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NATIONAL MONUMENTS AND THE FOREST SERVICE

Gerald W. Williams, Ph.D.

USDA Forest Service
Washington, DC

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National monuments are areas of federal land set aside by the president, under authority of the American Antiquities Act of June 8, 1906, to protect or enhance prominent or important features of the national landscape. Such important national features include those land areas that have historic cultural importance (sites and landmarks), prehistoric prominence, or those of scientific or ecological significance. Today, there are 80 national monuments administered by the USDI National Park Service, 13 more administered by the USDI Bureau of Land Management (BLM), six others administered by the USDA Forest Service, two jointly managed by the BLM and the National Park Service, one jointly administered by the BLM and the Forest Service, one by the USDI Fish & Wildlife Service, and another by the Soldiers' and Airmen's Home in Washington, D.C. In addition, one national monument is under National Park Service jurisdiction, but managed by the Forest Service while another is on USDI Bureau of Reclamation administered land, but managed by the Park Service. The story of the national monuments and the Forest Service also needs to cover briefly the creation of national parks from national forest and BLM lands. More new national monuments and national parks are under consideration for establishment.

ANTIQUITIES ACT OF 1906

Shortly after the turn of the century, many citizens' groups and organizations, as well as members of Congress, believed it was necessary that an act of Congress be passed to combat the increasing acts of vandalism and even destruction of important cultural (historic and prehistoric), scenic, physical, animal, and plant areas around the country (Rothman 1989). Dan Zaslowky noted that by the 1830s, Americans

had generally left their most scenic areas in a shambles. Niagara Falls had been recognized as the nation's greatest natural spectacle, but by the 1830s its cliffs were combed by rogues and unscrupulous operators, who laid claim to the best overlooks and then charged the tourists exorbitantly for the view. Fly-by-night enterprise cluttered the area, turning the place into a cheap circus. The setting had become so tawdry that when Alexis de Tocqueville visited Niagara Falls in 1831, he urged an American friend to "hasten" to see the place before all its grandeur was lost. Delay, Tocqueville warned, would mean that "your Niagara will have been spoiled for you. Already the forest around about [the falls] is being cleared. I don't give the Americans ten years to establish a saw or flour mill at the base of the cataract" (Zaslowky and the Wilderness Society 1986: 13).

Efforts over the last part of the 1800s to resolve the vandalism problem went unheeded, as many of the unique places were on federal land that had no management or even a custodian to watch over the sites. Despite the fact that the first national park was established at Yellowstone in 1872, smaller, unique areas continued to languish. Park Service historian Barry Mackintosh noted that:

While the early national parks were being established [the first at Yellowstone in 1872], a separate movement arose to protect the prehistoric cliff dwellings, pueblo ruins, and early missions found by cowboys, army officers, ethnologists, and other explorers on the vast public lands of the Southwest. Efforts to secure protective legislation began among historically minded scientists and civic leaders in Boston and spread to similar circles in other cities during the 1880s and 1890s. Congress took a first step in this direction in 1889 by authorizing the president to reserve from settlement or sale of the land in Arizona containing the massive Casa Grande ruin. President Benjamin Harrison ordered the Casa Grande Reservation three years later (Mackintosh 2000: 5).

After the turn of the century, Congress was convinced to look at the vandalism/protection problems on the public lands, especially those that contained significant American Indian ruins. "In 1904, at the request of the Interior Department's General Land Office, archeologist Edgar Lee Hewett reviewed prehistoric features on federal lands in Arizona, New Mexico, Colorado, and Utah and recommended specific sites for protection. The following year he drafted general legislation for the purpose (Mackintosh 2000: 5)." By 1906, there was enough support for action that legislation was passed by Congress and signed into law by President Roosevelt. Historian Lawrence Rakestraw described those who led the fight for passage of the Antiquities Act of 1906: "The Antiquities Act was largely the work of Representative John F. Lacey of Iowa [chief proponent of the Lacey Act of 1900 that was designed to protect wildlife on federal lands], who worked closely with Land Office Commissioner W. A. Richards and with Edgar I. [Lee] Hewett of the U.S. Bureau of Ethnology (Rakestraw 1983: 461)."

The Antiquities Act established penalties for destroying, injuring, or excavating any historic or prehistoric ruin or object of antiquity located on federal lands and authorized the president to set aside by proclamation national monuments and to accept gifts of land (see the entire act following the references section of this paper). Section 2 of the Antiquities Act authorized the president "to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments..."

The objects of "scientific interest" have, over the years, been broadly interpreted to include elk protection in the Olympic Mountains of Washington State, geological features found near Yellowstone National Park, and glaciers in Alaska, while those places of "historic interest" include sites such as the birthplace of George Washington, cliff dwellings in Arizona and New Mexico, and military forts in many states. The government lands in question are those administered by the Departments of the Interior, Agriculture, and War (now called the Defense Department).

The act also allows for "permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity..." in these declared national monuments. However, these permits are allowed only for "the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums."

The initial national monuments (NM) were located in Rocky Mountains and the Southwest. The first national monument—Devils Tower in eastern Wyoming—was established by President Theodore Roosevelt on September 24, 1906. The unique feature was described as "a great fluted, almost perpendicular shaft of volcanic basalt pushing 865 feet above the surrounding terrain (Ise 1961: 156)." Less than two months later, the president proclaimed three more national monuments—Petrified Forest and Montezuma Castle, both located in Arizona, and El Morro (Inscription Rock) in New Mexico on December 8, 1906. Historian John Ise described the situation at the three new NMs:

The Petrified Forest had attracted a great deal of attention for years because of gross vandalism...[Representative] Lacey was particularly interested in the preservation of the petrified wood; he knew that it was being hauled away by the wagonload, that vandals were even blowing up the trees to get at the most beautiful mineral formations...Administration of this monument was difficult at first because the Santa Fe Railroad owned half of the land, in alternate sections. The government was later able to make exchanges for the railroad lands...Montezuma Castle is an impressive five-story cliff palace, one of the best preserved [Indian sites], high up in the face of a cliff...El Morro is a high cliff, "Inscription Rock," on which are carved prehistoric petroglyphs and hundreds of inscriptions of early Spanish explorers and early American emigrants and settlers. Among them is the inscription of Don Juan de Onate, made in 1605—fifteen years before the Pilgrims landed at Plymouth Rock (Ise 1961: 156).

Before President Theodore Roosevelt left office in early March of 1909, he had managed to proclaim 18 national monuments under the authority of the Antiquities Act of 1906. Management of the new national monuments was problematic. Protection of the resources that prompted the establishment of the national monuments was of primary concern, but some of the proclamations "did not prohibit forestry or other uses, but no destruction was permitted, and the monument use was declared the dominant use (Ise 1961: 157)."

The new national monuments were not generally objected to by the public—it was only later that additional monuments would be much larger or as some western opponents were to argue "large enough to interfere with the material progress of the West (Runte 1987: 72)." One of these larger national monuments was established in 1908 (the 800,000-acre Grand Canyon NM) and another in 1909 (the 600,000-acre Mount Olympus NM). In 1910, President Taft used the Antiquities Act of 1906 to establish the Sitka NM in Alaska. The new monument was the site of numerous Tlingit artifacts and ancient relics. Later in Alaska, "the village of Old Kasaan was another obvious candidate for national monument designation. Although Old Kasaan [on the Tongass National Forest] was designated a monument in 1916, much of what had made it qualify for such recognition had been burned the summer before (Zaslowsky and the Wilderness Society 1986: 259)." Old Kasaan NM was later abolished.

FOREST SERVICE AND NATIONAL MONUMENTS

Many of the national monuments resemble their close cousins—the national parks—but differ in that monuments are established by the president while parks are established by Congress. The national monuments also differ from their other cousins—the national forests—that are managed for multiple uses. Gifford Pinchot after the act passed quickly issued orders to the forest supervisors and rangers to report on areas that could potentially be classified as monuments. The Washington office, under chief inspector Frederick E. Olmstead, reviewed the potential areas and made a series of positive recommendations.

Through 1910, 23 national monuments had been established. Many of the new national monuments contained areas for the protection of "elk, cactus, cliff dwellings, missions, totem poles, fur trading posts, and geological formations (Rakestraw 1983: 461)." The national monuments were managed by the agency that administered the land. Thus, for example, the Mt. Olympus National Monument (carved from the heart of the Olympic National Forest) and the Grand Canyon National Monument (from the Grand Canyon National Forest) were managed by the USDA Forest Service.

Differences in the management directions given to the various agencies often made administration of the monuments difficult (Rothman 1989a & 1989b). Sometimes the differences flared, as described by John Ise in the establishment and operation of the Devils Postpile area:

In July [1911] the Devils Postpile, in the Sierra, which commercial interests had managed to have eliminated from Yosemite [National] Park in 1905, was proclaimed a national monument. While it was under control of the Forest Service [previous to 1911], an application had been filed for permission to blast the basaltic columns into the San Joaquin River to dam it for mining operations, but this was denied by the District Forest Service Engineer; and to make it safe from spoliation [President] Taft had made it a national monument, still under control of the Forest Service. In the proclamation he was obliged to state that the forest uses of the land should not be impaired (Ise 1961: 159).

Forest Service Chief Ferdinand Silcox in 1936 discussed the differing ideas behind the national forests and the national monuments/national parks:

The physical characteristics of national parks and national forests are in many ways similar. Both embrace interesting and sometimes unique geological and organic examples of the operation and effect of natural laws, possessing high inspirational, educational, and recreational values. The basic differences relate to the form of administration through which

the American people can derive from a given area the maximum social and economic benefits.

Sometimes the intrinsic values involved justify maintaining the area inviolate as a permanent "museum" piece deserving of national concern, and demand its administration exclusively as a source of scientific knowledge, education, inspiration, and recreation. In other cases the best public interest may require that the area be so managed as to derive from it a coordinated series of benefits and uses, proper balance being maintained between the intangible services of scientific, spiritual, and recreational character and the tangible service to industry, commerce, and the general economy. A national-park status may be given to "museum" areas, but not to areas where the principles of management most in the public interest are incompatible with those necessary for national parks truly meriting the name.

Unsettled question of boundary adjustments between national parks and national forests therefore find their origin in economic rather than administrative circumstances, and should be determined accordingly... (as quoted in Dana 1956: 268-269).

NATIONAL MONUMENTS AND NATIONAL PARKS

Interestingly, the Forest Service under Chief Foresters Gifford Pinchot and Henry Graves opposed the creation of a new agency to administer the national parks and most of the national monuments. In fact, as early as 1904 Pinchot wanted to have jurisdiction of the national parks passed to the Forest Service, since the lands were so similar. This attempt at control of the national parks failed to gather many supporters and subsequently failed. Of course, Pinchot's support of damming Hetch-Hetchy Valley in the northern part of Yosemite National Park fed fuel to the fire of the opponents (Dana 1956; Ise 1961; and Rothman 1989; Steen 1976). Historian John Ise noted that "it is possible that a measure of hostility that foresters have sometimes shown toward the national parks was due to the European origin of American forestry principles [where there are few national parks] (Ise 1961: 189)."

After years of trying, the Park Service bill passed both houses of Congress, but in slightly different forms during the summer of 1916. The House version would allow grazing in the parks and monuments, while the Senate version would not. The conference committee kept the grazing provision for all national parks except Yellowstone. Forest Service Chief Henry Graves "insisted that language [in the bill] even hinting that all Forest Service monuments might go to the park service be stricken from the bill (Albright and Schenck 1999: 129)." John Ise found that in the House committee report on the bill:

it was suggested that although the Secretary of Agriculture did not actually agree to the transfer to the Park Service of the national monuments, he recognized that a time would come when the transfer would be made. The House Committee on Public Lands agreed that the transfer should be made immediately or very soon. At the time Horace McFarland was insisting that three departments handling national parks and monuments was an obvious absurdity (Ise 1961: 190).

Stephen T. Mather, soon to be the first director of the new National Parks Service, "had been almost indifferent to the monuments and had told the committee: 'There has been very little done with them; they are simply set aside, presumably, until such time as Congress decides to develop them.' Now...we focus our attention continually on the parks and don't eye any of the Forest Service monuments except those mentioned [Grand Canyon and Mt. Olympus].' He later laughed to us, 'Well, at least, not right now'."

The National Park Service was established in 1916 in the Department of the Interior. The proponents of the new agency, including John Muir—before his death—and the Sierra Club, became outspoken critics of the Forest Service. Late in 1915, just before the National Park Service was created, Stephen Mather, soon to be the Park Service head, invited the Chief of the Forest Service "to discuss the future responsibilities for

national monuments (Steen 1976: 118)." Part of the discussion involved the expansion of Sequoia National Park from land contained in the Sierra National Forest. "The Forest Service was not opposed...if it did not take in too much national forest land (Ise 1961: 282)."

Mather also desired to expand the Grand Canyon NM into the neighboring national forests. The Forest Service disagreed, but the expansions went ahead. Chief Forester Henry Graves "was distraught. 'There seems to be continuous trouble over the National Parks.'...He also saw park supporters stepping up the tempo of their campaign after becoming more and more exasperated by Forest Service opposition to new parks (Steen 1976: 119)."

There were continuous efforts by the Park Service, Congress, and citizen groups to have many of the national monuments made into national parks. Over the years, a number of national parks and monuments were "carved" from national forest land and often adjoined each other, as well as several established by donations of private land. Horace Albright commented on that issue:

Sieur de Monts National Monument was proclaimed on July 8, 1916...It was a notable event because it was the first national park area created entirely by private donations (except for tiny Muir Woods in California)...[National monument custodian George] Dorr and I also agreed that...we could try to change the status of the monument to a national park as I was doing with Mukuntuweap in Utah...What's more, bills were introduced in the Congress early in 1918 to make it a national park. On February 26, 1919, President Wilson simultaneously signed bills creating Grand Canyon National Parks and Lafayette National Park...Dorr and I really didn't approve of the name, but we went along with it until I became director of the service in 1929. Then I pushed through the name we had chosen years before, Acadia National Park. Shortly after I visited Mukuntuweap...Senator Reed Smoot of Utah took the first step toward that [national park] status by getting a bill through Congress in March 1918 that changed the name to Zion National Monument (Albright and Schenck 1999: 270-271).

At the same time, America became involved with the World War (sometimes called the "Great War" or the "War to End All Wars," with the World War I name coming after the start of World War II). In April of 1917, the United States declared war on the Axis powers (Germany and her allies). Efforts on the home front were focused on providing wood, wool, and meat from the national forests. On the Mt. Olympus National Monument in Washington, a railroad logging operation was allowed along the northern flank of the monument to access the much needed spruce trees. The spruce lumber was highly desired for aircraft fuselage parts (Williams 1999). There was a similar emphasis placed on the park service to help the war effort:

As the war dragged on into the spring of 1918, pressure from the cattlemen and sheepmen, hunters, and water and power interests became more intense. One particularly nasty attack was contained in a western newspaper editorial, "Soldiers need meat to eat, not wild flowers!" The Interior Department was flooded with all kinds of demands. Slaughter the Yellowstone elk herds. Kill the nearly extinct bison. Allow the organization of hunting parties to enter the parks to shoot wild animals for additional meat. And allow grazing everywhere...Feelings ran strong in the West (Albright and Schenck 1999: 271-272).

After the war, the arguments and counter-arguments continued flying for decades between the Park Service and the Forest Service (Rothman 1989a & 1989b). In essence, there was a fundamental disagreement over management of the national forests and the national parks and monuments. Horace Albright noted these differences:

Although we recognized that this [USDA Forest Service] branch was only ten years older than ours, it had acquired a reputation and a political clout through men like Theodore Roosevelt and Gifford Pinchot. If the latter had not been fired by Taft in the Ballinger-

Pinchot controversy of 1910-11, the Forest Service would probably have succeeded in swallowing the national parks before our bureau could have been created.

From the moment an independent Park Service was organized, the Forest Service was jealous of it and never failed to fight it whenever their land was involved. But look at it this way. For new parks [or monuments] or additions to old ones, the Park Service had few places to acquire land in the public domain unless it dipped into holdings of the Forest Service. They stood for use of anything within their borders: water, minerals, forests, and other commercially attractive enterprises. They allowed hunting, dams, summer homes, and unlimited roads for lumbering. Their beliefs contradicted all of ours. I'll admit that Mather and I gave little thought and had less concern when reaching out for their land because we were so philosophically opposed to them. We genuinely believed we were preserving while they were destroying. The antagonism continues to this day (Albright and Schenck 1999: 292-293).

Historian John Ise echoed the rival agencies positions, that were based on fundamentally different management goals and laws, as he stated:

The position of the Forest Service was generally that it could administer most forest land better than the Park Service, according to the principle of 'multiple use'—using the land for timber production, grazing, perhaps also for mining, water power, irrigation, hunting and recreation, whereas the Park Service could use it for only two purposes—scenery and recreation...There was, however, one advantage in park administration for areas that demanded absolute protection—park rules were laid down by Congress, could be changed only by Congress, and therefore had stability and permanence, whereas Forest Service rules were largely departmental rules, which might be changed at any time. A giant sequoia grove in a national park for instance, must be protected unless or until Congress passed a law authorizing cutting; but such a grove in a national forest might be cut at any time if the Secretary of Agriculture and the Chief Foresters decided to do it, although it is almost inconceivable that they would do this (Ise 1961: 282).

The situation was similar with proposals to expand the Yellowstone National Park to the south and west into the Jackson Hole and Grand Teton areas. As early as 1916, Mather's assistant Horace Albright, later chief of the Park Service, visited the area and envisioned it as a new national park. However, not all was well between the Forest Service and the Park Service:

Finally the feud between the two services became so bitter that in the winter of 1924-25 the President's Committee of the National Conference on Outdoor Recreation appointed a committee of five, called the President's Co-ordinating Committee on National Parks and National Forests, to survey and make recommendations regarding park expansions—of all parks, not just Yellowstone...In the hearings before the Co-ordinating Committee the Forest Service did not object to the extension of Yellowstone to the east...or to the north, or to the southeast..., but was adamant against the southward extension to take in Jackson Hole [about 800,000 acres of land]. Officers of that service urged that the timber in the south part of Yellowstone and south of Yellowstone should be subject to logging, and the logs should be floated down to saw mills on Jackson Lake. Albright contended that this country was more valuable in its virgin state than as a cutover forest. The Forest Service men argued that there were valuable minerals in the area—coal, phosphate, and asbestos—but Albright denied that these were of any considerable value. The Forest Service was solicitous of the cattle industry in the area and about the summer homes, but Albright and his men thought the summer homes should be restricted to the south part of Jackson Hole where they would not be a desecration of the scenery. The Forest Service had generally more local support, and won in this contest. Jackson Hole and the Grand Tetons were saved for the Forest

Service, but Albright continued his campaign, and a few years later got Grand Teton National Park (Ise 1961: 274-275).

