

# PUBLIC LANDS IS NO USE GOOD USE?



By  
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 **PERC**  
*The Center for Free Market Environmentalism*

# To the Reader

“Is No Use Good Use?” by Holly Lippke Fretwell is the fourth in the PERC series, *Public Lands*. More and more federal land is being set aside for preservation rather than made available for multiple use. However, these conservation set asides often provide neither the ecological or economic benefits that are expected.

The first *Public Lands* report, “The Price We Pay,” examines the fiscal accountability of our federal land management agencies. Although the federal government manages a wealth of natural resources, it consistently loses money on timber, grazing, and recreation. The second report, “Forests: Do We Get What We Pay For?” shows that regardless of funding, our federal land agencies are poor land stewards. Changing incentives and removing

obstacles could improve federal land management. The third report in the series, “Federal Estate: Is Bigger Better?” looks at the growth of federal lands and the deteriorating quality of federal land management.

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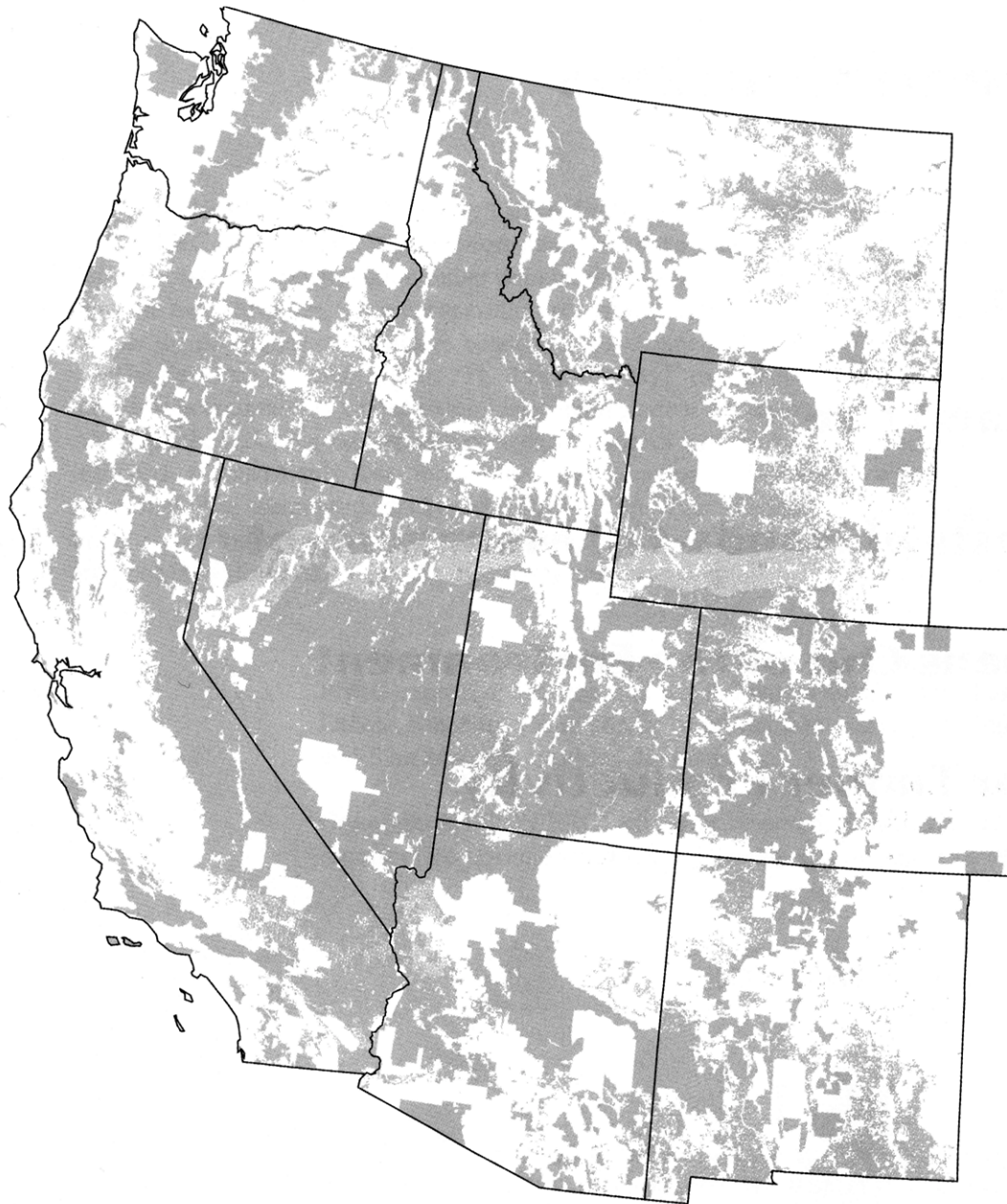
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## Map 1 Federally Managed Land



 Federal land agencies

Note: The four federal land management agencies are the Bureau of Land Management, Fish and Wildlife Service, Forest Service, and National Park Service.

Source: U.S. Geological Survey (2000).

# Introduction

America's public lands are increasingly inaccessible to the public who owns them and pays for their care. Once managed for multiple uses with an emphasis on land productivity, many of our public lands are being set aside for preservation purposes. Resource extraction and a wide variety of other human uses are now prohibited without regard to either the ecological or economic costs. In Washington, D.C., powerful special interest groups are pushing an agenda that values preservation above all else.

The United States government controls in excess of 700 million acres (Fretwell 2000, 3), an area nearly the size of the contiguous eleven western states (see Map 1). One-quarter of the federal estate, 177 million acres, is protected for conservation purposes by the National Park Service (NPS) and the Fish and Wildlife Service (FWS). Since 1960, the amount of land managed by these two agencies has quadrupled.

More than 400 million acres of federal land are managed by the Forest Service (FS) and the Bureau of Land Management (BLM). These lands are mandated for multiple use and sustained yield including timber and mineral production, grazing, recreation, wilderness, watersheds, and wildlife habitat.<sup>1</sup> In spite of this mandate, the use of these lands has been severely constrained in recent years by a growing number of environmental regulations combined with administrative directives, congressional designations, appeals, and litigation.

More and more federal land is being removed from multiple-use management and set aside for the preservation of landscapes, natural ecosystems, and biodiversity. The public needs to be aware of how much land is being set aside to be able to evaluate the ecological, economic, and political consequences of what has essentially become a "no-use" land management policy promoted by well-connected special interest groups.

