RPA and NFMA, environmentalists have increasingly turned to the courts to achieve their policy goals (Hoberg, 1993; Wenner, 1993). While we have already discussed some of the more prominent examples such as the Butz vs. Isaac Walton League case and the U.S. District court decrees which upheld environmental laws mandating protection for endangered species, a larger pattern of federal court decisions reveals a rather favorable arena for the exercise of political clout by environmental litigators.

A recent study of federal court cases offered an analysis of the lawsuits brought against the Forest Service for its alleged failure to comply with the procedural requirements of NEPA and NFMA. The authors documented a considerable increase in the frequency of cases brought before the courts for resolution between 1971 and 1993 (n = 99). Most were initiated by environmentalists, followed by commodity groups, Native Americans and government officials. Overall, the data indicated that members of the amenity coalition were more likely to succeed in court than timber companies or other commodity groups (Jones and Taylor, 1995).

However, as Wenner (1993) has indicated, federal court decisions often provide victories that are relatively short term for environmentalists. Industry officials are likely to respond to legal setbacks by seeking political relief elsewhere. One tactic that has been used to circumvent judicial review of agency actions is to enlist the services of a well connected federal legislator to append a rider to appropriations legislation. According to Jones and Callaway (1995), "judicial review measures were attached to the annual appropriations bills for the agency six times between 1984 and 1992, and all of these measures served to prohibit or severely constrain legal challenges of various agency actions, usually timber sales." This zig zag pattern of jockeying for political advantage by the differing advocacy coalitions is consistent with the general thrust of H5.

Discussion

Turning now to the substantive aspects of national forest policymaking over the past three decades, does the newfound influence of the environmental coalition seen in the below-cost and old growth controversies indicate that the once closed timber policy subsystem has been irrevocably opened to public scrutiny and competing demands, or is national forest timber policy still dominated by a commodity production ethic? While the successes of the environmental coalition indicate that the timber policy subsystem does not control national forest policy as completely as it once did, some argue that a continuing emphasis on "getting out the cut" still holds primacy over other forest values. The Congressional Office of Technology Assessment (OTA) found this to be the case in its 1992 report analyzing the "strengths and weaknesses of the forest planning process." The report concluded that:

(1) the development of forest plans emphasized timber and other commodities while giving little attention to sustaining ecosystems; (2) the monitoring and evaluation of forest management activities had been inadequate; (3) budget decisions overwhelmed planning decisions; and (4) output targets imposed at the national level often nullified local management decisions" (Hirt 1994:271).

The OTA findings suggest that the timber policy subsystem is alive and well and that any campaign within the Forest Service to redefine its mission and culture have not filtered all the way up through the decisionmaking hierarchy. Moreover, other decisions such as the transfer of John Mumma, a high ranking Forest Service official who refused to comply with a statutorily mandated target for timber harvests because of its incompatibility with other forest values, are consistent with an interpretation that the timber policy subsystem is still capable of influencing policy outcomes. Thus, as we asked in the introductory section, how can the continued strength of the timber policy subsystem be explained in the face of changing societal values, competing interests, and growing environmental opposition?

This argument is based on an evaluation of structural biases contained within the timber sale program. The funding that the Forest Service receives and the amount of sales receipts counties receive are based on the gross revenue generated from timber sales and not on its overall profitability. Timber industry officials are motivated to minimize their costs by paying as little as possible for national forest timber. Since neither the Forest Service nor counties are overly concerned about the profitability of the timber management program, industry officials are free to set the bid price equal to the least amount the Forest Service will accept (O'Toole, 1988). This tendency is exacerbated by the Forest Service's practice of "cross-subsidization" or combining otherwise nonprofitable timber sales with profitable ones to maximize K-V deposits which, according to O'Toole (1988), actually provides an incentive for the Forest Service to sell timber below-cost.