The coordinating committee after a series of hearings and visits to various national parks and forests made five recommendations, several of which would take decades to achieve and with great public disagreements between the Forest Service and the Park Service:

1. Rocky Mountain National Park be expanded to the south (the Forest Service agreed).
2. Mount Rainier National Park be expanded.
3. Sequoia National Park be expanded to take in Mt. Whitney, the Sierra crest, and Kern Canyon.
4. Grand Canyon National Park be expanded to the north onto the Kaibab National Forest.
5. Yellowstone be expanded on the north and east. Also that a new Grand Teton National Park be established, leaving out the Jackson Hole portion.

In the mid-1920s, Alaska lands became the latest battleground for national monuments and parks. Katmai NM was established in 1918 and Glacier Bay NM was added in 1925 from the Tongass National Forest. The latter NM caused an outcry of opposition from the Alaska newspapers (in 1980, both these NMs were reestablished as national parks). Just prior to the establishment of Glacier Bay NM:

the *Juneau Empire* labeled the establishment of the Glacier Bay reserve "a monstrous proposition." An editorial railed that "the suggestion that a reserve be established to protect a glacier than none could disturb if he wanted and none would want to disturb if he could, or to permit the study of plant and insect life is the quintessence of silliness. It leads one to wonder if Washington has gone crazy through catering to conservation faddists" (Zaslowky and the Wilderness Society 1986: 260).

Money for management has always been a problem for all the agencies involved in the administration of the national monuments. John Ise explained:

The proclamation of these national monuments protected those on the public domain—controlled by the Department of the Interior—from further private land claims; those in the Forest Reserves were not subject to land claims. Otherwise the monuments were afforded little protection because Congress did not vote any money for protection until 1916, ten years after the Antiquities Act was passed, and then only \$3,500 for the protection of some thirty widely scattered national monuments—about \$120 each—and not much more for another ten years [amount raised to \$20,750 in 1924] (Ise 1961: 160).

Horace Albright, who was to become the director of the National Park Service, noted that even the new National Park Service felt that the national monuments were "second class" compared to the national parks (Rothman 1969). The Department of the Interior and the Congress essentially ignored the monuments and their management:

Mr. Mather [in March of 1915] was rather indifferent toward national monuments for two reasons. In his opinion, they were substandard to national parks, and most weren't "natural scenic wonders," although there were exceptions like Muir Woods. Obviously everyone, including Congress, ignored them financially....It was shocking to me to learn that [monument managers] received only one dollar a month compensation for overseeing their monuments. Worse still, they were expected to pay their own way for [an official trip]....This awakened us to take a closer look at the welfare of our twenty-three orphan monuments...With no tourist traffic, there was no money from the Appropriations Committee [in Congress] (Albright and Schenck 1999: 51).

With no money to operate or manage the national monuments, citizens were able to do pretty much as they pleased. Vandalism was rampant and even severe destruction to the monuments was common. One way

for the monument managers to overcome the problems was to assign nearby forest or park rangers the task of "managing" the monuments.

It is true that it was a violation of law to despoil the monuments, but most vandals cared little about that when there were no rangers around...Fortunately the government found ways to secure a small measure of protection without funds. Representatives of the departments having jurisdiction over the monuments were sometimes able to designate employees in the vicinity as temporary custodians. This was of course unsatisfactory, for these men had other jobs that required most of their time, but it was better than no protection at all (Ise 1961: 161).

Stephen Albright, director of the Park Service since 1929, sought to alleviate some of the worst management conditions in the national parks and monuments. Working behind the scene in Congress, he was able to enlist the support of Senator George Nye and others:

In 1931, at Albright's instigation, Senator George Nye had introduced a bill that would rid the national parks of some of the destructive practices that had plagued them from the beginning. Mineral prospecting in Mesa Verde and Grand Canyon was prohibited; summer home permits were rescinded at Glacier; all provisions that had previously authorized the Secretary of the Interior to grant railroad rights-of-way through parks were finally and fully revoked. Another precedent-setting expansion of Park Service authority under Albright had to do with roadbuilding [in Grand Teton National Park] (Zaslowsky and the Wilderness Society 1986: 28-29).

NATIONAL MONUMENTS TRANSFERRED TO INTERIOR IN 1933

As noted above, transfer of all the national monuments was basically agreed to by all the affected agencies in 1916 when the National Park Service was established. The idea was further pushed in 1919 by Stephen Mather, director of the Park Service, but nothing came of it. Yet the idea of consolidating all these different pieces of federal land under one agency was the back of the minds of many leaders in Congress and the various agencies. Almost ten years later:

Secretary West had secured an agreement with the Secretary of War for the transfer to the Park Service of the military and historical parks and national monuments controlled by the War Department, and got a bill introduced into Congress by Senator Nye to effect this transfer, but the bill did not pass. In 1932 President Hoover made a proposal to Congress for reorganization [of the executive departments], but it was ignored. He then asked Director of the Budget Lewis W. Douglas to draw up a plan, and Douglas' plan gave the Park Service everything that Albright wanted (Ise 1961: 352-353).

On March 3, 1933, President Herbert C. Hoover, on his last day in office, approved legislation authorizing the president to reorganize by executive order the executive branch and administrative agencies of the government. The job fell to the new president Franklin D. Roosevelt, who on June 10th "issued the executive order for reorganization to take effect sixty-one days later. The order was spaciouly inclusive: 'All functions of administration of public buildings, reservations, national parks, national monuments, and national cemeteries are consolidated...in the Department of the Interior...' (Ise 1961: 352-353)." The Executive Orders 6166 and 6228 to reorganize the federal government brought "sixty-four national monuments, military parks, battlefield sites, cemeteries, and memorials from the War Department, Forest Service, and District of Columbia to the National Park Service (Runte 1987: 219-220)." Ten national monuments were transferred from the War Department to the Park Service for management, including the Big Hole Battlefield, Cabrillo, Castle Pinckney, Father Millet Cross, Fort Marion, Fort Matanzas, Fort Pulaski, Meriwether Lewis, Mound City, and the Statue of Liberty.

The Forest Service opposed the pulling away of the national monuments and placing them with the National Park Service, but it was a Presidential decision that they would go along with. In the future, the fate of several national forests would, for the most part, be decided in battles over creation of new national parks rather than national monuments. Four of the national monuments managed by the Forest Service (see table below) had been transferred previously to the National Park Service: Bandelier NM in 1932; Grand Canyon NM in 1919; and the Cinder Cone and Lassen Peak NMs in 1916.) The remaining 15 national monuments under Forest Service management were transferred in 1933 by Executive Order 6166. These Forest Service NMs contained over 451,000 acres (Smith 1930; USDI National Park Service 1987):

NATIONAL MONUMENTS MANAGED BY THE USDA FOREST SERVICE 1906-1933

Monument Name	Forest	Location	Acres
Bandelier ¹	Santa Fe	New Mexico	22,075
Chiricahua	Coronado	Arizona	4,480
Cinder Cone ²	Lassen	California	?
Devils Postpile	Sierra	California	800
Gila Cliff Dwellings	Gila	New Mexico	160
Grand Canyon ³	Grand Canyon	Arizona	818,650
Holy Cross	Holy Cross	Colorado	1,392
Jewel Cave	Harney	South Dakota	1,280
Lava Beds	Modoc	California	45,967
Lassen Peak ²	Lassen	California	?
Lehman Caves	Nevada	Nevada	593
Mount Olympus	Olympic	Washington	298,730
Old Kasaan	Tongass	Alaska	38
Oregon Caves	Siskiyou	Oregon	480
Saguaro	Coronado	Arizona	81,958
Sunset Crater	Coconino	Arizona	3,040
Timpanogos Cave	Wasatch	Utah	250
Tonto	Tonto	Arizona	640
Walnut Canyon	Coconino	Arizona	960
Wheeler	Cochetopa & Rio Grande	Colorado	300
Total Acres			1,273,143+

¹ Transferred to NPS on February 25, 1932.

² Transferred to NPS on August 9, 1916.

³ Transferred to NPS on August 15, 1919.

The transfer of management of these national monuments from the USDA Forest Service to the USDI National Park Service did not sit well with the Forest Service (Rothman 1989a & 1989b; Zaslowky and the Wilderness Society 1986). "Relations between the Forest Service and the Park Service had for several years been strained, and this was said to have made them even more unfriendly (Ise 1961: 353)." The act also changed the name of the Park Service to the "Office of National Parks, Buildings, and Reservations," but the old name was restored on March 2, 1934 (Albright 1971). A second EO on July 28, 1933, made explicit those areas being transferred to the Park Service. The areas included "eleven national military parks, such as Gettysburg and Vicksburg; two 'national parks,' Abraham Lincoln and Fort McHenry; ten 'battlefield sites,' such as Antietam and Appomattox Court House; ten national monuments, mostly military and historical; four 'miscellaneous memorials'; and eleven 'national cemeteries' (Ise 1961: 353)."

For the National Park Service, the two EOs "consolidated all national parks, monuments, historical areas, military parks, cemeteries, memorials, battlefields, and the National Capital Parks into one system (Davis 1983: 789)." Park Service director Horace Albright "was greatly pleased to have the park system so well rounded out (Ise 1961: 353)." Park Service historian Barry Mackintosh noted the significance of the August 10th reorganization:

The reorganization of August 10, 1933, was arguably the most significant event in the evolution of the National Park System. There was now a single system of federal parklands, truly national in scope, embracing historic as well as natural places. The Service's major involvement with historic sites held limitless potential for the system's further growth...Although the big western wilderness parks would still dominate, the bureau and its responsibilities would henceforth be far more diverse (Mackintosh 2000: 1-2).

MT. OLYMPUS NATIONAL MONUMENT

One of the classic debates over the future of national forests, national monuments, and national parks focused on the Olympic Peninsula of Washington State. The fight was long and bitter with the President personally involved. During the early to mid-1930s, an effort was underway to establish a new national park in the Olympic Mountains. Much of the Olympic Peninsula had been established in 1898 as the Olympic Forest Reserve, with the center proclaimed as the Mt. Olympus National Monument in 1909 and managed by the Forest Service. There were a number of unsuccessful proposals from 1909 to 1933 to establish a national park for the Olympics with the national monument as the core area. During World War I, the monument was reduced by one-half to permit lumber production, especially spruce harvesting, for the war effort (Evans and Williams 1985; Lien 1992; Richardson 1968; Twight 1983; Williams 1999).

In the fall of 1933, an elk hunt in the area would set off a storm of protest that brought many people together to petition Congress and the President to create a national park from the existing national monument. Essentially, the elk hunt was suggested by the USDA Biological Survey (now the USDI Fish and Wildlife Service) and carried out by the Forest Service who intended to reduce the elk herd in the monument. The hunt was successful with the killing of about twenty percent (250) of the elk population (Brant 1988; Lien 1991; Richardson 1968; Twight 1983). However, the staging of this hunt created a new feeling that the Roosevelt elk (named after President Theodore Roosevelt) needed the protection that only a national park could provide. The proponents also used this hunt as the basis for a citizen movement that five years later would result in the establishment of Olympic National Park. Much of the pro-park effort was led by John Boettiger, publisher of the *Seattle Post-Intelligencer*. His wife, Anna, was the daughter of President Franklin D. Roosevelt.

The fight for the Olympic National Park would, once again, quickly evolve into a battle between the Departments of Agriculture and Interior. As the Olympic National Forest was basically opposed to the idea of a park, the interagency battle lines were drawn. Simply stated, the Forest Service wanted to manage the monument and surrounding national forest to provide employment and recreation to the regional economy by opening the area to road construction and timber management. The Park Service wished to place the national monument and some of the adjacent national forest into a new national park for the present and future generations by preserving the natural environment as it was (Brant 1988; Lien 1991; Twight 1983). By the spring of 1935, the issue had reached Congress and, despite various attempts to pass a bill to establish the park, the efforts failed. In a rather critical assessment of a new primitive and wilderness area policy, historian John Ise described an attempt by the Forest Service to quell the rising clamor for more national parks, including Olympic National Park:

In the summer of 1936, in an effort to forestall the new park [designation], the Forest Service designated certain lands adjacent to the [Olympic] national monument as 'Primitive Areas'—kept as wilderness free of roads or improvements...To give this arrangement the appearance of permanence it was done through a Department Order of the Secretary of Agriculture, rather than by mere administrative regulation. This method of undercutting the

demand for more parks had been used widely by the Forest Service, and there were some fifty such "Primitive Areas" in the scenic regions of western national forests (Ise 1961 :388).

It fell to President Franklin Roosevelt to make the final decision. "At the suggestion of [Interior] Secretary Ickes, Roosevelt visited the Olympic Peninsula between September 30 and October 1 [1937] (Richardson 1968: 10)." While Roosevelt was on his way West, he visited Yellowstone National Park where his daughter and son-in-law met him. They spent some time with the President talking about the need for an Olympic National Park (Brant 1988; Freidel 1985) while on their way to Seattle on the train (along the way, Roosevelt stopped to dedicate Bonneville Dam and Timberline Lodge). He then visited the Olympic Peninsula.

The first stop was at Port Angeles where a pro-park demonstration was staged for his benefit. C.J. Buck, Regional Forester for the Pacific Northwest Region of the Forest Service, and John R. Bruckart, Forest Supervisor of the Olympic National Forest, were on hand to advise Roosevelt about the folly of creating a national park. Their comments, however, instead of convincing FDR actually antagonized him. The Supervisor of the Mt. Rainier National Park, O.A. Tomlinson, who was not invited by the Forest Service initially, was invited by Roosevelt to be with the motorcade and provide advice. Both Buck, alternating with Bruckart, and Tomlinson rode with the President in his special car and talked with Roosevelt about the proposed park. Tomlinson's positive comments about the need for the park were nearer to the President's feelings (Brant 1988; Freidel 1985; Twight 1983). "At frequent stops, he spoke with characteristic sentiment and optimism. Seeing youngsters in one crowd, he told them, 'I think you children are going to get your national park' (Richardson 1968: 10)."

Not long after the Presidential visit, Pacific Northwest Regional Forester C.J. Buck was assigned elsewhere because of direct pressure from the White House. Irving Brant, a confidant of President Roosevelt, said that "the next time I talked with FDR [around October 1937]...he remarked to me, 'I told [Agriculture Secretary] Henry Wallace to take that fellow [C.J. Buck] out of Portland.' Wallace, I soon thereafter learned, did not remove him... (Brant 1988: 89)." Instead, Buck was given a directed transfer to the Washington Office by the Secretary of Agriculture. This event was the only time that a ranking Forest Service official (other than Pinchot) was removed by any president. Irving Brant described the following scene in early 1939, almost two years after the Olympic Peninsula trip, regarding C.J. Buck:

FDR looked at me sharply and asked, "is that fellow still there?" "Yes," I said. The president picked up the telephone and said, "Get me Henry Wallace." FDR held the phone. Then—"Henry," he said, "what did you do about that fellow I told you to transfer out of Portland a year ago?" A long silence. Then, in a tone of incredulity: "You didn't?" Another long silence. And finally, speaking slowly and emphatically: "Well—I—want—it—done." And he put down the receiver. It was done. On April 1, 1939 Regional Forester C. J. Buck was moved to the Washington office of the Forest Service as special inspector, which preserved his salary grade and took away his power. Occasional mention of Buck's name as regional forester meant nothing to Roosevelt, but he never forgot "that fellow" who [he felt] deliberately lied to him at the September 1937 conference at Lake Crescent (Brant 1988: 132).

While in Washington, Buck had another run in with Roosevelt in the White House. He then resigned. Supervisor Bruckart was transferred to be Forest Supervisor of the Willamette National Forest in Oregon. It is unclear if Bruckart left the Olympic National Forest voluntarily or not (Brandt 1988; Clary 1986).

A bill to establish the Olympic National Park was introduced in Congress during the following spring. Efforts at compromise were offered by the Forest Service, but the final decision was directly influenced by President Roosevelt. Acting Regional Forester Fred H. Brundage, as quoted in Twight (1983), wrote to the staff of the Olympic National Forest on February 23, 1938, that "by direction of the President a new proposed national park boundary has been worked out by the Chief of the Park Service in cooperation with the Chief of the Forest Service (Twight 1983: 103)." The amended Wallgren bill (HR 10024) was passed and signed into law on June 29, 1938. During the next two decades, several additions to the Olympic National Park were added

from the Olympic National Forest and state lands; each was fought by the Forest Service and the State of Washington (Lien 1991; Richardson 1968). However, the opposition was futile in most of the cases where a national monument or national park was established or enlarged by land removed from the national forests (Hays 1956 and Steen 1976).

JACKSON HOLE NATIONAL MONUMENT

At roughly the same time as controversy over the creation of Olympic National Park, tempers were coming to a boil over the fate of the area south of Yellowstone National Park. The area, that was known for providing elk habitat during the long winters, was long coveted by the Park Service (as mentioned previously). For some 40 years, the question about the final fate of the area was in doubt:

In 1898 the Senate directed the Secretary of the Interior to report on the question whether the area south of Yellowstone—described as the Yellowstone Forest Reserve, now Teton National Forest—should be added to prevent “extinction of the large game [elk] roaming therein.”...Almost every report of the Secretary of the Interior and of the Director of the Park Service, from the time it was organized in 1917 [1916] and for the next twenty-five years, called for the addition of the northern part of Jackson Hole to the national park system in one way or another...About this time Representative Mondell made several efforts to extend Yellowstone southward, fighting the Forest Service and the grazing interests at every step. Much of the land to be added was in a national forest, and the Forest Service fought hard to keep it (Ise 1961: 490-491).