Several issues merit close examination:

- After centuries of human influence on the forests, allowing nature to take its course is unlikely to restore ecological health to public lands.
- Our land management agencies are dependent upon Congress for funding. This arrangement allows politics to play a powerful role in public land management. Special interest groups with lobbying forces in Washington can in effect direct the management of federal lands, leaving the professional managers working on the land with little control over the resources in their care.
- Set-asides that limit access to recreation and prohibit timber and mineral production also reduce revenues. Hundreds of millions of

dollars in receipts are lost and critical restoration funds that are derived from these revenues are diminished.

- Forests stoked with fuel after nearly a century of fire suppression may benefit more from active management that includes harvest than from custodial management with preservation as the objective. Forests that have burned in recent fires or have been harvested and roaded may also need hands-on management to maintain biodiversity and ecological health.

Today, land preservation is taking place on a grand scale, which carries with it enormous implications for the land and the public who owns it. Now is the time to carefully examine these changes in land management policy to reasonably determine whether no use is good use for the vast federal estate.

# Restricted Land Use

## Congressional Designations

Through the legislative process, Congress has restricted multiple use on more than 20 percent of Forest Service lands. These lands have been designated as national wilderness areas, recreation areas, scenic areas, game refuges and wildlife reserves, wild and scenic rivers, and monuments. The growth in wilderness acres alone has been dramatic. Since the Wilderness Act of 1964 that set aside 9 million acres of Forest Service land as wilderness, another 26 million acres of national forest has been assigned wilderness status.

Acreage under control of the NPS, lands managed for FWS refuges, and use restrictions on BLM lands have also increased. Since 1964, the amount of land congressionally designated in a restricted use category has quadrupled.

## Administrative Designations

Land use restrictions in the form of administrative designations made by the land management agencies are growing even faster. The Forest Service has more than 30 classifications that restrict lands from multiple use: landscape analysis and design areas, areas of critical environmental concern, special management areas, natural areas, semi-primitive and primitive areas, re-

stricted roadless areas, nonmotorized areas, and special interest areas.<sup>2</sup>

In addition, the Forest Service has put together several special plans that cover vast western territories. The Grizzly Bear Recovery Plan covers 23 million acres in the northern Rockies, the Northwest Forest Plan to protect old-growth habitat covers 24 million acres in the Pacific Northwest, and the proposed Interior Columbia Basin Ecosystem Management Project outlines restrictive management alternatives for 63 million acres.

## Executive Designations

Past U.S. presidents have relied on executive designations to set aside lands.<sup>3</sup> President Clinton proclaimed national monuments on 6 million acres, more than double the amount that President Teddy Roosevelt classified under the Antiquities Act of 1906 and second only to President Carter who tallied 58 million acres in Alaska.

Also under the Clinton administration's directive, the Forest Service proposed a protection plan for inventoried roadless areas not designated as wilderness that prohibits road construction and restricts logging on 58.5 million acres of national forests. This will effectively remove 37 percent of the remaining nonwilderness areas on national forests from multiple use. Federal lands designated for restricted use now total approxi-

mately 337 million acres (see Table 1).

Private lands have also come under federal control in the name of environmental protection. Section 404 of the Clean Water Act restricts about 80 million acres of private land to wetland use (Competitive Enterprise Institute 1999, 1). The Conservation Reserve Program pays farmers to keep 33 million acres of private farmland out of productive use. More than 6 million acres of private land are controlled by Habitat Conservation Plans and more than 1 million acres are under Safe

Harbor Agreements. These two programs require landowners to set aside portions of their land for wildlife protected under the Endangered Species Act, but free them from use restrictions on their remaining land.

In sum, more than 450 million acres of land are set aside under stringent land use restrictions by federal mandate (see Map 2). This is an area more than twice the size of Texas or 20 percent of the entire nation. The fiscal and ecological implications of these set-asides are enormous.

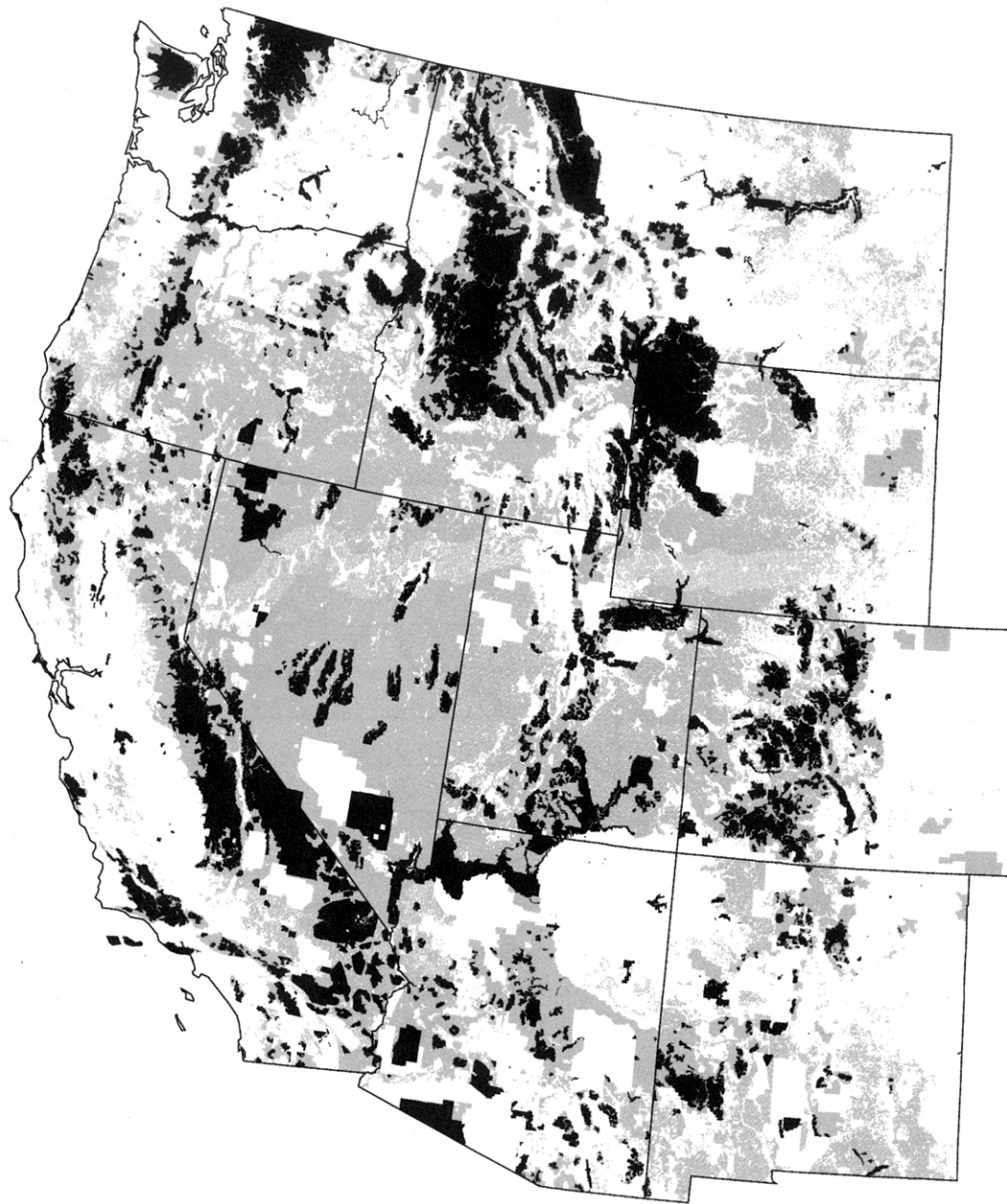
**Table 1**  
**Federal Land Agencies: Designated Use Acreage**  
(million acres)