A second factor contributing to a pro-timber orientation is the incremental nature of the Forest Service's budgeting process. Sabatier et al. (1995) found that when the agency officials developed resource-output levels for NFMA plans, they relied upon recent output levels as their baseline, making only "marginal adjustments" from these levels. While this explanation ignores the importance of how baseline levels were originally set, it does reveal the resistance to change that is built into the planning process. Moreover, the authors suggest that this bureaucratically conservative approach is generally attributable to "the corpus of legal rules, anticipated budgetary constraints (especially on developed recreation), [and] political constraints" limiting the agency's flexibility (Sabatier et al. 1995:234). These findings reinforce the thesis originally developed by Kaufman (1960) that the Forest Service is a top-down organization that can prevent internal change through strict adherence to bureaucratic procedure.

A third factor that explains the continuing strength of the timber policy subsystem is an organizational culture within the Forest Service that has placed considerable value on timber production. The agency was founded on principles of sustainable timber harvesting and has retained that mission with few challenges for nearly 60 years. As Herbert Kaufman (1960) pointed out in his seminal study, the Forest Service has been highly successful at inculcating a value system that gives its members both the "will and capacity to conform" to broad agency policy. And, finally, as we indicated in an earlier section, it is difficult to ignore the shift in partisan control of Congress and the natural resource committees in 1994, a change that has

already given a considerable boost to the development of resource extraction policy proposals and the dilution of existing environmental laws affecting land management decisions.

However, the conclusion that national forest policy reflects business as usual in giving priority to timber in use allocation decisions is not universally shared. There are a number of trends that are viewed positively by advocates of change in the management of national forests. One of these is a gradual shift in the attitudes of Forest Service employees who are unhappy with the thought of complying with timber policies that establish an allowable cut beyond long-term levels of sustainability.

Indeed, this trend has been documented in a several studies that indicate a preference for a more ecologically sensitive brand of resource management (Brown and Harris, 1992; Sabatier, et al, 1995; Mohai and Jakes, 1996). Moreover, foresters who quietly argued that "the ground cannot take this pounding" have become increasingly vocal and public with their discontent over timber quotas set in Washington (Wilkinson 1992). An organizational manifestation of this discontent was the formation of the Association of Forest Service Employees for Environmental Ethics by a disgruntled employee in 1989, to "influence and ultimately change management of the National Forest System by emphasizing ecologically sound management of national forest resources" (Brown and Harris, 1992).

A related development is the increasing number of non-forester professionals within the Forest Service (Yaffee, 1994; Sabatier, et al, 1995). As the agency becomes involved in new tasks as part of an expanded mission, its workforce is by necessity broadened to include many non-forester professionals. Consequently, its ability to control pre-professional educational uniformity and post-entry value conformity as it did when over 90 percent of its workforce were foresters from a handful of universities has been reduced substantially. Nevertheless, it is important to note that with the exception of President Clinton's appointment of wildlife biologist Jack Ward Thomas to the top job in the Forest Service that workforce diversity has largely occurred within the lower ranks of the agency (Yaffee, 1994).

Third, environmentalists and their Congressional allies seeking policy change in national forest management have succeeded in (a the enactment of far reaching policies protecting wilderness, endangered species and wild rivers and (b the integration of procedural toeholds within established policies such as NEPA and NFMA that ensure both public scrutiny and the possibility of litigation. The latter development has led to the use of courts as an institutional venue of choice and has proven useful in efforts to delay or halt numerous timber sales.

Fourth, the above trends have contributed to substantive gains within the Forest Service decisional arena and the national forests. A recent analysis of agency planning decisions over a twenty year period concluded that national forest outputs reflected the interests of several stakeholders besides the timber industries. Other factors that were significantly related to resource management decisions included the land use preferences of national forest supervisors and the influence of environmental and wildlife preservation groups (Sabatier, et al, 1995). Another study indicates that change has slowly affected federal budget allocation decisions as well. Between 1983 and 1992, Congressional appropriations for recreation and wildlife management functions within the national forest system have increased at a considerably higher rate than timber management activities (Farnham, 1995). A consequence of these trends along with court ordered restrictions on logging on national forests in the Pacific Northwest and the Southeast is a substantial decline in the amount of timber offered for sale and harvested. For most of the 1980s, the average annual timber yield in the national forests was 11 billion board feet (bbf) but, by 1993, this figure dropped to 4,6 bbf (Farnham

and Mohai, 1995).