After years of wrangling, Grand Teton was established as a national park in 1929 with the wonderfully scenic park land carved from the Teton National Forest. However, a final decision about the disposition of the area north of Jackson Hole was still in doubt. Congress had “several times refused to give Jackson Hole national park status... (Ise 1961: 500).” During the late 1930s and early 1940s, the Forest Service took an active role in trying to discourage the Jackson Hole area from being included into the national park system. “The local Forest Service office was said to have taken an active part in the propaganda drive [against the park by the livestock and sportsmen’s associations]...Certainly the local national forest office seems to have fought bitterly against the transfer of Jackson Hole to park jurisdiction (Ise 1961: 496).”

Park Service director Stephen Albright, once again, played a crucial role. In 1924, he traveled with John D. Rockefeller Jr. on a tour of the Teton country. Albright then carefully selected a location where the whole panorama of the Tetons and the Jackson Hole country was spread before them in a magnificent vista.

he [Albright] began to talk about how wonderful it would be if the place could be restored to its natural condition. Rockefeller agreed. He told Albright he would buy the valley from its private owners and turn it over to the Park Service. But the work had to be done slowly and surreptitiously, lest prices increase with the knowledge of a Rockefeller on the loose...Rockefeller’s dummy corporation, the Snake River Land & Cattle Company, managed to buy up most of the private land in Jackson Hole—spending more than a million dollars in the end. But Rockefeller couldn’t give it away. Congress, bowing to pressure from delegations from most of the Rocky Mountain and some other Western states, made it clear that it had no intention of adding Jackson Hole to Grand Teton National Park, and under those circumstances, the Interior Department could not accept the gift of land. Finally, in 1942, after fifteen years of paying taxes...Rockefeller gave Interior Secretary Harold Ickes an ultimatum: Take the land now or Rockefeller’s people would start selling it off. Ickes turned to President Roosevelt and persuaded him to declare Jackson Hole a national monument, incorporating the Rockefeller holdings within it (Zaslowsky and the Wilderness Society 1986: 30-31).

Once again, President Franklin Roosevelt played a decisive role when he established the 221,000-acre Jackson Hole National Monument on March 13, 1943. “The reaction of the anti-park forces was prompt and

violent...There were defenders of the proclamation. Peterson of Florida explained the terms of the proclamation at length, but the rebels did not want explanations; they wanted blood (Ise 1961: 498, 501)." The uproar was predictable, though fruitless for the protesters, despite heavy-handed language and accusations by "Wyoming's congressman Frank Barrett [who] compared Roosevelt's action to those of Adolf Hitler... (Zaslowky and the Wilderness Society 1986: 31)." The western anger over the proclamation was felt by members of Congress, as several rushed legislation to dismantle the new monument and change the Antiquities Act of 1906 to eliminate Section 2 of the act that allowed the president "in his discretion" to establish national monuments. The legislation passed both houses of Congress, but was pocket-vetoed by the President.

At the local level, there were mixed reactions. Basically, the logging, mining, and livestock industries wanted no part of the monument, while recreationists, outfitters, and wildlife protectors were overjoyed. Historian John Ise reported that when the announcement was made about the establishment of the national monument, under Park Service administration, that before "the local Forest Service staff turned their office and equipment over to the Park Service, they tore out all plumbing and telephone equipment, explaining later that they did it by mistake. The Forest Service headquarters intervened at one time to order less belligerency in the Jackson Hole office (Ise 1961: 496)." Irving Brant mentioned that Forest Service Chief Lyle Watts "told me that he did not share the antipathy felt by many Forest Service men for the national-park system....He said that when the Jackson Hole National Monument was set up...he sent 'airmail instructions to the Forest Service in Wyoming that it should do nothing to support protests against the action.' (Brant 1988: 265)." These charges against the Forest Service were published in the July 7, 1945, issue of *The Nation*. It did not bode well for the agency, cooperation with the Park Service, the conservation groups, and the public.

Efforts to restore the lands to their pre-monument status were attempted in Congress for another few years, but the effort wound down by 1948. Instead, in the 81st Congress of 1949-1950, a compromise bill was introduced to settle the issue. On September 14, 1950, President Truman signed the act that assigned 203,000 acres to Grand Teton National Park, allotted almost 6,400 acres to the adjoining National Elk Refuge, and gave another 2,800 acres to the Teton National Forest. "This was satisfactory to the Park Service, for it made Grand Teton the kind of park it should have been in the first place (Ise 1961: 506)."

NORTH CASCADES NATIONAL PARK, WASHINGTON

In the northern part of the Cascade Range in Washington State is a magnificent, mountainous area known as the North Cascades. It encompasses the area just south of the border with Canada and until 1968 was part of the Mt. Baker-Snoqualmie and Wenatchee National Forests. After that time, the area became known as the North Cascades National Park. Battles over the establishment of the park started in the late 1930s, but had never been able to gather enough supporters for a bill to pass Congress. Glacier Peak was at the center of the controversy:

The Park Service has been deeply interested in the preservation of two national forest primitive or wilderness areas in the northwest—the Three Sisters Primitive Area [established in 1937] in Oregon and the Glacier Peak Limited Area in the northern Cascades in Washington, the latter one of the most magnificent primitives in the country. These areas are subject to logging at any time that the Secretary of Agriculture decides it is desirable, and many conservationists believe they should be made secure. When the Secretary of Agriculture cut 53,000 acres [the French Pete Creek area] from Three Sisters [Wilderness in 1957] it was evident that they were not secure. There have even been suggestions that these areas, particularly Glacier Peak, might be worthy of national park or monument status...On February 16, 1959, the Forest Service announced a proposal to set up a 422,925-acre wilderness area here—but in the proposal the forested valleys were to be left out for possible logging, thus botching the scenery and spoiling the biotic balance of the area (Ise 1961: 526).

The North Cascades was established as a national park, while the Three Sisters, with the French Pete addition, became one of the many congressionally identified wildernesses of the National Wilderness Preservation System under the auspices of the Wilderness Act of 1964.

NEW NATIONAL PARKS AND MONUMENTS

In the mid-1960s, Alaska came onto the conservation scene with various proposals to protect the natural wonders of the 49th State. Proponents of making vast areas in Alaska as national monuments, and eventually national parks, was pushed by the Park Service and senior Department of the Interior officials:

In 1965, after traveling to Alaska in the company of top national park officials, Interior Secretary Stewart Udall became infected with their zeal for new parks there. The problem was how to get them...In 1968, Udall persuaded President Lyndon Johnson...to invoke the 1906 Antiquities Act and create a grand sweep of national monuments to rival even Theodore Roosevelt's dramatic withdrawals...The entire package would be billed the 'President's Christmas conservation gift to the nation' and would send Johnson into history as the greatest conservation President since T.R. (Zaslowky and the Wilderness Society 1986: 265).

Johnson planned on announcing the new national monuments in his annual State of the Union address, but a mix-up in Congressional notifications of key members of Congress led the president to hold up the announcements. Shortly after, the Park Service assumed that Johnson would declare the new monuments just prior to the inauguration of President Nixon. However, he changed his mind at the last minute, adding only 94,000 acres to the existing Katmai NM and establishing two huge national wildlife refuges in Alaska. Proponents were crushed, but with renewed interest they set their sights on winning the monument and park battle for Alaska.

Following the Alaska Native Claims Settlement Act of 1971, Forest Service Region 10 (Alaska) proposed in 1973 that seven new national forests (39.2 million acres) be created in south and central parts of the state. The idea floated around the Region and Congress waiting for the solution to the long running debates over disposal of the huge Bureau of Land Management (BLM) holdings in Alaska. President Jimmy Carter on December 1, 1978, during the congressional fights over the disposition of the BLM administered lands in Alaska, established 17 new national monuments—totalling 55,975,000 acres—and 38,930,000 acres of national wildlife refuges (Rakestraw 1981). The Forest Service, for the first time since 1933 when all the national monuments were transferred to the Park Service, gained a new national monument on Admiralty Island and another at Misty Fjords, both on the Tongass National Forest, while the BLM gained the Gates of the Arctic, Kenai Fjords, Kobuk Valley, Lake Clark, and Wrangall-St. Elias National Monuments. [Note: It is unclear why the Park Service spells the Norwegian word "Fjord" while the Forest Service has it as "Fiord."] Needless to say, the proclamations greatly upset many people in the State of Alaska, especially the Alaska congressional delegation (Zaslowky and the Wilderness Society 1986). In fact, the Nivi designations by President Carter may have actually made the debates in Congress go quicker in trying to resolve the issues relating to the Native claims.

Between 1978 and 1980, when the final decisions over the D-2 lands passed Congress, there were many debates over the Park Service and the Forest Service proposals to vastly increase the holdings of the two agencies. With the passage of the Alaska National Interest Lands Conservation Act (ANILCA) on December 2, 1980, the huge expansion of the national forest system in Alaska failed to materialize. Instead of many new national forests in the state, ANILCA only made small additions to the Chugach and Tongass National Forests and transferred the old Afognak Forest and Fish Culture Reserve (established in 1902), then part of the Chugach National Forest, to the Alaska Native corporations. The National Park Service, on the other hand, gained as national parks and/or national preserves all the 1978 national monuments listed above, as well as new national park status for Aniakchak and Cape Krusenstern, as well as national park recognition for two older national monuments at Glacier Bay and Katmai. The act also made the core of the Admiralty

Island and Misty Fiords National Monuments as wilderness. As a result of these actions, feelings were running strong against the federal government and especially the Park Service:

antifederal feeling still ran high in Alaska, where many felt they were deprived of their frontier heritage by meddlesome bureaucrats [from Washington DC]. In the late 1970s, for instance, when the Park Service temporarily increased its ranger power to administer new national monuments created by President Carter, outbreaks of violence were not uncommon. In some stores, rangers were refused service. One Park Service employee went to a dentist in Anchorage who refused to treat his impacted tooth because of the ranger's affiliation. Others received bomb threats at their lodgings, or death threats—one accompanied by a spray of bullets into an office window. In Lake Clark, an arsonist burned an airplane that had been chartered by three rangers (Zaslowsky and the Wilderness Society 1986: 271-272).

President Carter after the eruption of Mount St. Helens in Washington State on May 18, 1980, was approached almost immediately by various environmental groups to establish a national park around the still smoking mountain. The Gifford Pinchot National Forest and the Regional Office in nearby Portland mounted a very quick "attack" on potential Park Service plans by setting up recreational viewing and interpretation areas, expensive visitor centers, making and circulating draft management plans, and proposing land exchanges, especially since the top of the mountain, still belching smoke and ashes, was actually in private ownership. The Burlington Northern Railroad, that "inherited" the 19th century land grant to the Northern Pacific Railroad, owned a square mile of the mountain, including the missing several thousand feet of the top that was blasted into the atmosphere. The Forest Service set into motion a land trade with the company for their land on the mountain in exchange national forest land elsewhere. With these activities in motion, it was not surprising that instead of a new national park, Congress passed the Mount St. Helens National Volcanic Monument act that was signed into law by President Carter on August 26, 1982. This 110,000-acre national monument is managed by the Gifford Pinchot National Forest. This was the first national monument administered by the Forest Service that has its origins in Congress rather than the president by proclamation alone.

In early 1986, there was a proposal by Senators Paul Laxalt and Chic Hect to create a Great Basin National Park from the core of the Humboldt National Forest in Nevada. They held several hearing on the matter during that summer. Opposition, although not strong, didn't want private lands to be included or purchased/condemned to make way for the park. In the fall of 1986, action by Congress created the new Great Basin National Park (the 49th national park) that included only the national forest land.

Based partially on the efforts to have Mount St. Helens declared a national volcanic monument, a 30-member citizens group near Bend, Oregon, began an effort in 1988 to have a new national monument declared around the Newberry Crater on the Deschutes National Forest. The entire Cascade Range of Oregon is of volcanic origin, with many outstanding, scenic features. After several years of negotiation, an act was passed by Congress and signed by President Bush establishing the Newberry Crater National Volcanic Monument in 1990. The monument encompasses some 55,500 acres with an additional 10,300 acres established for special management to protect the resources of the volcanic monument.

PRESIDENT CLINTON'S LEGACY

Beginning in 1996, President Bill Clinton announced a proclamation establishing the 1,700,000+ acre Grand Staircase-Escalante National Monument in Utah. The monument was created from land managed by the Bureau of Land Management. Opposition quickly mounted from the State of Utah, special interest groups, and local citizens. Howls of protest from the mining companies and the recreational users were heard by the administration and Congress, but the monument has held all attempts to dismantle its special status (Harrison 1998). Other national monuments and controversy would follow for the next five years, especially during the last year of his administration.

President Bill Clinton on January 11, 2000, expanded the Pinnacles National Monument in California by 7,900 acres and then established three national monuments in the states of California and Arizona. The lengthy California Coast National Monument, encompassing all the federal lands—more than 100 uninhabited small islands, exposed reefs, and rock outcroppings—along the 842 miles long and 12 miles wide of California coastline. This monument is managed by the BLM. In the State of Arizona, there were two new national monuments established: The small BLM-managed Agua Fria National Monument (71,100 acres designed to protect American Indian ruins north of Phoenix) and the huge Grand Canyon-Parashant (1,014,000 acres of cliffs, desert, and scenic areas adjacent to Grand Canyon National Park). The latter monument is jointly managed by the National Park Service and the BLM.

On February 14, 2000, President Clinton announced in a letter that he was assigning Agriculture Secretary Dan Glickman to a unique study of a possible new national monument in California: The Giant Sequoia National Monument. The majestic Sequoia is only found on the western slopes of the central Sierra Nevada near the Kings Canyon and Sequoia National Parks. There are 38 sequoia groves located on the Sequoia National Forest and the remaining in the adjacent national parks, the Sierra and Tahoe National Forests, and the Bakersfield District of the BLM. A team of resource specialists worked on the proposed monument that could have encompassed as much as 440,000 acres. The team was given 60 days to study and report to the President as to whether the 70 or so sequoia groves should be protected under the Antiquities Act of 1906. This is perhaps the first national monument proposal that has been announced for study and public input prior to the establishment. Opposition to the new monument has come from the logging industry, off-road enthusiasts, and the western delegations to Congress.

On April 15th, President Clinton visited the Sequoia National Forest where he proclaimed the Giant Sequoia National Monument. The new monument embraces almost 328,000 acres of the Sequoia National Forest. The monument will be in two units—the northern portion is adjacent to Sequoia and Kings Canyon National Parks, while the southern portion borders the southwestern edge of Sequoia National Park and the eastern edge of the Tule River Indian Reservation. The new Giant Sequoia NM includes about half of the remaining Sequoia groves. The monument designation will preclude new mining claims and phase out of existing logging sales. A management plan will be prepared within three years of the designation of the monument.

On June 9, 2000, Vice President announced that President Clinton invoked the Antiquities Act of 1906 to establish four new national monuments:

- **Hanford Reach National Monument**—200,000 acres along a 51-mile stretch of the last free-flowing part of the Columbia River along the boundary of the Hanford nuclear reactor reservation in Washington State. It is estimated that 80% of the Columbia River fall Chinook salmon spawn in this area. The new monument is assigned to the USDI Fish & Wildlife Service for management.
- **Cascade-Siskiyou National Monument**—52,000 acres in southwest Oregon, just north of the California border. The area includes Soda Mountain. The area contains spotted owl habitat, as well as many species of butterflies, snails, and fish species found nowhere else. Management by the USDI Bureau of Land Management.
- **Canyons of the Ancients National Monument**—164,000 acres in the four corners area of southwest Colorado near Durango. The monument contains more than 20,000 archaeological sites, several areas exceed 100 sites per square mile, which is the highest known density of prehistoric American Indian sites anywhere in the U.S. The new monument is assigned to the USDI Bureau of Land Management.
- **Ironwood Forest National Monument**—134,750 acres in southern Arizona. The new monument is the habitat for several threatened and endangered species. It is managed by the USDI Bureau of Land Management.

On July 7, 2000, President Clinton named the Anderson Cottage as the President Lincoln and Soldiers' Home National Monument. The 14-room, stucco cottage—listed as a national historic landmark in 1973—where President Lincoln and his family lived during the summers of 1862-64. It was at this cottage that President Lincoln wrote the first draft of the Emancipation Proclamation. Three other presidents have used the cottage as a retreat from the White House. The two-acre NM is on the grounds of the Soldiers' and Airmen's Home about three miles north of the White House in northwest Washington, D.C. Clinton also announced a \$750,000 matching grant to be used for preservation efforts at the new national monument. It is to be managed by the Soldier's Home.

The new Santa Rosa and San Jacinto Mountains NM in southern California was signed into law—rather than through the Antiquities Act—after years of negotiation by all parties and signed by President Clinton on October 24, 2000. The new national monument contains 272,000 acres of federal, state, county, Indian, and private lands. The NM includes the existing BLM Santa Rosa Mountains Scenic Area (established in 1990), and lies within the California Desert Conservation Area, designated by Congress in 1976. The original 194,000-acre scenic area contained 92,000 acres of BLM land, 27,000 acres of California Department of Fish & Game land, 13,000 acres of the Agua Caliente Indian Tribe, 1,000 acres of the Morongo Indian Tribe, 6,000 acres of the University of California, and 55,000 acres of private land. After years of negotiating, the new NM designation adds another 80,000 acres including about 70,000 acres from the San Bernardino NF and about 8,500 acres from the Mt. San Jacinto State Wilderness Park. In a very unique agreement, the NM will be cooperatively managed by the BLM, Forest Service, California Fish & Game, Agua Caliente Band of Cahuilla Indians, California Department of Parks and Recreation, county-city regional agencies, private land owners, and the Coachella Valley Mountains Conservancy.