	1964	2000
<b>Forest Service</b>		
Designated wilderness areas	9	35
Other designated use areas	<u>7</u>	<u>68</u>
Total designated areas (%)	16 (9%)	103 (54%)
<b>All Federal Land Management Agencies</b>		
Designated wilderness areas	9	105
Other designated use areas	<u>57</u>	<u>232</u>
Total designated areas (%)	66 (11%)	337 (55%)

Notes: Other designated use areas include national parks, wildlife refuges, wilderness study areas, areas of critical environmental concern, wild and scenic rivers, research areas, scenic areas, inventoried roadless areas, and other conservation areas. In this report, federal land management agencies refers to Bureau of Land Management, Fish and Wildlife Service, Forest Service, and National Park Service. Total designated areas are presented as a percentage of all agency managed lands.

Sources: Conservation Biology Institute and World Wildlife Fund USA (1999); Fretwell (2000, 2); FS (2000c); General Accounting Office [GAO] (1996, 6); BLM (1997, 9; 1998, 179); Wilderness Society (2000).





**Map 2  
Federal Land Agencies:  
Designated Use Areas**

- Federal land agencies
- Designated use areas

Notes: Designated use areas include wilderness, wilderness study areas, roadless areas, national parks, national scenic areas, wildlife refuges, national battlefields, national monuments, national conservancies, national historic sites, national preserves, national recreation areas, national reserves, waterfowl production areas, and wildlife management areas.

Sources: U.S. Geological Survey (2000); FS (2000d); additional data on new designations provided by Steve Kambly, U.S.G.S. Mapping Applications Center, Reston, VA, by e-mail, April 2, 2001.

# The High Costs of Hands-Off Management

The Forest Service and other federal land management agencies are reverting to a custodial management style typical of earlier times. But this shift from active to passive management comes at great cost. While highly motivated special interest groups are using their influence to lock up national forests, taxpayers are paying the price through shrinking recreational access, lost returns on valuable assets, wasteful government spending, and poor land stewardship.

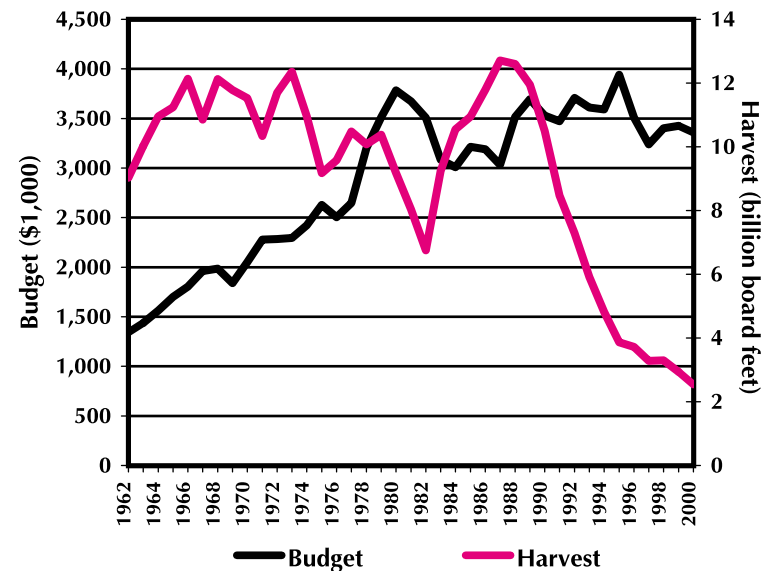
## High Costs, Smaller Harvests

Eliminating logging on public lands will not secure either substantial fiscal or environmental benefits. Although many environmental groups disagree, mounting evidence confirms the lack of benefits. Whether these public lands are providing commodities, recreation, wilderness, or biological diversity, federal management of the national forests is not cheap.

Since the late 1980s, timber output has declined 75 percent, but the costs of the timber program show no reciprocal decline. The cost of offering one thousand board feet of timber for sale has risen from \$53 to \$182 (O'Toole 1998, 2000) at the same time that timber receipts have declined from an inflation-adjusted \$1.8 billion to around \$500 million (FS 1999, table 52). The overall agency budget has continued to hover around

\$3.5 billion annually since 1988 even as timber output and revenues have fallen (Office of Management and Budget 1999). See figure 1.

**Figure 1**  
**Forest Service:**  
**Budgets High, Harvest Declining**



Note: Annual budget data in 1999 dollars.

Sources: Budget data: Office of Management and Budget (1999). Harvest data: Jim Culbert, budget assistant, U.S. Forest Service, Washington, DC, by fax, March 31, 1998; FS (2001).

## Zero-Cut Not a Solution

Many special interest groups maintain that halting all timber harvests on national forests will restore these forests to ecological health. Through the use—or abuse—of the public input process, these groups are in effect setting federal land management policy and making scientific management by agency professionals irrelevant.

In Santa Fe, N.M., the Forest Guardians (2000), a nationally known, zero-cut advocacy group, has dedicated itself to ending all commercial logging on federal lands. One mission of the group is to “prevent these abuses [timber sales, grazing and mining permits, and oil and gas leasing] through strategic appeals and litigation.” And yet in 2000, fires burned out of control in nearby Los Alamos, N.M., incinerating many of the forests this group hoped to preserve through zero-cut policies. In the aftermath, the group’s executive director, Rex Wahl, sees the situation differently: “[J]udicious cutting of small trees is what’s needed” (*Billings Gazette*, August 18, 2000) to prevent future catastrophe.

Certainly, some timber sales are intended to supply commercial timber, but others are for stewardship and restoration purposes. In 1997, 40 percent of all timber sales were designed for stewardship purposes; still many of these sales were postponed or precluded by litigation and appeals (FS 1998a, 10).