What can we conclude about the usefulness of the ACF in helping us account for change in national forest policy over the past thirty five years? A number of policies affecting the management of national forests have been enacted with both direct and indirect effects. While reform advocates have managed to obtain several programmatic changes that have resulted in more ecologically sensitive forest management practices, the overall package of distributive program benefits favored by subgovernmental participants remains largely intact. Applying the ACF approach to the chronology of events and policy decisions yields several conclusions.

First, the analysis of subsystem participants and their beliefs over time indicated that the membership of the commodity production, amenity and scientific management coalitions remained stable over time. However, we did not find a similar degree of stability for the core policy beliefs within each coalition, particularly the environmentalists. The emergence of new governing coalitions in conjunction with policy outputs from an environmental protection subsystem provided a useful means of accounting for the development of ancillary policies such as NEPA and ESA that have affected national forest management decisions but neither variable was associated with the enactment of key policies such as MUSY, RPA and NFMA. We also found it difficult to link fluctuating economic conditions with legislative policy development although market conditions clearly affect the amount of timber sold and harvested within national forests.

Our findings provide some support for the remaining hypotheses dealing with the strategic manipulation of events and information by members of both the amenity and commodity production coalitions and the ability of industry groups and environmentalists alike to garner short term policy advantage by finding a favorable institutional venue for decision. That change would occur in this way is somewhat ironic since the decisional autonomy wielded by Forest Service administrators was partially attributable to their ability to exercise influence based on technical expertise.

How useful is the ACF in advancing our understanding of advocacy coalitions and policy change? Within the process of tracing key decisions and events, we found the concept of advocacy coalitions to be a useful means of capturing the essence of what Kingdon calls the policy community and that public hearings were a valuable source of information for eliciting core and secondary policy beliefs. It also appears that the range of factors incorporated within the framework is sufficiently comprehensive to identify most if not all sources of influence over policy decisions reached by legislatures or bureaucracies. We believe that the ACF has also been strengthened by incorporating some of the ideas on issue expansion, agenda control and venue shopping found in the work of Baumgartner and Jones (1991). What remains is the need for additional work that reveals the combined or interactive effects of key variables in the process of altering policy direction or content.

Table 1. Key Events in the Evolution of National Forest Policy

1960 Enactment of the Multiple-Use Sustained-Yield Act codifying for the first time multiple-use principles of Forest Service management, including outdoor recreation, range, timber, watershed, and fish and wildlife protection. It greatly expanded the Organic Act of 1897 by putting recreation, range, fish and wildlife on an equal statutory level with timber and watershed uses.

1962 Issuance of the Outdoor Recreation Resources Review Commission's (ORRRC) report supporting recreation, wildlife, and wilderness values in the national forests.

1964 Enactment of the Wilderness Act legislatively designating over 9 million acres of national forests (which had been administratively designated by the Forest Service) as wilderness areas in a Wilderness Preservation System. The wilderness designation preempted the use of these lands for extractive purposes, in effect adding wilderness as a sixth multiple-use category.

1964 Establishment by Congress of the Public Land Law Review Commission (PLLRC) to

study the nation's land laws and make recommendations for change. The industry bias in the Commission's subsequent recommendations alienated environmental concerns.

1965 Enactment of the Land and Water Conservation Fund Act authorizing federal land agencies to acquire land for outdoor recreation, establishing a fund for the purchase of such land, and creating the Bureau of Outdoor Recreation to administer the fund.

1968 Enactment of the Wild and Scenic Rivers Act providing for the protection and preservation of selected rivers in their natural condition, potentially affecting Forest Service timber harvesting practices near those rivers.

1969 Enactment of the National Environmental Policy Act (NEPA) requiring that federal agencies prepare an environmental impact statement prior to starting any major project that has the potential to significantly alter the environment. Since environmental impact statements were to be made public, NEPA opened Forest Service decisionmaking to public participation.

1970 President Nixon instructs the Forest Service to implement the Forest and Related Resources (FARR) plan, a presidential task force report calling for a 50 percent increase of logging on national forests. The FARR recommendations were identical to provisions proposed in a defeated timber industry bill entitled the National Timber Supply Act.