Several national monuments were established under the Antiquities Act on November 9, 2000, when President Clinton signed two executive orders creating the Vermillion Cliffs National Monument in northern Arizona and another that greatly expanded the existing Craters of the Moon National Monument in Idaho. The Vermillion Cliffs NM encompasses 293,000 acres of federal land that is considered to be a unique historic and geologic area. It contains a high density of ancient Pueblo Indian sites, as well as a unique combination of cold desert flora and warm desert grassland. The NM is also the home of several reintroduced California condors. The Craters of the Moon NM was expanded ten-fold from 54,000 acres to 715,440 acres. The original NM was established by President Calvin Coolidge in 1924 for the unique volcanic features. The NM has been expanded four different times since 1924 to include even more unusual geologic features. The present, expanded NM encompasses the entire Great Rift volcanic zone that covers much of the southern Snake River Plain.

Finally, President Clinton, just before he left office, established or expanded eight new national monuments. On January 17, 2001, the president set aside new monuments in California, Montana, Arizona, New Mexico, and Idaho. The sites included:

- **Pompeys Pillar National Monument** near Billings, Montana—a 150-foot sandstone column where Capt. William Clark carved his name on July 25, 1806, during his historic westward trek with Meriwether Lewis to the Pacific Ocean. The monument stands prominently along the Yellowstone River in central Montana. At the same ceremony, Clark was promoted from Lt. of the Corps of Artillerists and Engineers to Capt in the regular Army, with the effective date of March 26, 1804. The president also presented the title of Honorary Sergeant, Regular Army, to Sacagawea, a young Shoshone Indian woman who served as Lewis & Clark's guide. The same title and grade was also given to York, Clark's personal slave, who was the first black man to cross the continent. The monument covers about 51 acres of BLM land.
- **Kasha-Katuwe Tent Rocks National Monument** in north-central New Mexico near Santa Fe—the area is rich in volcanic pumice, ash, and tuff deposits. The area includes about 4,148 acres of BLM federal land.

- **Sonoran Desert National Monument** in Arizona near Phoenix—encompasses the most biologically diverse of North American desert ecosystems, mountain ranges separated by wide valleys, and a large saguaro cactus forest community. The new monument contains 486,149 acres of BLM land.
- **Carrizo Plain National Monument** between San Luis Obispo and Bakersfield, California—a large area of rolling grasslands, several endangered species, Indian sacred sites, and is bisected by a portion of the San Andreas Fault zone. The monument encompasses about 204,107 acres of BLM land.
- **Upper Missouri River Breaks National Monument** in north-central Montana—the monument is along 149 miles of the Missouri River only major portion of the river to be protected in its natural and free-flowing state. The monument also contains the adjacent sandstone Missouri Breaks country, portions of Arrow and Antelope Creeks, and the Judith River, as well as a significant portion of the Lewis and Clark National Historic Trail. The monument contains 377,346 acres of BLM federal land.
- **Minidoka Internment National Monument** is the site of a World War II-era Japanese-American internment camp an expansion Hagerman Fossil Beds National Monument. The area of the new monument contains about 73 acres of land administered by the USDI Bureau of Reclamation, but managed by the National Park Service as a unit of the Hagerman Fossil Beds NM.
- **Virgin Islands Coral Reef National Monument** in the U.S. Virgin Islands in the Caribbean—it expands protection of an area in and around the Virgin Islands National Park. The new monument includes some 12,708 acres of federal submerged lands within a three-mile belt off of St. John, including the Hurricane Hole and areas north and south of St. John.
- **Buck Island Reef National Monument** is an expansion of the existing monument off St. Croix. The expanded monument area includes 18,135 acres of submerged lands within a three-mile circle around Buck Island.

There were reportedly a dozen plus areas that were under study as possible national monuments by President Clinton. One such proposed monument was around the Steens Mountain area in southeastern Oregon. After considerable public response, state concurrence, and congressional agreement, a 425,000-acre area became a Steens Mountain BLM Cooperative Management and Protection Area in legislation passed by Congress and signed by President Clinton into law on October 24, 2000. Critics have accused the president of trying to close his eight-year presidency with environmental actions rivaling those of President Theodore Roosevelt at the start of the 20th century. Even his supporters admit that this allegation is true. During his tenure as president, Clinton established over six million acres (not including the California Coast NM which could be several million acres) of new or expanded national monuments—the most of any president. Perhaps the biggest disappointment by the environmental community was his failure to designate the Arctic National Wildlife Refuge as a national monument. However, the administration believed that the existing refuge designation gives greater protection than a monument would. In addition, by establishing such a monument, it could serve as the “final straw” for congressional critics to get rid of the Antiquities Act.

LEGAL OPINIONS ABOUT THE ANTIQUITIES ACT OF 1906

As with most of the Antiquities Act national monuments, there continues to be great, but isolated, controversy over their establishment. Various special interest groups have filed law suits, or are planning to do so, in the Grand Staircase-Escalante, Giant Sequoia, and Sonoran Desert NMs, asserting that the Antiquities Act is illegal and that only the Congress can establish a national monument. This interpretation would be consistent with the direct congressional role in establishing national parks, but not with almost 100 years of actions by the various presidents under the authority of the Antiquities Act of 1906

Two important legal opinions have been printed regarding the status of the national monuments under the Antiquities Act. The first was a U.S. Supreme Court decision on April 19, 1920, regarding a mining claim case within the Grand Canyon NM. In this case, the court ruled that "The defendants insist that the [national] monument reserve should be disregarded on the ground that there was no authority for its creation. To this we cannot assent. The act under which the President proceeded empowered him to establish reserves embracing 'objects of historic or scientific interest.' The Grand Canyon, as stated in his proclamation, 'is an object of unusual scientific interest' (Cameron v. United States 1920: 455-456)." The court also ruled that the mining claim was invalid and thus his application of a patent to the claim be rejected, as the Secretary of the Interior had already decided.

The second case, this one involving a U.S. Attorneys General opinion on September 26, 1938, involved the proposed abolishment of the Castle Pinckney NM. The proposal was presented by the acting Secretary of the Interior to the Bureau of the Budget, then passed to the Attorney General for a decision. In part, the opinion of Attorney General Homer Cummings stated that the Antiquities Act of 1906 does not:

authorize the President to abolish national monuments, and no other statute containing such authority has been suggested. If the President has such authority, therefore, it exists by implication. My predecessors have held that if public lands are reserved by the President for a particular purpose under express authority of an act of Congress, the President is thereafter without authority to abolish such reservation....While the President from time to time has diminished the area of national monuments...by removing or excluding lands therefrom, under that part of the act which provides that the limits of the monument "in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected," it does not follow from his power so to confine that area that he has the power to abolish a monument entirely...For the reasons stated above, I am of the opinion that the President is without authority to issue the proposed proclamation (Fowler 1941: 186-189).

Interestingly, 18 years later, the same national monument was abolished by Congress and the land transferred to the state. A few other national monuments have received similar "devolution" or "delisting" actions (Hogenauer 1991a and 1991b).

Congress in 1906 gave the president authority to establish national monuments. Perhaps in the future, under the new George W. Bush administration or other president, the Congress will take away the presidential authority under the Antiquities Act.

MANY NATIONAL PARK & NATIONAL MONUMENT PROPOSALS

Over the years, there have been many proposals by various groups to have the President establish new national monuments and national parks. Many areas in the West have at one time or another come under consideration as parks or monuments. At this late time, these areas are usually within existing national forests or Bureau of Land Management administered public lands, as the opportunities for huge gifts of land or the purchase of private lands diminish as the years go by (Albright and Schenck 1999). Even today, large farms and ranches are being sold at ever increasing speed, with millions of acres passing into ever smaller pieces of private property.

Areas in the Pacific Northwest which have been proposed as national parks include a proposal in the 1970s for a Cascades Volcanic National Park along the crest of the Cascade Range in Oregon. Another park proposal for a Siskiyou National Park in southwest Oregon in 1987-88. Several times in the 1970s and 1980s there were proposals for a national park to be created in the Hells Canyon area which separates Oregon and Idaho along the Snake River. A related proposal in the 1990s would create a series of national parks and preserves in northeast Oregon and western Idaho, including a Hells Canyon park, a Chief Joseph preserve, a High Wallowa preserve, and an Owyhee park. All together, the areas would encompass some six million acres. Other areas in the West have come under consideration, especially in the Southwest,

which has many areas of mixed Forest Service and BLM management. Other efforts began in 1987 for a national park in the Sawtooth Range in Idaho (coming from the Sawtooth National Forest), a Jemez National Park in New Mexico (to include the Bandelier NM), and a Wind River National Park in Wyoming (from the Bridger-Teton National Forest). However, support for the many proposals has been lacking (so far). It should be remembered that a number of the national park and monument proposals were called for by various groups for 20 or more years before the president made a proclamation or Congress established a new national park or monument.

The actions by a president in establishing national monuments by proclamation were in the early years undertaken without much fanfare or controversy. Even Congress in the establishment of new national parks—that the president cannot do—was relatively free from controversy. Congress, over the years, has established a number of national monuments—the first in 1929 with the Badlands and Arches NMs (both of which are now national parks). Congress also acted in 1980 in Alaska with the establishment of two national monuments managed by the Forest Service (see discussion below). In the last few decades, there seems to be controversy around each new national monument and new national park. The more active role of the states and interest groups—both local and national—in these decisions tend to draw increasing media attention, political pressure on and by congressional members, and letter writing campaigns to the president and managing agencies. Several of the national monument cases in the last 25 years have been especially political.

CONCLUSION

Use of the Antiquities Act of 1906 by most presidents since enactment has been seen by the public as either a needed/necessary protection of unique prehistoric, historic, or scientific/ecological areas, or as a hindrance to the private use or state development of these areas. Also, the Forest Service and the Bureau of Land Management have, at times, been lukewarm or outwardly in opposition when special lands are “taken” by the Park Service.

Opposition—both local and congressional—has sometimes mounted when the president has proclaimed a new national monument or national park. Over the years, there have been efforts in Congress to block the use of the Antiquities Act or do away with the act itself, but without avail. As recently as 1997, the House passed a bill that would require congressional approval on monuments that exceed 50,00 acres, but the bill was not acted on by the Senate. It should be noted that not one of the presidential proclamations establishing a national monument or national park has been overturned by Congress or the courts. The record is quite clear on this matter. However, some of these areas were reconsidered over the years, a few were abolished or turned over to the states, while many others were enlarged or made into national parks. Environmental historian Hal Rothman described the use of the Antiquities Act of 1906 in his book *America's National Monuments*:

The Antiquities Act is a reminder of the executive direction in the name of the greater good with which the United States once trusted its presidents; despite periodic uses rightly termed excessive, its legacy is generally one of placing the future of the nation over the present needs or desires of individuals. It is an important indication of the social obligation American leaders once felt to maintain the physical and cultural features in this country for the benefit of all Americans (Rothman 1989a: 230).

Currently, the National Park Service manages 80 national monuments. The Forest Service manages six (although one of these is actually a Park Service monument), while the BLM manages 13 (two of these are Park Service monuments) and the USDI Fish & Wildlife Service manages one. The monuments in the Park Service tend to take a lower status than do the national parks. Some of the monuments have very little staffing, while others are fully staffed to handle the many visitors. The Park Service, however, has always been torn between protecting the environment or site versus allowing and encouraging recreational use. Several of the monuments are jointly managed by the Park Service and other agencies or volunteer groups.

The Park Service considered many locations for national park system status over the years, but relatively few were established. Controversy over "taking" national forest system land for new national parks and monuments has been troubling for the Forest Service and a source of rivalry for decades between the two agencies. Many of these possible new parks and monuments were in existing national forests, as recounted by Horace Albright, second chief of the National Park Service:

I don't think [Stephen T.] Mather [first chief of the Park Service] and I ever had any idea of challenging the Forest Service for leadership of the conservation movement. We just wanted to round out the National Park System. We declined to consider Lake Tahoe, Mount Hood, Mount Baker, Mount Shasta, the Arkansas Ouchita [Ouachita] Mountains, and many other beautiful areas because they did not measure up to what we regarded as national park standards or had too much commercial development or too many inholdings, or because the cost was prohibitive considering what Congress would give us...we [were] trying to build a system that would stand up for all time and not be in danger of absorption into some other bureau, probably the Forest Service.

Today, the Forest Service with the Mount St. Helens National Volcanic Monument has entered the arena of huge expenditures, providing services for thousands of visitors, and overseeing concessionaires, much as the National Park Service has been experiencing over the last few decades. The preservation of the "living laboratory" of volcano recovery has been a top priority for Forest Service researchers and management, as well as providing top-notch visitor information and interpretation. This unique Forest Service monument is much more like a national park than a national forest. Contrast this with the Newberry Crater National Volcanic Monument in central Oregon. Here the management is at a much lower intensity with visitors and management concerned about traditional uses (hunting, fishing, camping, boating, and sightseeing) of the Deschutes National Forest area. In this instance, management is not that much different from the adjacent national forest. The same applies to the two Forest Service managed national monuments in Alaska. Traditional uses top the management priorities, with much of both Alaska monuments dedicated to wilderness, with enclaves of mining and small settlements. Recreation visitation and use from outsiders is very low.

The new Giant Sequoia National Monument on the Sequoia National Forest was designated to protect the remaining sequoia groves is a special case, so far. This proclamation mark the first time that the responsible agencies, other than the Park Service, have been as involved in setting the standards and boundaries for a national monument. In the past, the Department of the Interior has typically provided the drafting and study, much like what the Forest Service completed for the new Giant Sequoia NM.

There is concern about the future management of the monuments, especially new ones. If they remain in the jurisdiction of the original agency (like the Forest Service or the BLM), then what special management will apply? For example, with the two Alaska NMs administered by the Forest Service, their core areas are designated by Congress as wildernesses. The question then arises about the hierarchy of congressional designations and what special management, if any, for the remaining national monument areas if the wilderness management is more restrictive/protective than monument management. Perhaps another way of asking the question is: Does national monument status entail a special, national land use allocation or designation and management direction/prescriptions that are fundamentally different from existing designations? It currently appears that the answer is no.

Interior Secretary Bruce Babbitt announced on February 17, 2000, a new "National Landscape Monuments" system for the Bureau of Land Management. As reported by Associated Press writer Robert Weller, Secretary Babbitt "said the new responsibility will give the agency a purpose that it has lacked. Previously, land that was deemed important was given to the Park Service (Weller 2000)." By the summer of 2000, the BLM developed a "National Landscape Conservation System" that consists of national monuments, national conservation areas, national wilderness, wilderness study areas, national wild and scenic rivers, national scenic trails, and national historic trails. These 817 BLM special areas encompass more than 38 million acres, which is about 15 percent of the BLM land base. This could set the stage for an increased visibility

for the NMs managed by the BLM, as well as those managed by the Forest Service. Interestingly, the BLM lands, much like the national forests, have been viewed in the "traditional approach" by the Department of the Interior and the Park Service:

you see something nice, you get a big movement to protect it, and you take it away from the Bureau of Land Management and give it to somebody else, namely the National Park Service [and] in some cases the National Wildlife Refuge System. And out of that has grown a kind of perception that the BLM is sort of the Bureau of Leftovers [or], livestock and mining—whatever you want to call it. But, it doesn't seem to me to be an adequate way of looking at the Western landscape, because the largest land manager ought to be induced to have a sense of pride rather than simply having a bunch of [unique lands] inventory out in the garage that is discovered and given to someone else (Babbitt 2000: 6-7).

The special interest groups may demand, at some future point, that all national monuments managed by the Forest Service and the BLM be transferred to the administration of the National Park Service, as was done in 1933. However, the Park Service does not have consistent policies or management direction for the 80 national monuments currently under its direction. Inconsistencies in policies or management priorities will, eventually, lead to more centralized oversight, unless each of the monuments in the Forest Service and the BLM take on the independent role that many of the national parks and monuments have. In any case, the future will be different than today. Surely, there will be more national monuments and parks in the 21st century.

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ANTIQUITIES ACT OF 1906:

Act of June 8, 1906 (34 Stat. L., 225, Public Law 209)

CHAP. 3060.--An Act For the Preservation of American Antiquities

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall, upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

SEC. 2. That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected: *Provided*, That when such objects are situated upon a tract covered by a bona fide unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

SEC. 3. That permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and War to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe; *Provided*, That the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

SEC. 4. That the Secretaries of the Departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this Act.

Approved, June 8, 1906.

PRESIDENTS AND THE NATIONAL MONUMENTS

Over the years since the Antiquities Act of 1906 became law, only President Nixon did not establish any new or expand any existing national monuments. President Reagan incorporated an existing national monument along with two state special areas into an expanded NM. President Carter signed a congressional bill that established the Mount St. Helens National Volcanic Monument. President Bush signed legislation creating the Newberry Crater National Volcanic Monument. President Clinton recently signed an act to establish the Santa Rosa and San Jacinto Mountains NM. Depending on who is counting, since 1906 the presidents have created around 100 new national monuments. The following list notes the presidents and Congress that created new national monuments (Rothman 1989a and other sources). Many presidents expanded existing national monuments and several became national parks or preserves, while a few were transferred out of federal management or disbanded:

PRESIDENT AND PARTY	NUMBER OF MONUMENTS	ACRES OF MONUMENTS
Theodore Roosevelt (R)	18	1,233,884
William Howard Taft (R)	11	96,204
Woodrow Wilson (D)	13	2,918,469
Warren Harding (R)	8	9,058
Calvin Coolidge (R)	13	2,444,496
Herbert Hoover (R)	12	2,425,254
Franklin D. Roosevelt (D)	10	1,365,800
Harry Truman (D)	1	427
Dwight D. Eisenhower (R)	2	20,517
John F. Kennedy (D)	2	1,190
Lyndon Johnson (D)	1	26,080
Richard M. Nixon (R)	0	0
Gerald R. Ford (R)	1	21,888
Jimmy Carter (D)	16 ¹	54,055,000
Ronald Reagan (R)	1 ²	1,071
George Bush (R)	1 ³	65,800
William J. Clinton (D)	22 ⁴	6,000,769 ⁵

¹ President Carter proclaimed 15 NMs in Alaska at the end of 1978. In 1980, all were remade into national parks and preserves, except for two NMs on the Tongass NF and another managed by the Park Service. Also, Carter signed legislation creating the Mount St. Helens National Volcanic Monument in 1982.