In many cases now, the public input process required in national forest management is dominated by special interest groups such as the Forest Guardians and other like-minded groups. As a result, there has been a virtual halt to rational forest planning and management. When managers are forced to abandon timber harvest goals because of burdensome litigation costs and political repercussions, environmental objectives also suffer.

**Less restoration.** Not widely known is the fact that about half of all timber receipts are used for forest restoration. These activities include reforestation, stand improvement, habitat enhancement, stream restoration, trail and road maintenance, facility construction, and the list goes on (GAO 1998, 16–19).<sup>4</sup> Without the timber sales, revenues used for forest restoration and rehabilitation are also lost. A portion of sales receipts are deposited into the Knutson-Vandenberg (K-V) Fund and made available to field managers for ecological management. This fund was established in 1930 to protect and improve all resource values on timber sale areas. Often these are the only monies available to managers for stewardship activities, yet obstacles to harvesting have led to a 50 percent drop in K-V funds since 1995.<sup>5</sup>

Lack of funds has become a major problem on many national forests. Santa Fe National Forest Supervisor Leonard Atencio attributes his lack of stewardship funds to the steep drop in commercial logging revenues.

Though he should be thinning about 25,000 acres annually, he has staff and money to thin just 2,000 acres (*Missoulian*, October 15, 2000). Without the K-V funds, restoration objectives will either be sacrificed or achieved in a more costly manner through the appropriation of tax dollars.

Tying stewardship funds to harvests, however, is not a formula for responsible forest management. This long-standing institutional arrangement places managers in an untenable situation, allowing them virtually no flexibility to manage their forests in a professional manner for its highest-valued use.

**More litigation.** In cases where funds are available, litigation and appeals continue to block efforts to protect forests using hands-on management. A pilot project to restore national forest land surrounding Flagstaff, Ariz., is just one example. About 1,500 acres of forest burn each year near Flagstaff threatening community health, the economy, and the ecological integrity of the forest. To deal with this problem, several groups including the Forest Service, the Grand Canyon Trust, and Northern Arizona University, as well as numerous local, state, and county officials came together to form the Grand Canyon Forests Partnership. This collaborative partnership set out to analyze 10,000 acres annually and come up with a plan that would return natural ecosystem function to the urban-wildland

interface. Appropriate treatment would reduce the risk of catastrophic fire and serve as a demonstration project for other communities.

Implemented in 1998 and exempt from public input and appeals, the first project compared different restoration prescriptions on a 300-acre plot. Based on the information gathered in the first project, the second project was designed to treat 9,000 acres and to be the first in a series of landscape-scale ecosystem restorations. So far, three appeals and one lawsuit have been filed against the completed environmental assessment and another lawsuit is expected. Appellants include the Forest Guardians, the National Forest Protection Alliance, and the Forest Conservation Council. Meanwhile, catastrophic fire near Flagstaff does more damage every year to habitat for the endangered goshawk and the Mexican spotted owl than any other forest activity. Tunnel vision by zero-cut environmental groups has prevented even well-researched experimental programs with broad community support from proceeding.<sup>6</sup>

Throughout the West, other projects to reduce fire risk through thinning or to salvage fire-burned timber are meeting a similar fate. In the fall of 2000, the Flathead National Forest in Montana withdrew one of its largest timber sales. The project would have thinned a dense, 3,000-acre ponderosa pine forest in order to restore the open-canopy typical of its historical struc-

ture. The sale was withdrawn when two environmental groups filed a lawsuit to require a supplemental environmental impact statement.

In the Blue Mountains of Oregon, harvest on the Wallowa-Whitman National Forest declined from nearly 300 million board feet a year in 1987 to less than 50 million in 1997. At the same time, loss to bug depredation is growing. Although insects are a natural part of the forest, years of fire suppression and other past management practices have left the forest extremely dense and thus highly susceptible to insect infestation and disease in epidemic proportions (Fretwell 1999a).

In 2000, the Forest Service withdrew 56 timber sales on dozens of national forests across the South. Though many of these sales were intended to create habitat and restore ecosystems for endangered, threatened, and sensitive species, they were challenged by the Sierra Club and other environmental groups. A habitat restoration project on the Ouachita National Forest in Arkansas for the endangered red-cockaded woodpecker was just one of the resulting abandoned sales (McCabe 2001, 4).<sup>7</sup>

Experts on forest health from many backgrounds agree that the national forests cannot heal themselves within a relevant human time frame. Fire ecologist Steve Arno suggests: “With management—thinning, harvesting, and a carefully controlled burning program designed to encourage growth of native plant and tree

species—we can slowly reduce the risk of severe wildfires and disease, creating a more natural range of conditions, which is the first step in ecosystem restoration” (quoted in Peterson 2000, 14). As a former chief of the Forest Service and a wildlife biologist, Jack Ward Thomas says: “Biologically speaking, eliminating harvesting, while continuing to control wildfires, would have significant adverse effects on bird and mammal species that thrive on early succession forest conditions” (quoted in Peterson 2000, 14).

## Obstacles to Forest Management

Many Forest Service officials fear that the Clinton administration’s roadless initiative will hamper their ability to restore and maintain ecological sustainability in inventoried roadless areas (GAO 2000, 28). These lands were identified in a 1979 inventory of roadless areas, and under current forest plans, 20.5 million of these acres are already off limits to road construction. The roadless plan will effectively restrict harvest and multiple use on nearly 60 million acres, or one-third of national forest land.

Just one month prior to the roadless proposal, a Forest Service report recommended that 10 million of these roadless acres be treated to reduce fire risk (FS 2000a, 3–99; GAO 2000, 14). It further identified 20

million roadless acres at moderate to high risk to catastrophic wildfire and 7 million acres at risk to high tree mortality from insects or disease.

While many environmental groups applaud the roadless rule, the long-term consequences could be devastating. In Idaho, the Payette National Forest will be forced to abandon plans to restore an overly dense ponderosa pine forest. In California, the Shasta-Trinity National Forest will be unable to reduce hazardous fuels in a key watershed containing critical habitat for the threatened northern spotted owl. In Colorado, the Routt National Forest will forgo thinning of roadless areas immediately adjacent to private dwellings, leaving the forest highly susceptible to catastrophic wild fire (GAO 2000, 25–26). Though the final rule allows harvesting and road construction for stewardship purposes, forest managers fear most projects will be prohibited under the logging restrictions.