1970 Appointment of the Bolle Commission by Senator Metcalf and its subsequent report critical of Forest Service clearcutting practices in the Bitterroot National Forest in Montana. The Commission's report concluded that the Forest Service had ignored all forest uses outside of timber harvesting and that Forest Service policy did not reflect the changing tenor of the times.

1971 In *Sierra Club v. Hardin*, a federal district court, rejected the Sierra Club's reasoning that the Forest Service's timber harvesting practices in the Tongass National Forest that included cutting approximately 95 percent of the old growth timber did not violate the Multiple-Use Sustained-Yield Act because Congress did not specify in the Act the relative weight to assign to each competing use.

1971 In *Parker v. the United States*, the plaintiff sued to stop the Forest Service from cutting timber on a roadless area adjacent to a primitive area that was likely to receive a Wilderness designation by Congress. The 10th Circuit Court of Appeals ruled that the Forest Service's management options were abrogated by the Wilderness Act, thus prohibiting the Forest Service from implementing timber policies that would change to characteristics of an area that subsequently disqualified them from receiving a Wilderness designation.

1972 In *Sierra Club v. Morton*, the Sierra Club brought suit to stop an alpine ski development plan in the Mineral King Valley of the Sequoia National Forest. Though the Sierra Club lost the case, it was significant because the United States Supreme Court greatly liberalized standing to sue, thus allowing environmental groups to more easily bring suits to stop development projects in national forests.

1972 Far reaching hearings by the Public Lands Subcommittee of the Senate Interior Committee (the Church Committee) and its subsequent report recommending changes in

Forest Service timber harvesting practices barring clearcutting of national forests unless sound silviculture practices justified it.

1973 Enactment of the Endangered Species Act granting the Fish and Wildlife Service the authority to list a species as "threatened" or "endangered" based exclusively on biologic information, thus prohibiting the Forest Service from engaging in any activity that could deleteriously affect the continued existence or alter the habitat of listed species.

1974 Enactment of the Forest and Rangeland Renewable Resources Planning Act (RPA) establishing a long-range and continuous planning process requiring a national forest assessment every 10 years and a 40-year planning program of Forest Service activities every five years. These planning tools opened Forest Service decisionmaking to public scrutiny by creating a forum for debate in Congress. RPA represents Congress' first statute that mandated Forest Service planning.

1975 The Fourth Circuit Court of Appeals upholds the 1973 District Court ruling in *Izaak Walton League v. Butz* against the Forest Service's clearcutting program in the Monongahela National Forest in West Virginia. The Monongahela ruling had broad implications since it applied to all softwood forests within the District Court's jurisdiction. This case also marks a clear reversal of judicial opinion from the 1971 Tongass decision.

1976 Enactment of the National Forest Management Act (NFMA).

1980 Election of Ronald Reagan as President and his appointment of John Crowell as Assistant Secretary of Agriculture.

1980 The Natural Resources Defense Council (NRDC) issues its report on below-cost timber sales entitled Giving Away the National Forests: An Analysis of U.S. Forest Service Timber Sales Below Cost. This report was the first high profile effort by the environmental community to bring this issue to the public's attention.

1986 The Forest Service issues proposed management guidelines to preserve habitat for the Northern Spotted Owl.

1987 The Sierra Club Legal Defense Fund takes the lead in a far reaching and ultimately successful strategy to bring the old growth logging issue to national attention, changing the distribution of political power in the process.

1990 Interagency Scientific Committee chaired by biologist Jack Ward Thomas issues a report entitled A Conservation Strategy for the Northern Spotted Owl.

1991 Judge Dwyer of the Ninth Circuit Court of Appeals enjoined timber sales from old growth forests until an acceptable plan for protecting Northern spotted owl habitat was developed.

1992 Election of Bill Clinton as President and Al Gore as Vice President. Gore is widely

respected in the environmental community for his environmental views.

1993 President Clinton holds his "Forest Summit" in Oregon to help resolve the old growth logging controversy. The conference is notable for the number of high ranking administration officials that attended, including the president and vice president.

1993 President Clinton announces his Forest Plan for the Pacific Northwest which set harvest levels of old growth forests at significantly lower levels than they had been in the 1980s.

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