² Expanded the Gran Quivira NM and included two state designated areas.

³ President Bush signed into law the Newberry Crater NVM act in 1990, thus did not establish it using the Antiquities Act of 1906.

⁴ It also includes expansion of the Pinnacles and the Craters of the Moon NMs, as well as the Santa Rosa and San Jacinto NM created by Congress in 2000 and signed into law by President Clinton.

⁵ Acres of the California Coast NM have not been calculated, but it incorporates uninhabited federal islands along coastal strip some 840 miles long and 12 miles wide from the shore line into the Pacific Ocean.

NATIONAL MONUMENTS AND NATIONAL PARKS

The following list, from Davis (1983), Hogenauer (1991a and 1991b), USDI National Park Service (1987), Rothman (1989), and others, shows the national forests used to create national monuments, some of which became national parks (*current names* are shown in **bold type**). Acres shown are the *current official area*, which can include small amounts of private lands:

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Sieur de Monts NM	ME	1916	
Lafayette NP		1919	
Acadia NP		1929 (name change)	48,419
Admiralty Island NM	AK	1978 (on Tongass NF, Juneau District)	981,697
Agate Fossil Beds NM	NE	1965	3,055
Agua Fria NM	AZ	2000 (BLM)	71,100
Alibates Flint Quarry and Texas Panhandle Pueblo Culture NM	TX	1965	
Alibates Flint Quarries NM		1978	1,371
Andrew Johnson NM	TN	1942	
Andrew Johnson National Historic Site		1963	17
Aniakchak NM	AK	1978	
Aniakchak NM and Preserve		1980	602,779
Arches NM	UT	1929	
Arches NP		1971	76,519
Aztec Ruin NM	NM	1923	
Aztec Ruins NM	NM	1928 (World Heritage Site in 1987)	318
Badlands NM	SD	1929 (authorized)	
Badlands NM		1939	
Badlands NP		1978	246,756
Bandelier NM	NM	1916 (from Santa Fe NF in 1932)	33,677
Bering Land Bridge NM	AK	1978	
Bering Land Bridge NM & Preserve		1980	2,697,639
Big Bend NM	TX	1935 (authorized)	
Big Bend NP		1944	801,163

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Big Hole Battlefield NM Big Hole NM Big Hole National Battlefield	ID/MT	1910 (from War Department in 1933 by EO) 1939 (from Beaverhead NF) 1963 (1992 now part of Nez Perce National Historical Park)	656
Biscayne NM Biscayne NP	FL	1968 (authorized) 1980	172,924
Black Canyon of the Gunnison NM Black Canyon of the Gunnison NP	CO	1933 1999	20,766
Booker T. Washington NM	VA	1956	224
Bryce Canyon NM Utah NP Bryce Canyon NP	UT	1923 1924 (from Powell NF also in 1928 & 1931) 1928 (name change)	35,835
Buck Island Reef NM	VI	1961 (NPS—expanded 2001 to include reefs)	19,015
Cabrillo NM	CA	1913 (from War Department in 1933 by EO)	137
Calaveras SP	CA	1990 (from the Calaveras Big Tree NF)	???
California Coast NM	CA	2000 (BLM—840 mi long, 12 mi wide)	???
Canyon de Chelly NM	AZ	1931	83,840
Canyonlands NP	UT	1964	337,598
Canyons of the Ancients NM	CO	2000 (BLM)	164,000
Cape Krusenstern NM	AK	1978 (boundary change in 1980)	649,182
Capitol Reef NM Capitol Reef NP	UT	1937 1971	241,904
Capulin Mountain NM Capulin Volcano NP	NM	1916 1987	793
Carlsbad Cave NM Carlsbad Caverns NP	NM	1923 1930	46,766
Carrizo Plain NM	CA	2001 (BLM)	204,107
Casa Grande Ruin Reservation Casa Grande Ruins Reservation Casa Grande Ruins NM	AZ	1889 1892 1918	473
Cascade-Siskiyou NM	OR	2000 (BLM)	52,000

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Fort Marion NM Castillo de San Marcos NM	FL	1924 1942 (from War Department in 1933)	20
Castle Clinton NM	NY	1946	1
Castle Pinckney NM	SC	1924 (transferred by EO from War Dept. in 1933, abolished in 1956, now in private hands)	4
Cedar Breaks NM	AZ/UT	1933 (from Dixie NF)	6,155
Chaco Canyon NM Chaco Culture National Historic Park	NM	1907 1980	33,974
Channel Islands NM Channel Islands NP	CA	1938 1980	249,354
Chesapeake and Ohio Canal NM Chesapeake and Ohio Canal NM Chesapeake and Ohio Canal Ntnl. Historic Park	MD/DC	1924 (authorized) 1961 1971	19,551
Sulphur Springs Reservation Platt NP Chickasaw National Rec. Area	OK	1902 1906 1976	9,889
Chiricahua NM	AZ/NM	1924 (from Coronado NF in 1933 & 1938)	11,985
City of Rocks NP City of Rocks National Reserve	ID	1988 (from Sawtooth NF) 1988 (coop. Management with NPS & Idaho Department of Parks & Recreation)	14,107
Colonial NM Colonial National Historical Park	VA	1930 1936	9,350
Colorado NM	CO	1911	20,534
Congaree Swamp NM	SC	1976 (Biosphere Reserve in 1983)	21,888
Crater Lake Crater Lake NP Crater Lake NP	OR	1882 (withdrawal then into Cascade Range FR in 1893) 1902 (from Cascade FR) 1980 (additions from Umpqua, Winema, Rogue River NFs)	183,224
Craters of the Moon NM	ID	1924 (BLM-661,000 acres added in 2000)	714,440
Death Valley NM Death Valley NP	CA/NV	1933 1980 (Biosphere Reserve in 1984, added the NM in 1994)	3,367,628

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Mount McKinley NP Denali NM Denali NP & Preserve	AK	1917 1978 (separate area) 1980 (combined NP & NM, Biosphere Reserve in 1976)	6,075,030
Devils Postpile NM	CA	1911 (from Sierra NF in 1933)	798
Devils Tower NM	WY	1906 (1 st NM)	1,347
Dinosaur NM	CO/UT	1915	210,278
Fort Jefferson NM Dry Tortugas NP	FL	1935 1992	64,700
Edison National Historic Site Edison Laboratory NM Edison National Historic Site	NJ	1955 1956 1962 (added the NM)	21
Effigy Mounds NM	IA	1949	1,481
El Mapais NM	NM	1987 (land from Cibola NF, managed by NPS & BLM)	114,277
El Morro (or Inscription Rock) NM	NM	1906 (expanded in 1917 & 1950)	1,279
Everglades NP Everglades NP	FL	1934 (authorized) 1947 (World Heritage Site in 1979)	1,399,078
Father Millet Cross NM	NY	1925 (from War Dept. in 1933 by EO, then Transferred in 1949 to State of NY, Now a historic site)	>1
Florissant Fossil Beds NM	CO	1969	5,998
Fort Frederica NM	GA	1936	241
Fort Laramie NM Fort Laramie National Historic Site	WY	1938 1960	833
Fort Marion NM	FL	1924 (from the War Department in 1933 by EO--abolished?)	19
Fort Matanzas NM	FL	1924 (from War Department in 1933 by EO) 1935	228
Fort McHenry NP Fort McHenry NM & Historic Shrine	MD	1925 (from the War Department in 1933 by EO) 1939 (redesignated as a NM)	43
Fort Pulaski NM	GA	1924 (from War Department in 1933 by EO)	5,623

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Fort Stanwix NM	NY	1935 (authorized) 1973 (established)	16
Fort Sumter NM	SC	1948 (from the U.S. Army in 1948)	195
Fort Union NM	NM	1954	721
Fort Vancouver NM	WA	1948	
Fort Vancouver National Historic Site		1961	209
Fossil Cycad NM	WY	1922 (transferred by Congress to BLM in 1956)	
Fossil Butte NM		1972 (from BLM)	8,198
Gates of the Arctic NM	AK	1978	
Gates of the Arctic NP & Preserve		1980 (Biosphere Reserve in 1980)	8,472,527
George Washington Birthplace NM	VA	1930	627
George Washington Carver NM	MO	1943	210
Gila Cliff Dwellings NM	NM	1907 (transferred by EO from Gila NF in 1933, NPS site but managed by the Gila NF since 1975)	533
Giant Sequoia NM	CA	2000 (on Sequoia NF)	327,769
Glacier NP	MT	1910 (from Blackfeet NF)	
Glacier NP		1932 (Waterton-Glacier Intrntl Peace Park, Biosphere Reserve in 1976)	1,013,572
Glacier Bay NM	AK	1925 (from Tongass NF in 1939)	
Glacier Bay NP & Preserve		1980 (Biosphere Reserve in 1986)	3,283,246
Glorieta Battlefield	NM	1990 (to NPS from Santa Fe NF)	???
Grand Canyon Game Preserve	AZ	1906 (from Grand Canyon FR)	
Grand Canyon NM		1908 (from Grand Canyon NF)	
Grand Canyon NP		1919 (from Kaibab & Tusayan NFs)	
Grand Canyon NM #2		1932	
Marble Canyon NM		1969	
Grand Canyon NP		1975 (combined the two NMs above, World Heritage Site in 1979)	1,217,403
Grand Canyon-Parashant NM	AZ	2000 (managed by NPS & BLM)	1,014,000
Grand Portage National Historic Site	MN	1951	
Grand Portage NM		1958 (by act of Congress)	710
Grand Staircase-Escalante NM	UT	1996 (BLM)	1,700,000

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Grand Teton NP Jackson Hole NM Grand Teton NP	WY	1929 (from Teton NF) 1943 (from Teton NF) 1950 (combined with the NM)	309,993
Grandfather Mountain NM	NC	1917 (authorized but not designated)	???
Lehman Caves NM Great Basin NP	NV	1922 (from Nevada NF in 1933) 1986 (from NM & Humbolt NF in 1986)	77,180
Great Sand Dunes NM Great Sand Dunes NP and Preserve	CO	1932 (from Rio Grande NF in 1956) 2000 (incorporates the NM and NF land)	38,662+
Great Smokey Mountains NP Great Smokey Mountains NP	TN/NC	1926 (authorized) 1934 (Biosphere Reserve in 1976 & World Heritage Site in 1983)	521,621
Guadalupe Mountains NP Guadalupe Mountains NP	TX	1966 (authorized) 1972	86,416
Santa Rosa Island NM Gulf Islands National Seashore	FL	1939 (abolished 1946) 1971 (includes Santa Rosa Island)	9,500
Hagerman Fossil Beds NM	ID	1988 (from BLM)	4,351
Hanford Reach NM	WA	2000 (51 miles along Columbia River in the Hanford nuclear reservation, managed by the USDI Fish & Wildlife Service)	195,000
Harpers Ferry NM Harpers Ferry Natnl. Historic Park	WV/VA/ MD	1944 (authorized) 1963	2,343
Hawaii NP Haleakala NP Hawaii Volcanoes NP	HI	1916 1960 (from part of Hawaii NP) 1961 (combined Hawaii and Haleakala NPs, Biosphere Reserve in 1980)	29,824 209,695
Hohokam Pima NM	AZ	1972 (authorized)	1,690
Holy Cross NM	CO	1929 (transferred to NPS by EO from Holy Cross NF in 1933, abolished in 1950 by Congress, now in White River NF)	1,392
Homestead NM	NE	1939	195
Mound City Group NM	OH	1923 (Transferred from the War Department in 1933 by EO, managed by the Ohio State Archeological and Historical Society until 1946)	
Hopewell Culture NHP		1992 (included the Mound City Group NM)	270

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Hot Springs Hot Springs Reservation Hot Springs NP	AR	1832 (reservation) 1880 (made a permanent) 1921	5,549
Hovenweep NM	CO/UT	1923	785
Ironwood Forest NM	AZ	2000 (BLM)	128,917
Isle Royale Isle Royale NP Isle Royale NP	MI	1931 (authorized) 1940 (transfer of lands from state) 1942 (Congress confirms, Biosphere Reserve in 1980)	571,790
Jewel Cave NM	SD	1908 (from Harney NF in 1933)	1,274
John Day Fossil Beds NM	OR	1974 (from BLM)	14,057
Joshua Tree NM Joshua Tree NP	CA	1936 1980 (Biosphere Reserve in 1984, added the NM in 1994)	1,022,703
Kasha-Katuwe Tent Rocks NM	NM	2001 (BLM)	4,148
Katmai NM Katmai NP & Preserve	AK	1918 (addition in 1978) 1980	4,093,229
Kenai Fjords NM Kenai Fjords NP	AK	1978 1980	669,983
General Grant NP Kings Canyon NP	CA	1890 1940 (from General Grant NP, Sequoia & Sierra NFs, Biosphere Res. in 1976)	461,901
Kobuk Valley NM Kobuk Valley NP	AK AK	1978 1980	1,750,737
Lake Clark NM Lake Clark NP & Preserve	AK	1978 1980	4,030,058
Lassen Peak NM Cinder Crater NM Lassen Volcanic NP	CA	1907 (on Lassen NF) 1907 (on Lassen NF) 1916 (from NMs and Lassen NF)	106,372
Lava Beds NM	CA	1925 (from Modoc NF in 1933)	46,560
Lewis & Clark Caverns NM Morrison Cave State Park Lewis and Clark Cavern State Park Morrison Cave State Park Lewis and Clark Cavern State Park	MT	1908 (transferred by Congress to Montana in 1937) 1937 1946 (name change) 1953 (name change) 1954 (name change)	???

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Little Big Horn National Cemetery National Cemetery of Custer Battle- Field Reservation National Cemetery of Custer's Battlefield Custer Battlefield NM Little Bighorn Battlefield NM	MT	1879 1886 (from War Department in 1940) 1946 (act of Congress) 1991	 765
Mackinac Island NP Mackinac Island SP	MI	1875 (managed by the Secretary of War) 1895 (ceded to Michigan as a state park)	???
Mammoth Cave NP Mammoth Cave NP Mammoth Cave NP	KY	1926 (authorized) 1941 1942 (Congress confirms, World Heritage Site in 1981)	 52,830
Mesa Verde NP	CO	1906 (World Heritage Site in 1978)	52,122
Minidoka Interment NM	ID	2001 (USDI-BOR but managed by the NPS as part of Hagerman Fossil Beds NM)	73
Misty Fiords NM	AK	1978 (on Tongass NF, Ketchikan RD)	2,225,000
Montezuma Castle NM	AZ	1906 (from Coconino NF in 1937 & 1948)	858
Pacific Forest Reserve Mount Rainier NP	WA	1892 1899 (from the Mt. Rainier FR)	235,625
Mount Rushmore National Memorial	SD	1925 (authorized from Harney NF in 1928) 1939 (acquired)	1,278
Mount St. Helens NVM	WA	1982 (managed by Gifford Pinchot NF)	110,000
Muir Woods NM	CA	1908	554
Meriwether Lewis Park NM Natchez Trace Parkway Ackia Battleground NM Natchez Trace Parkway	MS	1925 (from War Department in 1933 by EO) 1934 (initial appropriations) 1935 1938 (both NMs added in 1961)	 51,747
Natural Bridges NM Natural Bridges NM	UT	1908 1916 (boundary redescribed)	7,636
Navajo NM	AZ	1909	360
Newberry Crater NVM (w/Special Mgmt. Area-10,300 acres)	OR OR	1990 (on the Deschutes NF)	65,800
Noatak NM Noatak National Preserve	AK	1978 1980	6,569,904

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
North Cascades NP	WA	1968 (from Mt. Baker-Snoqualmie & Wenatchee NFs)	504,780
Ocmulgee NM Ocmulgee NM	GA	1934 (authorized) 1936	702
Old Kasaan NM	AK	1916 (transferred by EO from Tongass NF in 1933, abolished in 1955. The totem poles were removed to a museum, now part of the Tongass NF)	38
Mt. Olympus NM Olympic NP	WA	1909 1938 (from Olympic NF in 1933 & 1938, World Heritage Site in 1981)	922,651
Oregon Caves NM	OR	1909 (from Siskiyou NF in 1933)	488
Organ Pipe Cactus NM	AZ	1937 (Biosphere Reserve in 1976)	330,689
Palm Canyon NM	CA	1922 (authorized only, on Agua Caliente Indian Reservation)	???
Papago Saguaro NM Papago State Park	AZ	1914 (abolished by Congress in 1930) 1930	1,940
Pecos NM Pecos National Historical Park	NM	1965 (authorized) 1990	6,671
Perry's Victory and International Peace Memorial NM Perry's Victory and International Peace Memorial	OH	1936 1972	25
Petrified Forest NM Petrified Forest NP Petrified Forest NP	AZ	1906 1958 (authorized) 1962	93,533
Petroglyph NM	NM	1990	7,232
Pinnacles NM	CA	1908 (expanded by 7,900 acres in 1999)	24,165
Pipe Spring NM	AZ	1923	40
Pipestone NM	MN	1937	282
Pompeys Pillar NM	MT	2001 (BLM)	51
Poverty Point NM	LA	1988	911

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Anderson Cottage NHL President Lincoln and Soldiers' Home NM	DC	1973 (located at 3700 N. Capitol St. NW) 2000	2
Rainbow Bridge	UT	1910	160
Patrick Henry NM Red Hill Patrick Henry Nat. Mem.	VA	1935 (authorized 1935 & 1940, withdrawn 1944) 1986	???
Redwood NP	CA	1968 (from Six Rivers NF special unit, made a Biosphere Reserve in 1983)	112,430
Rocky Mountain NP	CO	1915 (from Colorado & Arapaho NFs in 1930, made a Biosphere Reserve in 1976)	265,723
Russell Cave NM	AL	1961	310
Saguaro NM Saguaro NP	AZ	1933 (from the Coronado NF) 1994	91,444
Saint Croix Island NM Saint Croix Island International Historic Site	ME	1949 1984	22
Gran Quivira NM Salinas NM Salinas Pueblo Missions NM	NM	1909 1980 (enlarged w/name change) 1988 (enlarged w/2 state monuments)	1,071
Santa Rosa and San Jacinto Mountains NM	CA	2000 (enlarged a BLM scenic area, includes 70,000 acres from San Bernardino NF, State lands, Tribal lands, and Private)	272,000
Scotts Bluff NM	NE	1919	3,003
Sequoia NP	CA	1890 (Biosphere Reserve in 1976)	402,510
Shenandoah NP Shenandoah NP Shenandoah NP	VA	1926 (authorized) 1935 1937 (Congress confirms)	198,081
Shoshone Cavern NM Shoshone Cavern City Park	WY	1909 1954 (transferred by Congress to the City of Cody, closed in 1966)	???
Sitka NM Sitka National Historic Park	AK	1910 1972	107