**On-site expertise.** Washington’s one-size-fits-all roadless plan will supplant many local plans that are based on years of site-specific analysis and research. Under the existing plans, little road construction or harvesting could have taken place within any inventoried roadless areas. Existing forest plans and regulations are responsive to individual forest conditions and local concerns, but now they will be superseded by the directive from Washington.

## Overhead Trumps Resource Protection

As regulations continue to increase, more resources are being concentrated in the Forest Service’s Washington office while staff and funding for field offices are being reduced. Since 1991, the budget at the Washington headquarters has increased 118 percent more than inflation. In this same period, six of nine forest regions have seen their budgets decrease anywhere from 10 to 39 percent.<sup>8</sup> In 2000, Montana’s Gallatin National Forest lost a 13-member trails crew due to reduced staff funding for the region.<sup>9</sup> Likewise, in Washington State’s Mount Baker-Snoqualamie National Forest, a trails crew that once numbered 60 dropped to 20 when the budget declined from \$3.8 million in 1994 to \$3 million in 2000 (Forsgren 2000, 1).

Clinton’s roadless initiative cost \$7.6 million for planning alone in 2000.<sup>10</sup> Furthermore, the new rule made years of costly study and forest planning at the local level irrelevant.

Not only have costs increased with added regulations and restrictions, but so have confrontations between the agency and the public. The late Senator Hubert Humphrey sponsored the National Forest Management Act for the very purpose of involving the public in Forest Service planning and reducing conflict. Humphrey said the act would mean that “forest

managers could practice forestry in the forest and not in the courts” (quoted in Fedkiw 1996, 193). Ironically, increased public participation has only intensified the debate over federal land use. The number of appeals rose from more than 1,000 per year at the end of the 1980s to more than 2,600 by 1993 (Fedkiw 1996, 193, 212).

Costs to prepare timber sales on national forests have increased by as much as 25 to 33 percent from the late 1980s to the early 1990s. The Wallowa-Whitman National Forest is a typical example. By 1992, the aggregate timber management costs on the Wallowa-Whitman were \$125 per thousand board feet. The comparable cost to produce a thousand board feet of lumber for industrial producers was \$53, for the Bureau of Indian Affairs \$25, and for the Idaho Department of Lands just \$9 (McKetta and Weiner 1994, 11). “Appeals and court actions became costly major obstacles to achieving the congressionally established and funded timber targets” (Fedkiw 1996, 140).

The public input process allows private individuals and special interest groups to halt timber sales and harvests without regard to the forest plans and the science that supports those plans. The taxpayers, the Forest Service, and the ecological integrity of the forest pay a high price, while those filing the appeals pay relatively little.

## **ESA Backfires on Species Protection**

The Endangered Species Act is often blamed for restrictions on land use as well as reduced harvests. A battle to preserve habitat for the northern spotted owl, a listed threatened species, prompted years of litigation and delayed timber harvests in the forests of the Pacific Northwest. To “end the gridlock within the federal government,” 24 million acres of federal land were reserved under a newly created Northwest Forest Plan (FS 1994, 3). Most of that land, 19 million acres, was preserved for old-growth habitat, while timber harvest was allowed on the remaining 5 million acres.

Yet even in the areas where harvest is permitted, timber removal has been nearly eliminated. It was anticipated that 1.1 billion board feet of timber would be harvested every year from within the forest plan boundaries, but in 1998, barely half that amount was offered for sale. During the 1980s, typically more than 4 billion board feet of lumber were removed annually from that area.

One cause for the harvest delay was the plan’s requirement that field surveys and inventories be conducted for the presence of more than 400 species of plants and animals before any action could be taken (FS 1994). However, adequate scientific survey procedures to detect some of these species are still not available today. Despite a good-faith effort to satisfy concerned

special interest groups, court injunctions continue to prohibit timber sales.

The concept of preserving habitat in an effort to prevent changes appears to be fundamentally flawed. Paintings can be preserved, but nature is dynamic. With or without human influence, the natural environment will change. In the Shasta-Trinity National Forest, old growth and late seral reserves were “preserved” (left unmanaged) under the Northwest Forest Plan. Because the forest is wrought with disease and insects, weakened trees fall to the forest floor. Each lost tree thins the overstory, which reduces the closed canopy. This in turn eliminates habitat for those species that require a mature forest—not a dead and dying forest. Tree mortality is expanding at a rate of more than 300 acres per year, but managers are unable to respond because of the forest’s reserve status (Fretwell 1999a, 12). Meanwhile, old-growth species such as the northern spotted owl must look elsewhere for habitat.

## **Recreation Facing New Limits**

Even recreationists are feeling the effects of more restrictive land management policies. The national forests are the most widely used federal lands for recreation, and driving for pleasure is the number one use of those lands (FS 1998b). Nearly every visitor to

the national forests uses the extensive road system, and 99 percent of road use is by recreationists (FS 2000b, 3–126).

As the population in western states grows, so too does the demand for recreation on the national forests. Yet, designations such as wilderness or wild and scenic limit the type of recreation that is possible. The Forest Service is also allocating more funds for road obliteration. Both of these policies limit public access and, as a consequence, more and more people will be recreating on less and less land. Concentrated land use increases degradation and diminishes the quality of the recreational experience.

In some experimental areas, the congressionally mandated Fee Demonstration Program has helped managers recognize and respond to the growing demand for recreation. Implemented in 1996, the plan allows 100 test sites in each of the federal land management agencies to keep 80 percent of the fees collected at the site. These revenues are used at the manager’s discretion to protect the resource, cover the costs of recreation, and address visitor demands (see Fretwell 1999b).

Recreation use fees can help managers determine which roads and sites are appropriate for recreation and which are better left for other uses. They also help land managers weigh the benefits of roadless areas against the impact of more recreation on fewer accessible lands.