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Sonoran Desert NM	AZ	2001 (BLM)	486,149
Statue of Liberty NM	NY/NJ	1924 (transferred from the War Department in 1933 by EO, Ellis Island added in 1965, made a World Heritage Site in 1980)	58
Sullys Hill NP	ND	1904	
Sullys Hill national game preserve		1931 (transferred to the USDA)	???
Sunset Crater NM	AZ	1930 (from Coconino NF in 1933)	
Sunset Crater Volcanic NM		1990 (name change)	3,040
Theodore Roosevelt Memorial Park	ND	1947	
Theodore Roosevelt NP		1978	70,447
Timpanogos Cave NM	UT	1922 (from Wasatch NF in 1933)	250
Tonto NM	AZ	1907 (from Tonto NF in 1933 & 1937)	1,120
Tumacacori Mission NM	AZ	1908	
Tumacacori National Historical Park		1990	46
Tuzigoot NM	AZ	1939	801
Upper Missouri River Breaks NM	MT	2001 (BLM)	377,346
Verendrye NM	ND	1917 (portion flooded by Garrison Dam in 1955, transferred by Congress to the North Dakota State Historical Society in 1956)	253
Vermillion Cliffs NM	AZ	2000 (BLM)	293,000
Virgin Islands Coral Reef NM	VI	2001 (NPS—underwater reef)	12,708
Virgin Islands NP	VI	1956 (the smallest NP, Biosphere Reserve in 1976)	14,689
Voyagers NP	MN	1971 (authorized)	
Voyagers NP		1975	218,200
Walnut Canyon NM	AZ	1915 (from Coconino NF in 1933 & 1938)	3,579
Wheeler NM	MT	1908 (transferred to the NPS from Cochetopa & Rio Grande NFs in 1933)	
Wheeler Geologic Area		1950 (transferred by Congress now part of the Rio Grande NF)	300
White Sands NM	NM	1933	143,733

NATIONAL MONUMENT OR NATIONAL PARK	STATE	ESTABLISHMENT DATE & NOTES	CURRENT ACRES
Whitman NM	WA	1940	
Whitman National Historical Site		1963	98
Wind Cave NP	SD	1903 (Wind Cave National Game Preserve added in 1935)	28,295
Wrangall-St. Elias NM	AK	1978	
Wrangall-St. Elias NP & Preserve		1980 (World Heritage Site 1979)	13,176,371
Wupatki NM	AZ	1924	35,422
Yellowstone NP	WY/ID/ MT	1872 (the 1 st NP, Biosphere Reserve in 1976, World Heritage Site in 1978)	2,219,791
Yosemite	CA	1864 (Yosemite Valley ceded to state)	
Yosemite NP		1890 ("donut" around Yosemite Valley)	
Yosemite NP		1905 (state re-ceded valley to federal gov't)	
Yosemite NP		1906 (made a World Heritage Site in 1984)	761,266
Yucca House NM	CO	1919	34
Yukon-Charley NM	AK	1978	
Yukon-Charley Rivers National Preserve		1980	2,526,512
Mukuntuweap NM	UT	1909	
Zion NM		1918 (name change)	
Zion NP		1919	
Zion NM #2		1937	
Zion NP		1956 (NM #2 added)	146,592

WILDERNESS ACT AND THE ROADLESS AREA REVIEWS

Gerald W. Williams, Ph.D.
USDA Forest Service
Washington, D.C.

Two names appear in discussion of early history of roadless areas, wilderness, and the national forests: Aldo Leopold and Arthur Carhart. Aldo Leopold, then a young forest supervisor on the Carson National Forest (NF), and one of his rangers discussed the idea of setting aside wilderness areas as early as 1913. In the summer of 1919, Arthur W. Carhart, Forest Service landscape architect, surveyed a summer homesite area on the White River NF in Colorado. After talking with several wealthy hunters, he became convinced that the Trappers Lake area should remain wild and pristine with no homes or roads allowed. He designed a recreation plan to preserve the pristine conditions of the area and was able to convince his superiors to halt plans for development. It was a watershed event in the Forest Service. Carhart and Leopold talked together in the Denver district office and both came to the conclusion that saving or preserving some of the national forest lands should be a priority of the agency.

One year later, Francis B. Sumner urged the newly formed Ecological Society of America to back an effort to set aside untouched forest areas. Leopold in 1921 wrote an article in the *Journal of Forestry* suggesting that a wilderness of at least 500,000 acres be established in each of the eleven western states. Leopold, by now the assistant district forester in Albuquerque, NM (Forest Service Region 3), made an inspection trip to the headwaters of the Gila River in New Mexico in the spring of 1922. He wrote a wilderness plan for the area which excluded roads and additional special use permits, except for grazing. Trails and telephone lines for fighting forest fires were to be permitted. The plan was not universally embraced by the staff in the Forest Service, who tended to believe that development should come before preservation. The "battle lines" were thus drawn that have influenced the wilderness discussions and battles for the remainder of the 20th century. The 500,000 acre Gila Wilderness, the first administrative wilderness, was established by Forest Service District Forester Frank Pooler on June 3, 1924, on the Gila NF in New Mexico.

On September 26, 1926, an area of the Superior NF in Minnesota, which had been surveyed by Carhart in the early 1920s, became protected for recreation use by an order signed by the Secretary of Agriculture. In 1964, the area became the Boundary Waters Canoe Area--now the Boundary Waters Canoe Area Wilderness.

In 1926, the first wilderness/roadless area review was carried out by the Forest Service--roadless areas had to be larger than ten townships (230,400 acres) to be considered for wilderness status. This inventory identified 74 tracts of undeveloped land totaling 55 million acres. However, each wilderness had to be approved on its own merit. At the national level, there was a series of policy decisions (L-20 Regulations in 1929 and U-Regulations in 1939) that made wilderness and primitive area designation relatively easy. In 1938, Robert Marshall, the director of the Forest Service Recreation and Lands section and who drafted the U-Regulations, came to the West to evaluate forest areas over 100,000 acres for wilderness, wild areas (5,000-100,000 acres), or roadless areas (any size). Many recommendations were made with a number of new wild areas and wildernesses established. Between 1924 and 1964, the Forest Service nationally set aside nine million acres of administrative wilderness.

Just after the end of World War II, Howard C. Zahniser of the Wilderness Society (founded in 1935 by Bob Marshall, Aldo Leopold, and others) became the leader in a movement to have **Congress** designate wilderness, rather than the **agency**. In 1949, Zahniser detailed his proposal for Federal wilderness legislation. Nothing much happened to the proposal, but it did raise the awareness for the need to protect wildernesses and primitive areas from all forms of development. In the early 1960s, Senator Hubert H. Humphrey (D-MN) became a major supporter for a national wilderness act, which finally came out of committee after being stalled for years in Congress. President Lyndon Johnson signed the bill into law on September 3, 1964.

Overnight, the existing Forest Service wildernesses became part of the National Wilderness Preservation System (NWPS). The Wilderness Act also set up procedures for the Forest Service and the Department of the Interior to evaluate primitive and roadless areas for possible inclusion into the NWPS. The Forest Service directed the Regions to undertake a Roadless Area Review and Evaluation (RARE) in 1967 on roadless areas over 5,000 acres. The Forest Service conducted 300 hearings which were attended by more than 25,000 people, and gathered more than 50,000 oral and written comments.

Congress continued to establish wildernesses during the Forest Service RARE evaluation process: Around 3,750 acres in the Great Swamp National Wildlife Refuge were added to the NWPS in 1967; while during the following year some 784,000 acres were added; 1969 another 159,000 acres were added; 1970 over 200,000 acres were added with several of the wildernesses in wildlife refuges and national parks; and 1972 about 632,000 acres were added to the NWPS.

The 1972 RARE report identified 1,449 roadless areas comprising 55.9 million acres, with 274 of these areas and 12.3 million acres proposed for wilderness. Final decisions on the proposed wildernesses, however, would be made by Congress, as they had to pass legislation before any new wilderness would become established. The agency proposed, Congress disposed. In 1974, Congress passed the Eastern Wilderness Areas Act which added 16 areas (207,000 acres) in the East to the NWPS and designated 17 other areas as wilderness study areas (125,000 acres).

After losing a lawsuit (the Conti decision in 1972) in California over the RARE report adequacy and thoroughness, Forest Service Chief John McGuire ordered another, more intensive study of roadless areas. As part of the new study, dubbed RARE II, the Forest Service conducted 274 workshops and meetings around the country in July and August 1977 and gathered many thousands of written and oral comments. The RARE II study included all the lands previously covered in RARE (often referred to as RARE I), the national grasslands, and the eastern national forests.

During the time of the study, Congress continued to create new wildernesses, adding some 3.3 million acres to the NWPS between 1976 and 1979. One of the largest additions to the wilderness system was in 1980 with the 2.2 million acre River of No Return Wilderness in Idaho. In the State of Alaska, as a result of the Alaska National Interest Lands Conservation Act of 1980, 55.5 million acres of wilderness was added to the NWPS within the lands managed by the Forest Service, National Park Service, and the Fish & Wildlife Service.

The final RARE II report in 1979 recommended 15 million acres for wilderness and 11 million acres for further study. A Court of Appeals lawsuit ruling in 1982 found that the RARE II study was inadequate. This set up another RARE review process--people already called it RARE III--that began in 1983, however, it lasted less than a year before it was felt to not be necessary. The highly contentious issue of Congress establishing additional wilderness areas was solved by passage of the Oregon and Washington Wilderness Acts in 1984, which included "soft release language" (allowing normal activities--including logging--during the current forest planning period of 10-15 years in roadless areas not chosen for wilderness, after which time they could be reevaluated), rather than "hard release language" (specifying that areas not chosen would be open and available for any activity--especially logging--and could never be reevaluated for wilderness). This action on the Oregon and Washington bills in the Congress resulted in the rather quick approval of other state wilderness bills which were able to use the same "soft" language.

Since that time, many millions of acres of wilderness were added to the NWPS, mostly on a state-by-state process. As of September 30, 1997 (the most current figures), the Forest Service administers 34,738,894 acres of wilderness, with wilderness areas located in 38 states. California has the largest number of national forest wildernesses (54), although Alaska has the largest land area in wilderness (5,752,298 acres).

Two-Paragraph Summary

After being stalled in committee for years in Congress, President Lyndon Johnson signed the Wilderness Act into law on September 3, 1964. But this was not the first wilderness designation on the National Forests. The first administrative wilderness was established in 1924 on the Gila National Forest in New Mexico.* In 1926, the first roadless area review was carried out. Robert Marshall came to the West in 1938 to evaluate areas for wilderness, wild, or roadless status. Between 1924 and 1964, the Forest Service set aside nine million acres of wilderness. After signing of the Wilderness Act of 1964, the existing Forest Service wildernesses became part of the National Wilderness Preservation System. Twelve such wildernesses were established the Pacific Northwest.

The Forest Service directed the Regions to undertake a Roadless Area Review and Evaluation (RARE) in 1967. The 1972 report identified 1,449 roadless areas comprising 55.9 million acres, with 12.3 million acres proposed for wilderness. Chief John McGuire ordered another, more intensive study of roadless areas soon afterward. Dubbed RARE II, the 1979 report recommended 15 million acres for wilderness and 11 million acres for further study. The highly contentious issue of Congress establishing additional wilderness areas was solved by passage of the Oregon and Washington Wilderness Acts in 1984 which included "soft release language" (allowing normal activities—including logging—during the current forest planning period of 10-15 years in roadless areas not chosen for wilderness, after which time they could be reevaluated), rather than "hard release language" (specifying that areas not chosen would be open and available for any activity—especially logging—and could never be reevaluated for wilderness). Since that time, many millions of acres of wilderness were added to the NWPS, mostly on a state-by-state process. As of September 30, 1997 (the most current figures), the Forest Service administers 34,738,894 acres of wilderness, with wilderness areas located in 38 states. California has the largest number of national forest wildernesses (54), although Alaska has the largest land area in wilderness (5,752,298 acres).

THE TIMBER FAMINE OF THE LATE 1800s AND EARLY 1900s

Gerald W. Williams, Ph.D.
National Historian
USDA Forest Service
Washington, DC

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The phrase "timber famine" (also called "timber depletion") once raised the fears of the entire country in the late 1800s and early 1900s. It involved issues dealing with deforestation due to civilization *encroaching* on the forests and cutting them down, *conversion* of the forests to agriculture, increasing *consumption* of wood products, and *destruction* of the forests by wildfire. Probably most disturbing notion of the timber famine idea was that the forests of America and the world would be cut down for profit and that nothing would remain for future generations. Much of the cut-over Eastern and Southern forests were converted to farm and grazing lands, the wood was used for heating, building homes and other structures, and supplying the massive need for railroad ties. Eventually the growing cities, railroads, and highways would accelerate replacement of both the forests and the farms.

Several early writers suggested that the loss of the forests would have catastrophic effects on the future, eventually causing the downfall of civilization. Reaction to the writers who brought such bad news and projections about the forthcoming timber famine was understandable—the U.S. needed to save standing forests for the future. It would take decades to happen. The basic question still is there—the notion of timber famine/depletion, a myth or reality? Was there really ever a crisis or is it an interesting historical example of supply and demand? But first, some background is needed.

Forests for the Colonists

The early colonists in New England had different views of the forests and trees than at present. For much of the colonial period, the nearby forests were both a constant source of wood and timber for the simple necessities of building homes, heating, and cooking and an obstacle to be removed to make way for farming so that the families could support themselves and, if the land was fertile, supply them with crops which could be sold or traded.

As homesteads and villages grew and the trees surrounding them fell under the ax and saw, the forests began to take on a new image and usefulness: Storehouses for lumber. Commercial uses of the forests followed, including use of pine trees for ship masts and oak trees for ship construction. Marion Clawson summarizes these early uses:

The settler isolated on the forested frontier took trees from his land for his own use but, unless his land lay adjacent to a suitable stream on which logs or lumber could be floated to market, he was unable to market either logs or lumber. In addition, the settler needed the land to grow crops, so he often cut the trees and burned them where they lay; or, to save labor, he girdled them so that they would die and ultimately fall. Some of the finest trees this continent has ever produced were thus burned where they lay after cutting. The trees were worth less than nothing in these situations; the land bare of trees was more valuable than the land covered with trees, irrespective of the kind, size, and quality of those trees (Clawson 1983: 197-198).

The forests were feared as they were viewed as places from which the American Indians, French, and Spanish soldiers could hide and launch raids on the new settlements and where wild animals, especially wolves, waited for unsuspecting stock animals or even people as their next meal. Gifford Pinchot noted some fears of the seemingly unending "wilderness" forests:

It is true that the forest gave the [European] pioneers shelter and fuel, and game for food, but it...hemmed them in on every side, and immense labor was required to win from it the soil in which to raise their necessary crops. Naturally, it seemed to them an enemy rather than a friend. Their respect for it dwindled and disappeared, and its place was taken by hate and fear. The feeling of hostility to the forest...continued and increased...long after all reason for it had disappeared (Pinchot 1905: 82-83).

The successful conquest over the American Indians, England, France, and Spain, creation of a new country, by the winners (settlers) left them with the feeling that they were destined to also conquer the land. The task of transforming the forested portions of the East into a farming and grazing country came to have almost religious overtones. Taming the wilderness, converting forests to farms, removal of the wild/predatory animals, damming the rivers, building towns and cities, and moving ever westward to the Pacific became some of the most important, defining characteristics of the American people. It would also cause observers of the American scene to have some second thoughts about the rapid changes to the land and forests.

George Perkins Marsh

Although preserving smaller forest areas for the people had its start in the times of the New World colonies, there were only sporadic efforts to call attention to the changes of the land through the permanent conversion of forests to farms and cities, as well as the need to protect watersheds and nearby woods. Probably the first widely-read author to detail massive deforestation as a problem was George Perkins Marsh. His very influential book, *Man and Nature; or, Physical Geography as Modified by Human Action* published in 1864, alerted a great number of citizens about the dangers of cutting down the forests and the devastating effects that has had in the history of Western civilization. Marsh made his statements from observations that he made from his travels to Europe and the eastern Mediterranean as American minister to Turkey and Italy, and from insights of his living in Vermont and travels in the U.S. His book included chapters on the 1) changing, transfer, and extirpation of plant and wildlife species, 2) waters, precipitation, dikes, dams, canals, floods, and sediments, 3) sands, dunes, erosion, reclaiming lands, 4) the effects of well-meaning engineering projects, such as canals, lake draining, water diversions, and 5) woods/forests, deforestation, fire, plants and animals, and the consequences of deforestation. David Clary noted that:

Marsh attributed the fall of lost civilizations to the wasteful use of their natural resources, especially forests. [However] He believed it was not necessary for a nation to collapse from such a cause. Foresight would ensure prosperity....The message was clear: the nation that destroys its forests destroys itself; take care of natural resources, "civilize" the forest, or perish. Several influential Americans took Marsh's message to heart, as the timber frontier crossed the continent, leaving in its wake denuded landscapes and human misery—Marsh's prescription for the fall of nations. The United States might face a "timber famine," a time when forest resources would be gone forever (Clary 1986: 1-2).

George Perkins Marsh observed that "it is evidently a matter of utmost importance that the public, and especially the land owners, be roused to a sense of the dangers to which the indiscriminate clearing of the woods may expose not only future generations, but the very soil itself (Marsh 1864: 203)." Marsh saw what Europe had suffered for hundreds of years through indiscriminate cutting of the forests—the *decrease* in forest cover, plant and animal species and the extirpation of some, while at the same time showing an *increase* in erosion and silt in the rivers, damage to the river banks, landslides, fires, avalanches, floods, deaths, and unhealthy water. He was quite specific in his observations and recommendations for the people of the United States:

It is desirable that some large and easily accessible region of American soil should remain, as far as possible, in its primitive condition, at once a museum for the instruction of the student, a garden for the recreation of the lover of nature, and an asylum where indigenous tree, and humble plant that loves shade, and fish and fowl and four-footed beast, may dwell and perpetuate their kind in the enjoyment of such imperfect protection as the laws of a

people jealous of restraint can afford them. The immediate loss to the public treasury from the adoption of this policy would be inconsiderable, for these lands are sold at low rates. The forest alone, economically managed, would, without injury, and even with benefit to its permanence and growth, soon yield a regular income larger than the present value of the fee [for sale of the tree covered land] (Marsh 1864: 203-204).

Franklin B. Hough

Marsh's words had great influence on the next generation of writers, as well as Congress. Nine years after the *Man and Nature* book, Dr. Franklin B. Hough was invited to speak at the American Association for the Advancement of Science (AAAS). Hough was a physician, historian, and statistician. He noticed that timber protection in the East would fall off in some areas, while building up in others, which to him indicated that timber supplies in some areas of the United States were being exhausted. On August 21, 1873, Hough presented a paper titled "On the Duty of Governments in the Preservation of Forests" at the AAAS annual meeting held in Portland, Maine. In the presentation, he proposed that the AAAS and Congress act to preserve and protect the remaining forests of the U.S. The following day, AAAS passed a resolution to memorialize (petition) Congress "on the importance of promoting the cultivation of timber and the preservation of forests."

The AAAS appointed a nine-member committee, which was headed by Hough, to write and lobby for the memorial. Hough and his friend George B. Emerson roughed out the petition and by February of 1874, they arrived in Washington to gather additional support and personally discuss the memorial with President Ulysses S. Grant, who in turn sent it to Congress. In part, the memorial discussed forest preservation and growth to be of "great practical importance to the people of the United States." The memorial mentioned that "we deem it highly important that the true condition and wants of the country...and the injuries that may result from the destruction of the forests and the exhaustion of our supplies of timber, should be known in time to provide a remedy before the evils are severely felt (Fernow 1899: 38)." In addition, the memorial proposed that Congress should pass a law to create "a commission of forestry," appointed by the president and the Senate to study and report on the state of the nation's forests.

Over two years later, on August 15, 1876, Congress appropriated \$2,000 which was to be used to "appoint a man of approved attainments" to study and report on forest supplies, harvesting, imports and exports, uses, and growing conditions, as well as conditions in other countries. Hough was appointed as the first federal forestry agent and assigned to the Commissioner of Agriculture. Within a year, he compiled a 650-page book titled *Report Upon Forestry 1877*. Congress was so impressed with this massive work, that 25,000 copies were ordered printed in 1878. In the introduction, Hough commented that the timber

supplies have within a few years past been found scarce, and their prices have advanced to a degree that is sensibly felt by all classes of the population....But in these older and naturally well-timbered sections of the country, thoughtful persons have for years been watching the wasting of supplies and the complete exhaustion of one forest region after another with an anxiety natural with those who look forward to the probable conditions that must necessarily exist in another generation, and who feel the responsibilities of the present with regard to the future...It has been observed in all countries and at all periods, that trees furnishing products demanded by commerce, or standing in the way of cultivation, become an object of inconsiderable waste... (Hough 1878: 7-9)."

Hough remained at this work until 1883 (producing two more reports), when he was replaced by Nathaniel H. Egleston. He stayed until 1886 when Bernhard Fernow replaced him.

Five years later, Congress passed the Forest Reserve Act of March 3, 1891, which allowed the President to establish forest reserves from timber covered public domain land. Prospects of Marsh's timber famine coming true helped push Congress to pass the act (Clary 1986; Clawson 1983; Dana 1956; Fernow 1899a and 1899b; Hays 1959; Steen 1976, 1987, and 1991). Marion Clawson described the situation:

The large-scale depletion of forest stands and the brutal character of much of the timber harvest were in large measure responsible for the popular public demand for the establishment of the national forests....Observers were shocked by the loss of the original forest. They often underestimated the ability of the forest to regenerate when given a chance. The effects of cutting were obvious and disturbing; regeneration was typically delayed (Clawson 1983: 198).

Millions of acres of federal forest reserves were created in the 1891-1897 era. In 1898, Gifford Pinchot replaced Fernow. Seven years later, the USDA Forest Service came into being as the administrative agency in charge of the forest reserve (national forest) system.

Timber Famine and Gifford Pinchot

Beginning in the summer of 1897, management of the forest reserves was given by Congress to the USDI General Land Office. However, the forestry experts at the time were located in the USDA's Division of Forestry. President Theodore Roosevelt was convinced, probably by Gifford Pinchot, chief of the Bureau of Forestry, that timber depletion was a fact. In early 1905, the president addressed the issue of timber famine to the first American Forest Congress:

Our country, we have faith to believe, is only at the beginning of its growth. Unless the vast forests of the United States can be made ready to meet the vast demands which this growth will inevitably bring, commercial disaster, that means disaster for the whole country, is inevitable. The railroads must have ties...The miner must have timber [for tunnel supports]...If the present rate of forest destruction is allowed to continue, with nothing to offset it, a timber famine in the future is inevitable (Roosevelt 1905: 8).

After years of struggle with split departments to oversee the forest reserves, finally the management was combined in 1905 into the newly named Forest Service in the USDA under the dynamic leadership of Gifford Pinchot. The fears of a timber famine were spread far and wide in the Forest Service and the private industry. Primarily they were recording the massive declines to the standing timber volumes in the Eastern and Southern states. Especially problematic was the clearcutting and devastation left behind after reducing the pine forests of the Great Lakes states to heavily cut-over, highly erosive, waste lands (during the "cut out and get out" era). The standing timber harvest, that reached an all-time high in 1906-1907, was rapidly moving to the mountain areas of the South and the West with the same consequences projected for these regions.

The new Forest Service was led by Pinchot who strived, quite successfully, to impart the ideals of progressive and scientific forestry on the foresters in the agency and the public (Steen 1976). Several ideas came to be almost "articles of faith":

One was that the nation needed wood and would need even more in the future. Another was the danger of a timber famine, which would be assured if destructive timber harvesting were to continue. The Service retained both beliefs tenaciously in the face of changes in the industry and of the nation's demonstrably declining dependence upon timber supplies. Another characteristic of the Forest Service's origins was a technocratic outlook...Rule by experts was the answer [rather than rule by the politicians or industrialists]...Efficiency, not profit, would be their goal (Clary 1986: 16).

In that sense, the application of scientific forestry principles (preservation/protection of the forests and sustained-yield) would bring salvation to the Nation's timber famine. Even President Theodore Roosevelt, in a speech probably written by Pinchot, declared at the May 13-15, 1908, White House conference on conservation that:

We are on the verge of a timber famine in this country, and it is unpardonable for the Nation or the States to permit any further cutting of our timber save in accordance with a system which will provide that the next generation shall see the timber increased instead of diminished.

Many of the Progressive era foresters believed that the only way to provide timber for the future, and thus alleviate the timber famine, was to cut the forests slowly or conservatively (Hays 1959). A few foresters believed that federal control of the timber industry would be the most effective way to prevent over harvesting. There were those, however, in the private forest industry who did not fully believe in these principles of conservation espoused by the President, Pinchot, and the Forest Service (Hays 1959). In either case, the prospects of slowing the harvest or government control was abhorrent to the industry.

Most of American industry would oppose federal regulation anyway, out of the natural belief in the principles of free enterprise. The argument for regulation of the timber industry, however, was based, more than anything else, on the purported threat of a timber famine. Timberman, and others as well, were unimpressed with either the figures of the philosophy behind the foresters' eschatology. Industry leaders doubted that anyone could accurately estimate either the volume of standing timber or the rate of its depletion. Even Frederick Weyerhaeuser, one of the first major lumbermen to experiment with conservative lumbering, thought the talk of timber shortages was exaggerated. "There is no reason to think," he remarked in 1909, that "the timber supply will not hold out indefinitely" (Clary 1986: 18-19).

The ideas behind "conservative lumbering," according to Pinchot and the Forest Service, first came into print in 1898 with the publication of Circular 21 which offered a way of harvesting and leaving standing and young trees to start a second "crop" of trees on the same land. By doing so, it would achieve a balance between cutting the forests and letting the land regrow another forest for the next generation. This simple act would reduce or eliminate the threat of a timber famine in the future (Hays 1959). Pinchot outlined the idea in the 1905 edition of *Practical Forestry*:

With the gradual understanding of these methods [of conservative lumbering] by American lumbermen, already well begun...there is but one reason why the majority of the forests now standing in the United States should not in the end be lumbered steadily and systematically, or why they should fail to yield a steadily increasing return [of money]. That reason is the rapid destruction of the forests themselves. There is grave danger that the best of our forests will all be gone before their protection and perpetuation by wise use can be begun... Conservative lumbering is distinguished from ordinary lumbering in three ways: First. The forest is treated as a working capital whose purpose is to produce successive crops. Second. With that purpose in view, a working plan is prepared and followed in harvesting the forest crop. Third. The work in the woods is carried on in such a way as to leave the standing trees and the young growth as nearly unharmed by the lumbering as possible (Pinchot 1905: 40-41).

As most of the national forests at that time were in the upper elevations of the mountain ranges, far from the population centers and demand for lumber, and they were almost inaccessible by the logging methods of the day. As a result, the national forests from 1891 to the 1930s had very little timber harvesting. Also, there was pressure from the timber companies to keep the huge timber stock in reserve until such time as the Nation needed those supplies (in other words after the private timber had all been cut). Keeping the timber from "flooding the market" with "cheap federal timber" was also good for the timber industry as it meant that they could keep the prices higher on their own timber products.

From the 1890s to the 1910s, the forestry/conservation movement "shifted its emphasis from saving trees from destruction to promoting sustained-yield forest management (Hays 1959: 28)." The Forest Service and a few Forest Service and private industry foresters began to argue for forestry where the amount of trees

cut would not exceed the new growth of timber, where the new growth was assumed to be either through natural means or by the new attempts at tree planting.

The Forest Service adopted another means to slow the cutting on the national forests, that would be needed in the future to "off-set" the drop in private timber harvest: The idea of "allowable cut" was outlined in Pinchot's *Practical Forestry* (1905). Basically, this meant that the amount of timber removal from a national forest or unit thereof would be no higher than the annual growth of the timber in that unit. If the timber grew slowly because of climatic or geological conditions, then the allowable cut would be small, whereas if the timber grew quickly, then the allowable harvest could be set very high. In either case, the timber cut could not exceed the growth and should be less than the allowable cut. This would, by definition, eliminate the timber famine, at least on the public lands. In 1910, A.B. Recknagle, as quoted in Clary, explained the principles involved with the annual allowable cut:

Every Supervisor is allotted a certain annual cut, based on the best estimates available. This annual cut he treats like a bank account. The limitation for each Forest is approved by the Secretary of Agriculture. Of course, it is not expected that the Supervisor will necessarily use up the limitation each year, so he can either let it accumulate for a number of years, or else he can make a larger sale than the limitation allows, prorating it for several years in the future. This limitation serves the purpose of an effective "lid" on over-cutting (Clary 1986: 34).

At the same time, millions of acres of national forests were added to the national forest system. Pinchot and the Progressive foresters, along with the strong support of President Theodore Roosevelt, were instrumental in the organization of a professionally trained and inspired group of young foresters. They began to manage the national forests for both protection from fire and for the beginnings of a conservative timber and grazing program. Before many of the new practices could be evaluated, Pinchot was fired in early January 1910 by President William Howard Taft for insubordination.

The Forest Service After Pinchot

In the wake of Pinchot's dismissal, the Forest Service under the leadership of Henry Graves (Pinchot's close friend) continued to battle the projections of a timber famine through conservative lumbering, protect the forests from fire, insects, and disease, and provide a "playground" (recreation) for the people. Regulation of the timber harvesting practices on the national forests and in the private sector were logical outcomes of the era beginning in 1910 and going through at least the mid-1950s.

The idea of sustained-yield operations on the public and private forests was beginning to take hold in the 1910s and 1920s. For many it was the answer to hold off the coming timber famine. In 1911, Burt Kirkland, Forest Service researcher, argued that "by placing national forests on a sustained-yield footing at the earliest possible date, the Forest Service could minimize the effects when private timber could no longer meet the nation's needs (Clary 1986: 35)." David T. Mason, former Forest Service employee, developed a comprehensive idea of sustained-yield forestry practices that would hold the attention of both public and private foresters for the next several decades and would be applied by law in 1937 to the Oregon and California Grants Lands, under GLO (now Bureau of Land Management) administration, and the national forests in 1944 (Loehr 1952; Richardson 1983). However, the new term "sustained-yield forestry," was essentially the same notion as proposed by Pinchot, which he called "conservative lumbering."

The Forest Service was swimming in a sea of change. Societal change was everywhere. World War I (the "war to end all wars") came and went. The "Roaring Twenties" were just starting. Women voting and prohibition were in. Cars and airplanes became common place. "The world around the Forest Service was changing, and the agency resisted facing it. As much as the federal foresters wished to embrace beliefs and principles they thought eternal, things were not so simple. Challenging times lay ahead (Clary 1986: 66)." The days of protection, usually just fire control, during the 1910s were rapidly disappearing. Timber sales,

although small, were rising, grazing was dropping, and recreation use was rapidly increasing. Highways and facilities for tourists were being constructed.

Pinchot Returns to the Fray

In 1919, Pinchot was appointed as the chair of a Society of American Foresters (SAF) "Committee for the Application of Forestry" that was asked "to recommend action for the prevention of forest devastation of privately-owned timberlands in the United States." Frederick E. Olmstead, president of the SAF, explained the reasons for the appointment of the committee in the March 1919 issue of the *Journal of Forestry*:

On this whole question of forestry for the private owner and forestry for the Government we have recently been thinking in a rut...Quite regardless of whether forest lands may be publicly or privately owned in the future...*private forest lands now being logged must be kept productive, for otherwise they will be of no value to any future owner...the thing of immediate importance is to make sure that we have forests in the future...*In plain words, this means that the public must compel the lumberman to treat his forest decently, and that the forester, without delay or quibble, must show the public how this may be done.... (Olmstead 1919: 229).

Olmstead went on to explain that "the question of future of ownership is extremely complicated and cannot be finally settled for many years (Olmstead 1919: 232)." The argument for and against would rage in the pages of the *Journal of Forestry* and the forestry profession for decades. The question of reasonable management of the forest lands to reduce forest devastation was the topic that the committee was empowered to address. However, the chair of the committee would take on both topics.

The SAF committee presented its report (see Pinchot 1919) titled "Forest Devastation: A National Danger and Plan to Meet It." Harold Pinkett wrote that the committee found:

that within fifty years the nation's timber shortages would become a "blighting timber famine," the committee recommended that the federal government be authorized to fix standards and promulgate rules to prevent forest devastation and to promote the productivity of forest crops on privately owned commercial timberlands. The report thus advocated federal control of cutting practices. It was not approved by SAF, however, because many of its members believed that if regulation of cutting was necessary it should be exercised by state governments rather than by the federal government (Pinkett 1983: 578).

The report became the basis for a bill introduced on May 20, 1920, by Senator Arthur Capper of Kansas. Samuel Dana reported that "another move by Senator Capper was to get Senate approval in February, 1920, of a request to the Secretary of Agriculture to submit information on *Timber Depletion, Lumber Exports, and Concentration of Timber Ownership* (Dana 1956: 217)." The subsequent Forest Service report, with the same title as requested (commonly known as the Capper Report), was finished by June 1st (USDA Forest Service 1920). "Throughout the report emphasis was placed on the extent and seriousness of forest depletion, the remedy for which, Secretary Meredith stated, lay in 'a national policy of reforestation [and expansion of national forests]...Depletion has not resulted from the use of forests but from their devastation...' (Dana 1956: 218)."

Senator Capper introduced another similar bill on May 2, 1921. Forest Service Chief William Greeley supported state control, which became a bill introduced by Congressman Bertrand Snell. Both bills were widely debated. Neither passed.

State versus National Control Over Timber Harvesting

The notion of federal control over private logging operations and the timber industry as a whole was never far from the minds of Forest Service officials to control over-harvesting, damaging logging practices, and fear of a future timber famine. Forest Service Chief Forester Henry Graves in April 1919, in an address to the American Lumber Congress meeting in Chicago stated that:

As I see it, either private owners must assume the full responsibility of properly caring for their timber-lands, including protection and forest renewal; or the public must take over the responsibility that it once had [while the forest lands were in the public domain] and surrendered; or the public must share with the owners both the responsibility and the burden....I am ready to advocate...whatever public assistance is needed to make possible the conservative handling of our forests, and I would then make fire protection, conservative production of lumber, and right methods of removal a matter of requirement, with such public direction and control as is necessary to realize the aims desired by the public (as quoted in Dana 1956: 209).

However, the notion of federal oversight of the timber industry to forestall the coming timber famine and destructive logging did not advance very far, but it remained as a "hidden agenda" for decades to come. The third Forest Service Chief Forester, William B. Greeley, and other Forest Service employees wrote a rather long section titled "Timber: Mine or Crop" in the USDA's *Yearbook of Agriculture* 1922 (1923). In the over 100 pages of information and policy statements in the section did much to set the philosophy of the post-Pinchot agency:

their [the many authors of the section] contribution...helped seal the agricultural analogy in Forest Service policy—that is, forest resources were "crops" that could be cultivated and harvested perpetually, as were other agricultural commodities. They contrasted that philosophy with "timber mining," or the cut-out-and-get-out practices of the past. Timber mining, they said, reduced the native stand of United States timber from 5,200 billion board feet to 1,600 billion board feet of virgin timber, to which were added 600 billion board feet of culled and second-growth timber.....An original forest extent of 822 million acres had declined to 138 million acres of virgin stands and 250 million acres of comparatively inferior culled and second-growth timber, not to mention 81 million unproductive acres (Clary 1986: 75).