# Taking Humans Out of the Environment

Leaving our national forests untended is not the equivalent of keeping them wild. Dating back hundreds, even thousands of years, man has influenced forest systems through the use of fire. Fire suppression and other past management practices have significantly altered the ecological structure of many forest lands. Today, these forests are more susceptible to wildfire, insect infestation, and disease (see Map 3).<sup>11</sup> The wildfires of 2000, which were preceded by other years (1988, 1994, 1996, and 1999) of devastating wildfire, are strong evidence that the health of our federally managed lands has been compromised.<sup>12</sup>

According to the Forest Service's own calculations, 67 million acres of national forest land are currently at risk of catastrophic wildfire and 24 million acres are at risk of insect infestation and disease that can lead to high tree mortality (GAO 2000, 14). Assistant Director of Planning for the Forest Service Douglas MacCleery (1999, 4) says: "[t]he twin problems of fuel build-ups and declining forest health, and their effect on ecosystem diversity and sustainability, are likely to be the single most significant environmental challenges facing federal forest managers over the next two decades." Shifting to custodial management now would only exacerbate the situation. "There is no essential nature out there waiting to be saved," says Nancy Langston (1995, 300) ecologist and professor

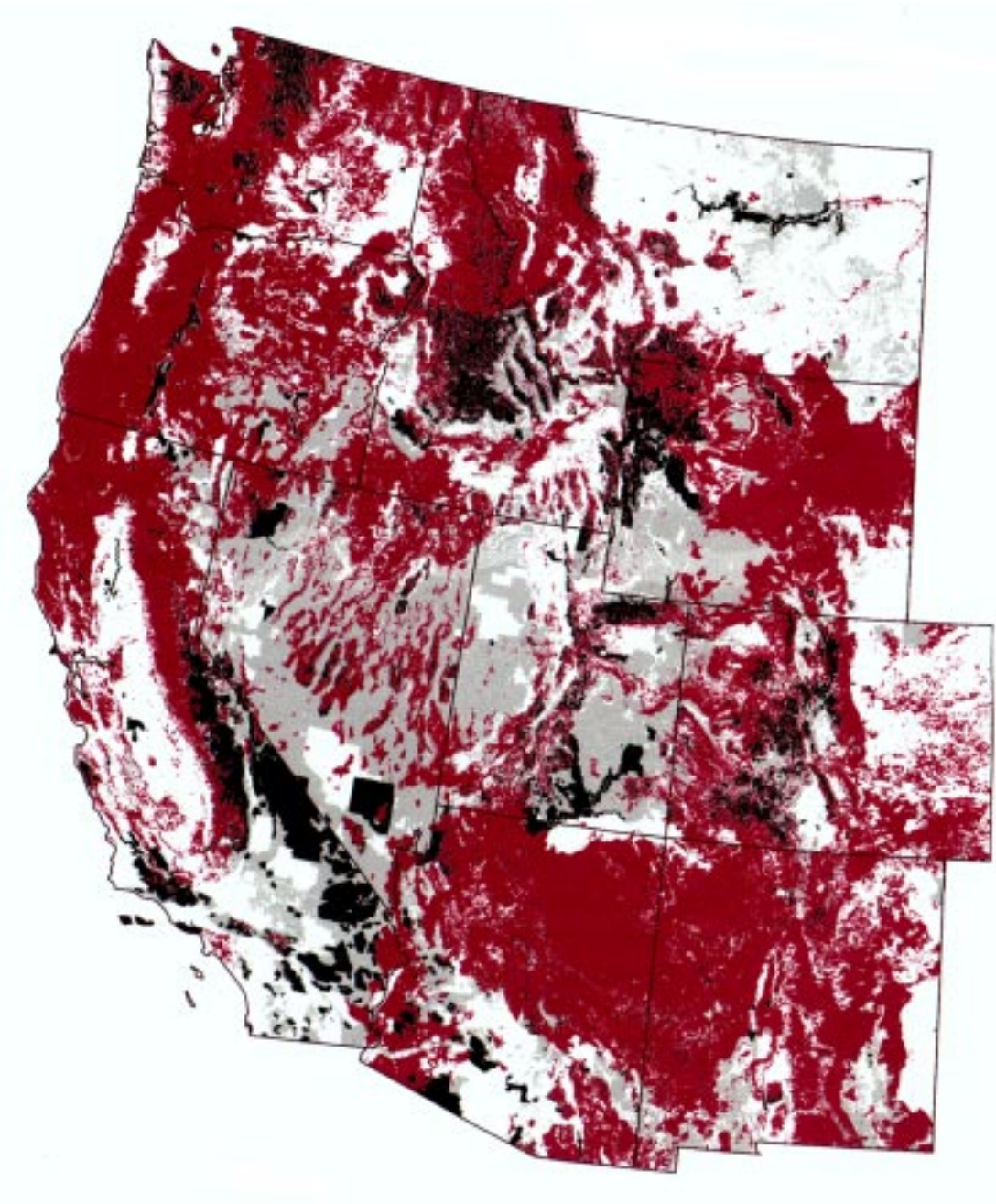
of environmental studies at the University of Wisconsin. Timber harvesting and livestock grazing are not inherently bad; rather it is poor management that is responsible for damaging the ecological integrity of many forests and grasslands.

## Forest Lands in Jeopardy




In the West, ponderosa pine forests that historically carried 70 trees per acre now have as many as 700 trees per acre (*Missoulian*, October 15, 2000). Competing for sunlight, nutrients, and moisture, the trees are smaller and denser, making them more susceptible to insects, disease, and wildfire. In the past, random wildfires created small openings among the trees allowing plants to grow that were forage for wildlife. Today, the dense closed canopies of these forests provide habitat for completely different species.

In the Midwest, forests of upland oaks benefitted from occasional fire disturbance that reduced competition (Olson 1996). These open forest types have become closed stands, a process that alters the composition of the forest and reduces the diversity of species.

In the South and East, where many national forests are second or third growth stands, closed canopies are forming from lack of disturbance. Controversy over logging has so restricted harvests that once common



**Map 3**  
**Altered Ecological Systems**

-  **Federal land agencies**
-  **Designated use areas**
-  **Altered ecological systems**

Note: Altered ecological systems are areas where ecological function has been significantly or moderately altered, as defined by the historical natural fire regime.

Sources: U.S. Geological Survey (2000); FS (2000d); additional data on new designations provided by Steve Kambly, U.S.G.S. Mapping Applications Center, Reston, VA, by e-mail, April 2, 2001.

early successional habitat is declining and the species dependent upon it are now imperiled. For example, the golden-winged warbler has been extirpated from Cherokee National Forest in Tennessee (McCabe 1999, 1–2).

Even at high elevations where the effects of fire exclusion are less profound, some forests have undergone substantial ecological changes. Aspen communities have declined, meadows and openings have diminished in size or disappeared, and existing forest stands have overstory trees that are older on the average than historical trends. Some lodgepole pine forests that evolved with less frequent, but more intense wildfires, are growing into more unified stands with little diversity. “The ecological diversity and ‘patchy-ness’ of the forest landscape has been reduced,” according to MacCleery (1999, 28).

Without fire disturbance or timber harvest, all these forests are moving toward even-aged, mid-succession forests that are less diverse than either young or old forest stands. Few species find their sole habitat in mid-succession stands (Peterson 2000, 14).

It is argued that the forests would return to a more “natural” state if left alone. Given several hundred years and nature’s resilience, such a plan probably would return a “natural” forest. This type of hands-off management has consequences, as University of Washington forest ecologist Chadwick Oliver explains:

In a few hundred years, a more natural range of forest species would probably re-emerge, but there would be great suffering in the meantime. In many places, the air we breathe and the water we drink would be polluted; exotic plants and animals would invade our forests; lives would be lost and millions of acres of native habitat would be destroyed. (quoted in Peterson 2000, 15)

The city of Denver has already suffered the consequences of hands-off forest management. In 1996, the 12,000-acre Buffalo Creek fire destroyed the city’s main watershed. The rains that followed sent a 20-foot wall of water into the reservoir leaving a 17-foot sediment bank against the dam and taking two lives. In the five years since the fire, there have been thirteen floods so severe that they were classified as 100-year flood events. Denver has spent more than \$3 million to restore its watershed and expects to spend at least \$8 million more.

Without some form of human intervention, wildfires will continue to devastate forests that have been made more vulnerable to such catastrophic events through years of human management. And the aftermath of these fires can be as bad as the fires themselves and longer lasting. Bare, burned soils erode in seasonal

rains. Sediments clog streams and muddy reservoirs destroying fish populations and damaging drinking water for large populations.

## Dense Forests Reduce Water Flow

One of the original reasons for the establishment of national forests under the 1897 Organic Act was to secure “favorable conditions of water flows.” National forests are the single largest source of water in the United States (FS 2000e, 2). The extremely dense forests that are common place today consume far more water than the sparser forests of the past. The result is less water flowing off the forests into streams to meet the growing demand for water.

National forests are about 30 percent denser today than in 1952 and provide less water for downstream tributaries and streams (Wagner 1998, 6). Average water flow on the Platte River has declined 15 percent under Forest Service management.<sup>13</sup> This decline has been devastating to numerous species dependent on the Central Platte River in Nebraska. As a result the whooping crane, least tern, piping plover, pallid sturgeon, and others are listed as endangered by the FWS.

The river’s flow could be restored through timber management at the river’s headwaters. The Medicine Bow, Arapaho, Roosevelt, and Routt national forests all

manage a portion of the Platte River watershed. The forest plans all indicate that increased water flow to the Platte River system can be provided without degrading water quality. Watershed research demonstrates that timber harvesting and vegetation removal can increase water yield (Bosch and Hewlett 1982). Without increasing stream sedimentation, timber harvesting can increase flows by as much as 50 percent (Troendle, Wilcox, and Bevenger 1998, 15).

The additional water needed could be supplied if the Forest Service met its timber targets in the region.<sup>14</sup> Instead, national forest timber sales have been well below those called for in forest plans. The national forests in the Platte River headwaters are being managed in a way that will continue to increase forest density and decrease water yield. These reduced stream flows affect recreation and agriculture, as well as wildlife.

Timber management has been used successfully to augment water supplies in other areas. The Boston metropolitan area draws significant supplies of water from the Quabbin Reservoir, which was built in the 1930s. By 1970, there were plans to expand the water system by diverting water from the Connecticut River at a cost in excess of \$80 million. Seeking a more cost-effective alternative, Quabbin forest managers proposed increasing the available water by increasing the forest harvest. By clearing stands of red pine to

create meadows, more water flowed into the reservoir. This forest treatment combined with conservation measures<sup>15</sup> enabled the existing reservoir to meet growing water demands.<sup>16</sup> The managers continue to maintain a healthy and diverse forest cover including critical habitat for more than 30 threatened or endangered species. This was the first public forest in the United States to be certified as practicing “sustainable management” by the Forest Stewardship Council.

## **Conflicting Management Goals**

A shift toward preservation without corresponding changes in timber harvesting goals has put the Forest Service in a difficult position. While the amount of national forest land available for timber harvest has been reduced, forest managers are still expected to generate revenues from the timber sales program. Easily accessible and already cut-over areas are under intense pressure to meet multiple-use objectives. Meanwhile, harvesting is discouraged on overly dense and less accessible forest lands.

The overall effect has been detrimental to the ecological well-being of the forests. Concentrated harvest puts pressure on other forest resources, environmental concerns are magnified, and mitigation efforts increase costs (Fedkiw 1996, 140).

A case in point is Montana’s Bitterroot National Forest, where wildfire burned 335,000 acres in 2000. Cathy Stewart, the former forest manager of the Bitterroot, wanted to treat a roadless area of the forest containing high biomass accumulation. Selective harvest and brush removal would have provided openings for wildlife, encouraged forage, and reduced the dense structure of the forest. The goal was to restore the forest’s natural resiliency. Despite the sound science behind this proposal and others like it, public input and controls imposed from Washington, D.C., make this type of active management in remote areas a near impossibility. It is also more expensive to negotiate sales in remote regions. Instead of basing her decision on the scientific evidence, Stewart made a pragmatic decision based on politics.<sup>17</sup> Agency resources were dedicated to treating more accessible acres at a lower cost in order to meet target goals.

## **Consumption Exceeds Production**

The use of timber products in this country has not declined, but national forest harvests have been reduced by more than 9 billion board feet annually since the late 1980s. Every year, the typical U.S. citizen consumes wood and wood fiber products equivalent to the production from a 100-foot tree (Stalling 1996).

While national forests contain 37 percent of the nation's softwood timber supply, they are producing only 5 percent of our consumption.

Timber harvests on federal lands in Oregon and Washington have fallen from more than 6 billion board feet per year in the late 1980s to 300 million board feet today. This is in one of the most productive timber growing regions in the world. One acre of forest in the Pacific Northwest provides as much timber as four or more acres elsewhere.<sup>18</sup> To restrict harvest on 20 million acres here may mean that as many as 80 million acres will be harvested somewhere else.

As more and more federal timberland in the West is declared off limits for commodity production, supplies from other regions and imports from abroad have risen. Environmental degradation in these areas has also risen.

Southern timber suppliers are trying to fill the gap. Private industrial harvest in that region now exceeds

annual growth for the first time in 50 years.

**Harvest abroad.** Timber imports have increased 33 percent since 1990 (Bureau of the Census 2000, 689), forcing other countries perhaps less suited to timber production to carry the associated environmental burdens. By locking up productive timberlands in our own country, we are exporting environmental damage to others (Sohngen, Mendelsohn, and Sedjo 1999). Many wood-exporting countries have little regard for forest health or environmental protections. The use of wood substitutes is also likely to rise, although the production of cement, steel, and brick can be far more environmentally damaging than growing trees (Consortium for Research on Renewable Industrial Materials 1976). These additional costs, generally ignored by the political operatives, should be a factor in public land management decisions.

# Managing for Timber Productivity

While federal land managers struggle to achieve stewardship goals in a politically driven agency mired in regulation, forest health is increasingly at risk. Private timberlands, however, generally exhibit health and vigor (Clark and Sampson 1995, 2). Landowners who grow trees for commercial harvest have a long-term commitment to the value of the timber and a strong incentive to manage for a productive forest.

Port Blakely Tree Farms of Seattle, Washington, is just one example of resource protection in the private sector. In the timber business since 1864, the company can attribute much of its longevity to careful management of the resource. Similarly, timber giants such as Weyerhaeuser, Boise Cascade, and International Paper Companies have owned private tree farms for many years. They have a clear incentive to maintain the value of the forest land.

Timberland owners have also begun to capture more than just the value of the timber. Recreation, watersheds, and habitat are assets that have generated revenues and insured good stewardship. For example, charging fees for public access to these private lands

has created an incentive for landowners to provide more and better recreational opportunities such as camping and hiking, as well as wildlife habitat for better quality hunting and fishing (Fretwell 1999a, 18).

Many conservation groups and land trusts have achieved their organizational goals through fee simple ownership.<sup>19</sup> The Audubon Society's Washo Reserve in North Carolina provides habitat for the endangered red-cockaded woodpecker (Fretwell 1999a, 22). The Nature Conservancy owns and manages more than 4 million acres of land for the preservation and protection of rare and endangered species and habitats.<sup>20</sup>

The key to private conservation is the stake the owner has in protecting the property. The same principle could be applied to public conservation. By cutting the ties to special interest groups and the politicians who do their bidding, land managers could focus on land management and be held accountable for the quality of that management. Good stewardship would be the goal for these managers as opposed to the current system where securing their budgets every year through deft political maneuvering is their crowning achievement.

# Conclusion

Multiple use as the guiding principle for public land management is a genuine effort to meet the widely divergent demands of the American public. This concept is as valid today as it was nearly forty years ago when it was first introduced to federal land management.

The difficulty arises in determining what the best uses are across such a vast and varied landscape. Without market prices to set a value on the many alternative uses, managers have difficulty evaluating and responding to the trade-offs. For example, with no relative value on water, land in a watershed may be restricted from harvest. Such a regulation would prevent management from thinning a forested area to increase water yield for a growing urban center. Similarly, public land might be used for intensive recreation without regard for the increased erosion and stream sedimentation that would likely degrade water quality.

Setting aside vast tracts of public land surely misses the mark both economically and ecologically. The Clinton administration's roadless initiative, which set aside nearly 60 million acres in one fell swoop, ignores the unique qualities of the national forests. Some land is certainly better left "untrammelled by man." Other areas, however, require hands-on management to treat existing problems or to address future conditions resulting from fire, disease, insects, or hu-

man use that could threaten the integrity of the forest.

A better approach for managing the federal estate is to get the information and the incentives right. The Fee Demonstration Program shows that by allowing fees to help pay the way, managers are freed from political pressures and encouraged to respond to visitor demands as well as visitor impact on the resources. Furnished with better information on the value of the varied resources and characteristics of federal lands—wilderness, water, habitat, and scenic views, in addition to timber and recreation—managers would be able to provide for multiple uses. New information could help managers dedicate areas to their greatest valued uses.

Because not all land is suitable to all uses, federal lands containing the headwaters of streams that are valued for drinking water or habitat would be managed to ensure sufficient flow and low sedimentation. Areas with wilderness attributes would be managed for that value. The key is to allow such valuations while taking into consideration the alternative land uses being lost.

Setting aside more land provides neither ecological integrity nor economic benefits. "Our national priority should be environmental stewardship, not environmental protection," says Henry Lamb, executive vice-president of the Environmental Conservation Organization.<sup>21</sup> Only by acknowledging the various land use values will we know where no use is good use.



# Notes

1. Multiple Use and Sustained Yield Act (16 USC 528) and Federal Land Policy and Management Act (43 USC 1701). The federal government also controls lands managed by the Department of Defense, the Bureau of Reclamation, and the Army Corps of Engineers, among others.

2. The Conservation Biology Institute and World Wildlife Fund USA (1999) have compiled a protected area database listing numerous federal land classifications by degree of protected status.

3. Presidential proclamations of “conservation” areas have been made by nearly every president since 1906.

4. The Knutson-Vandenberg Act of 1930 and amendments (16 USC 576-576b) allow a portion of timber sale receipts to be retained by the agency for forest restoration, all salvage sale receipts are retained to cover the direct costs of sale preparation and harvest of salvage timber, and 10 percent of the National Forest Fund is retained for trails and road maintenance.

5. Jeff Mann, program analyst, Region 1, U.S. Forest Service, Missoula, MT, by e-mail, September 14, 2000.

6. John Gerritsma, urban interface, Coconino National Forest, U.S. Forest Service, Region 3, Flagstaff, AZ, telephone interview, November 3, 2000.

7. Additional data provided by Don McKenzie, Southeast field representative, Wildlife Management Institute, Ward, AR, telephone interview, January 30, 2001.

8. Art Johnston, legislative chairperson, Forest Service Council of the National Federation of Federal Employees, Park Falls, WI, by e-mail, June 26, 2000.

9. Jan Lerum, district ranger, Gallatin National Forest, Bozeman, MT, personal interview, June 2000.

10. Jeff Mann, telephone interview, September 14, 2000.

11. Some scientists believe “meteorology and weather are equally important factors” (Ament 1997, 9).

12. Federal lands made up 62 percent of the burned lands in 2000, even though 80 percent of forests in the nation are privately owned (National Interagency Fire Center 2000).

13. Jim Witwer, Trout & Raley PC, Denver, CO, letter dated September 19, 1999.

14. See original forest plans.

15. Conservation efforts encouraged through increased water price helped reduce per capita water use.

16. Cliff Reed, information officer, Quabbin Visitor Center, Beekertown, MA, telephone interview, August 20, 1998.

17. Cathy Stewart, manager and silviculturist, Bitterroot National Forest, Missoula, MT, personal interviews, October 6 and 13, 1998.

18. Bruce Lippke, director, Rural Technology Initiative, Seattle, WA, telephone interview, August 10, 2000.

19. The Nature Conservancy, the Audubon Society, and numerous other conservation and land trusts purchase land and management agreements solely for the purpose of wildlife habitat and ecosystem preservation. Unfortunately, many of them spend all or a portion of their resources encouraging more federal land ownership, regardless of the government’s poor stewardship track record (see Fretwell 2000).

20. Jon Schwedler, member relations assistant, The Nature Conservancy, Charlottesville, VA, telephone interview, September, 27, 1999.

21. Henry Lamb, Hollow Rock, TN, by e-mail, April 10, 2001.

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