In addition, the *Yearbook* section went on to discuss the best ways to prevent any future timber famine. First was to provide effective protection against fire and second to reforest harvested or burned over areas. The reforestation could be as simple and least costly as leaving young trees standing or "seed trees" in the harvest areas to let natural seeds and seedling come to life or the more expensive and experimental seed distribution by hand or tree planting. The authors also recommended that the timber industry stop uncontrolled exploitation of forests, reduction in the amount of waste trees or residue from logging operations, and an increase in timber production. Timber lands that were intensively managed could produce another crop and forestall any timber famine in the future (Clary 1986).

The Forest Service responded to its own policies by putting up a number of very large timber sales in the West in the mid-1920s. Several were in the one billion board feet range, but they were intended to remove the timber over many decades to supply sawmills and demands in local areas. Pinchot and George P. Ahern—the "father" of Philippines forestry—in the late 1920s collaborated on a short article called "Deforested America." In this publication, Ahern, the author of record, charged the forest industry with massive destruction of the U.S. forests and even the Forest Service under Chief Greeley with complicity. Pinchot tried to rally the old foes of the timber famine boggy, but he was stopped short of being able to change the timber industry or the Forest Service. The Great Depression of the late 1920s and 1930s, however, caused extensive changes to both. Most of the large timber sales were never fully harvested before the Depression.

The lumber market that peaked in the mid-1910s, almost died within two decades from lack of harvesting, lack of lumber buyers, lack of home builders, and lack of capital.

In the spring of 1930, the Forest Service initiated forest survey of standing timber volume in the national forests. The assignment was led by James Girard, who stayed in the position until World War II. The Forest Service felt the need to explain to the public what the forest survey was trying to accomplish. In a publication "Facts Concerning the Forest Survey" noted that this important forest research study was being conducted as a major economic study about the standing timber that would have "numberless ramifications" that would "touch the national, State and private pocketbooks, bear directly on the welfare and stability of thousands of large and small communities..." In addition, the study was designed such that "light will be thrown on the question of whether or not there is danger of a national timber famine (as quoted in Clary 1986: 91)." By the 1930s, the notion of a timber famine was gone, but not forgotten. The ideas behind the timber famine idea would be incorporated into the new terms of multiple-use and sustained-yield management and eventually into the present-day concepts of ecosystem-based management.

Continued Attempts at Federal Regulation and Cooperation

The idea of federal regulation of timber harvesting in the private sector was revisited in 1933 under the direction of Chief Ferdinand Silcox who thought that regulation of the forest industry should be supervised by public agencies rather than by self-regulation. Ward Shepard, former Forest Service official, suggested to President Franklin Roosevelt that the forest industry could be regulated under the National Industrial Recovery Act of 1933 (NIRA) by voluntary agreements by the industry itself. Roosevelt approved the idea and ordered its implementation under the Code of Fair Competition for the Lumber and Timber Products Industries. The forest practice rules (often referred to as Article X) were in effect for only a year before the NIRA law was declared unconstitutional on May 27, 1935. Various other proposals were made in the late 1930s and early 1940s, but commitment by the president and Congress was only luke-warm, especially after the start of World War II.

The Congress, with strong support from the Forest Service and timber industry, passed the Sustained Yield Act of 1944. This unique act enabled the Forest Service to either cooperate with the private industry to jointly manage private and national forest lands together to assist communities (only one was ever established—in Shelton, Washington) or federal units where certain national forest lands would be managed so that only a few communities and sawmills would have first access to timber. Only five such federal units were established, as opposition quickly mounted from communities and sawmills that were excluded from gaining federal timber. Essentially, the program ended by 1950 with no additional cooperative or federal units established since then. After these efforts were largely abandoned, the Forest Service tried once again to regulate the private industry.

In 1949, Senator Clinton Anderson introduced a bill to allow federal guidelines for state forestry administration. Opposition was strident against the bill. After the Eisenhower administration came into office, the idea was dropped and never seriously revisited since. The role of the states in regulating forestry practices is great. Establishing best management practices has been a goal of both the industry and the states for decades. States, with advice from the Forest Service, have enacted some very tough standards for forestry operations (Ellefson, Cheng, and Moulton 1995). The Forest Service through various laws and regulations, as well as contract clauses (restrictions), have set standards for timber operators working on the national forests. In addition, the forest planning regulations and forest plans—including the interagency plans—have set standards and guidelines for the national forest operations, which in turn have many implications for the timber industry.

Timber Famine/Depletion and the Future

Basic research into the problem of timber supply has been going on in the Forest Service since before Gifford Pinchot, more than a century ago. Franklin B. Hough's first *Report on Forestry* in 1877 summarized the supply and demand problem from 125 years ago. Chiefs of the Division and Bureau of Forestry, as well as the Forest Service, continued the early efforts at collection of data on America's timber supply. Many findings and reports were published, with some of the earlier ones mentioning the depletion the Nation's timber supply. Yet, little was done to implement change. Only the depressions and recessions over the years have seemed to slow the demand for lumber.

Douglas MacCleery noted that "concerns over a timber famine in the late 19th/early 20th century were valid based on an assumption that existing trends would continue...[However,] these trends changed dramatically in the 20th century—due in part to public policies to address them (MacCleery 2000)." He noted three trends that formed the foundation for the call for protecting public forests through a forest reservation system and the public regulation of private forests and forestry practices:

1. An increasing demand for wood products as lumber consumption went up 4-5 times from 1850-1900 and was rising at twice the rate of population growth.
2. Clearing of forests for farms would continue at about 13 sq. mi./day (in 1900).
3. Private ownership that owned 70% of forest land would show no inclination to invest in timber growing (due to low timber prices, tax disadvantages, and risk of fire).

The above trends did not increase at the same rate as predicted. New products to replace lumber for construction have been achieved through the use of steel, concrete, and a wide variety of building materials. Methods to conserve wood and paper have slowed some demands and changed others. Better techniques and procedures to use available—and often lower quality—wood (e.g. timber truss, plywood, particle board, laminated beams) have revolutionized the wood using industries. The supply side has been assisted by a number of governmental actions over the last 100 years, including 1) fire control on public and private lands, 2) research into better wood use and technological advances, 3) increasing agricultural productivity that lessened the demand for converting more woods/forests to farms, and 4) technical and financial assistance and incentives to woodlot and industrial owners (MacCleery 2000). With the advent of wide-open "free trade" between nations, the idea of the U.S. or any other country actually running out of wood is remote, but it may cost more.

The price of the wood products will be a future factor in supply and demand. Country of origin may or may not be a major factor in the supply of timber. "Green certification" of forest products—for environmentally produced, sustainably-managed, from replanted, second-growth tree plantations—may be a factor on the demand side. Another factor to consider is the relation of state and federal regulations governing the harvesting of timber. So was there ever a timber famine? Would there have been a timber famine if actions had not been taken by the federal government to establish national forests? Author Sherry Olson commented on the outcome of decades of worry about the notion of timber famine:

Was forest depletion a myth from the first? It is true that the virgin timber of huge regions was cut, that entire commercial species were reduced to negligible quantities...It is true that continuation of the 1910 patterns of production and consumption...was not physically possible. Some adjustments had to be made. But it is true that the adjustment was not the painful one predicted by the conservationists. There were no dire consequences for consumers. There was no "commercial disaster." Nor was the adjustment the careful attention to supply that Teddy Roosevelt and Gifford Pinchot were proposing...What then was the nature of the adjustment?...[The most important adjustments] were made by the major industrial consumers of wood, not by forest owners, managers, or lumber producers...The effects on the forest products industries...were dramatic, positive, and wholly unexpected. These changes did not directly affect the physical supply of timber substantially, but had a revolutionary impact on the economics of supply (Olson 1971: 2-3).

One could argue that today the idea of timber famine or timber depletion is an exercise best left to the economists with their wonderful assortment of computer programs. Questions about supply and demand, is analyzed regularly by the Forest Service through the Resources Planning Act (RPA). The RPA ten-year assessments of existing and future conditions on all ownerships—much as the first assessment in 1876 under Hough—have widespread support. However, the RPA programs (also produced every ten years) are designed to inventory needs, specific programs, prioritize elements of the program, study personnel needed to implement, and make recommendations for the objectives, goals, and needs (Davis 1983). Yet, the RPA programs have not been as successful or as well liked, as they seem to have had little affect on funding from Congress; programs for the Forest Service, other federal agencies, states, or corporations; plans for the national forests; or demand changes from the public.

Conclusion

Forest conservation and the national forests were created from the beliefs that forests, more than anything else, were the foundation blocks of the rich legacy of natural resources for use by the people. Today, the national forest system is comprised of some 191 million acres. If the national forests and private timber industry lands could be made to produce more wood efficiently and scientifically over the long run, they could prevent timber famine and the Nation would prosper.

These broad concepts were molded into multiple-use and sustained-yield forestry methods, as well as the present-day ideas behind ecosystem-based and sustainable management. Since the 1950s, the Forest Service has made no serious effort to regulate the private industry to prevent overcutting or bad forestry practices and thus alleviate the problem of forest devastation from over harvesting and "timber famine." However, the states have taken up the "call" and most if not all the states have extensive regulations and guidelines for timber harvesting.

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CONTROVERSY OVER CLEARCUTTING

Gerald W. Williams, Ph.D.
National Historian
Washington Office (Detached)



October 22, 1998

CONTROVERSY OVER CLEARCUTTING

Gerald W. Williams, Ph.D.
National Historian
Washington Office (Detached)

Clearcutting, that is falling and removing all the trees from a specific area, has been a long standing tree harvesting technique used extensively in the U.S. and most other countries. During the late 1800s and continuing through today, clearcutting has become the focus of many people opposed to logging in general as well as intensive discussion about the proper methods to harvest trees for their wood and the best ways to ensure the growth of new trees.

It was at George Vanderbilt's 7,000-acre Biltmore Forest Estate near Asheville, North Carolina (now part of the Pisgah National Forest) in the 1890s that young Gifford Pinchot first harbored ideas about "new forestry" – that is clearcutting vs. selective logging and leaving young trees standing during harvesting operations as seed sources for new trees. As recounted in Pinchot's autobiography *Breaking New Ground*:

The old way of lumbering at Biltmore, and everywhere else, was to cut all the young growth that would interfere with cheap and easy logging, and leave desolation and a firetrap behind. It was no easy matter to break this habit and train the loggers to respect all small trees of valuable species, no matter how much they stood in the way of chopper or sawyer. To fell timber where it would do the least harm to the future of the forest was a new idea and required an entirely new point of view....we found that large trees surrounded by a dense growth of smaller trees could be logged with surprisingly little injury to the young growth, and that the added cost of taking care was small out of all proportion to the result. To establish this fact, which at first no lumberman would admit, was of immense importance to the success of Forestry in America (Pinchot 1947: 52).

Gifford Pinchot is often thought of as the founder of "scientific forestry" in the U.S. He also served as the first American born forester and first Chief of the USDA Forest Service (1905-1910). His concerns about forestry practices, dating from the beginning of applied forestry in the U.S., involved ecology, economics, and new training to overcome old ways of doing things. These are still of concern today.

The first major controversy involving clearcutting erupted in the Adirondack Mountains of New York State in the 1900-1903 period. At the time, Bernhard Fernow, who was chair of the new Cornell School of Forestry, intended to convert, by clearcutting, several parcels in the state-owned Cornell Demonstration Forest from a forest composed mostly of broadleaf trees to a forest of conifers. Opposition quickly mounted from owners of resort and summer home owners in the area - many of these owners were steel and oil magnates of the late 1800s. They were able to not only stop the harvesting, but also to close the forestry school, and establish the Adirondack State Park.

During the 1910s and 1920s, logging on private lands and on the national forests emphasized clearcutting as the most desirable method. As most logging operations were either railroad or river log drives, clearcutting was a decision that was of practical value for the operator. At the time, huge blocks of national forest timber, often whole watersheds, were sold to timber companies with the idea that extraction of the standing timber in a watershed would take decades. Since most of the operations started at the mouth of the watersheds, decades later, when the upper reaches were logged, the lower areas would have regrown with trees. But there were researchers, especially in the dry pine forests and elsewhere, who were advocating selective logging rather than clearcutting.

Selective Harvesting Attempted in the 1930s

In the fall of 1934 after reviewing several research studies, Pacific Northwest Regional Forester C.J. Buck directed the national forests in Oregon and Washington to begin timber harvesting by selective logging in the wetter Douglas-fir region, rather than by clearcutting (see below). It was mostly an "academic" directive since there was very little harvesting during the Great Depression on the national forests, or on private lands. Former Forest Service Chiefs Gifford Pinchot and Henry S. Graves made a series of site visits to the national forests in the summer of 1937. They were very impressed with the selective harvesting practices that he saw in the Pacific Northwest Region, especially the Hines and West-Fir sales in Oregon. The Regional Office newsletter *Six Twenty-Six* (Sept 1937) noted about the visit that "they were particularly and very favorably impressed by the silvicultural methods as developed on the Hines sale cuttings and by the tree-selection being developed in the fir region." Pinchot, who had his 72nd birthday on the auto trip, wrote a letter dated September 9, 1937 (see below), to the Regional Forester after the trip was over.

Yet the decision did not make everyone happy, as there was a fundamental disagreement among Forest Service and academic researchers over the clearcutting issue. Two University of Washington forestry professors, Burt P. Kirkland and Axel J.F. Brandstrom, argued that "selective timber management" was economically advantageous as loggers did not have to take away every tree, regardless of value, and that selective logging did not lay the landscape bare. Forest Service researchers Leo Isaac and Thornton T. Munger, however, argued that selective logging was a short-term economic gimmick used during the Depression that would, in the long run, deplete the forests as only the prime trees would be taken from the forest stands (otherwise known as "high-grading"), leaving less desirable species on site. Also, they argued that selective logging practices actually damaged the trees that remained on the site and that clearcutting was much better.

Regional Forester C.J. Buck left Portland in 1939 after a disagreement with President Roosevelt over the creation of Olympic National Park some two years before. The selective logging method was used in the Pacific Northwest Region until the early 1940s, when C.J. Buck was "given" a directed transfer (forced reassignment) to the Washington Office of the Forest Service at the insistence of the President through the Secretary of Agriculture.

Research Work Finds Clearcutting the Best Method in the Douglas-fir Region

Research work continued in the Pacific Northwest and by the early 1950s the evidence was there to convince most professional foresters that clearcutting was the most desirable method of tree harvesting in the Douglas-fir region. These data were compelling from the economics of harvesting and the planting and growth of seedlings that need direct sunlight. Clearcutting has been the preferred method of timber harvesting since then.

However, research work overlooked at least one important aspect or consequence of clearcutting: The visual disruption of the forest for at least a decade until the young trees grow tall (which is the social/political component). Other factors, which were discovered later, include the monoculture aspect of having similar genetically grown trees on the same forest stand, removing all non-target tree species, harvesting the site in relative quick succession, taking away the basic nutrients that came from decaying trees and vegetation, and disturbing the habitats of animal, fish, and plant species. The visual aspect was at least a little understood, as the Forest Service began "hiding" clearcuts behind a screen of standing tall trees along major highways and engaging in a public education effort to "educate" the public to seeing clearcuts. However, neither of these efforts completely overcame the public opposition toward clearcutting. Little did the proponents know that this public issue would raise its head in the mid-1960s over harvesting practices in the Bighorn, Bridger, Shoshone, Teton, and Tongass National Forests. However, it wasn't until the late 1960s and early 1970s that the issue came to a head.

Clearcutting Issues on the National Forests in the 1970s

In the late 1960s, the Bitterroot National Forest and nearby national forests in Montana and Idaho, in a burst of timber harvesting in response to the post-WW II needs for wood and housing, began extensive clearcutting of the standing forests. The Bitterroot NF, with both clearcutting and terracing the cut-over slopes for better regeneration of seedlings, became the lightning rod of the clearcutting issue. Protests, led by the retired forest supervisor, followed a series of sensational news articles in the Missoula, Montana, newspaper (the *Missoulian*). The newspaper articles were authored by Dale Burk, who later wrote a book *The Clearcut Crisis: Controversy in the Bitterroot* in 1970 which tended to flame even more opposition. An internal review by the R-1 Regional Office ensued in December 1969 (printed in the summer of 1970). In the same year, a University of Montana study team was commissioned by Montana Senator Lee Metcalf to study and report on the situation. The university team was led by forestry professor Arnold Bolle, who was instrumental in bringing the issue to national attention. The Bolle Report (as it became known) was given to the senator in November 1970, who then promptly released it to the public. The report echoed the Regional Office report with the exception that the Bolle team felt that the Forest Service was "mining" timber - that is harvesting without the possibility of regrowing trees in the same location. Both the Bitterroot NF staff and the public were angered, but for different reasons.

Another clearcutting controversy erupted on the Monongahela National Forest in West Virginia which contributed significantly to the clearcutting and forest management debate. At the same time that the various Bitterroot reports were being researched and printed, the Forest Service and the West Virginia State Legislature also reported on harvesting, especially clearcutting, on the Monongahela National Forest. The clearcutting battle then spread to Alaska with an 8.75 billion board feet timber sale on the Tongass National Forest. The Forest Service was also in the midst of other storms at the same time - Roadless Area Review and Evaluation (RARE), several wilderness bills, testimony over the ill-fated Timber Supply Act, the National Environmental Policy Act (NEPA), and others.

The result of these battles was a series of public inquiries, reports, more newspaper articles, and congressional hearings in the spring of 1971 over clearcutting practices. Senator Frank Church of Idaho offered an analysis reports on clearcutting that resulted in the "Church guidelines" for limiting the size of clearcuts. The Forest Service voluntarily agreed in April 1972 to stay within the guidelines where clearcuts would not exceed 40 acres in size (Le Master 1984).

Then the Izaak Walton League, an outdoor and fishing organization, filed a lawsuit on May 14, 1973, on behalf of several turkey hunters who found their favorite hunting area on the forest clearcut, on the premise that the 1897 Organic Act did not allow clearcutting. On November 6, 1973, the federal District Court ruled against the Forest Service. After the Fourth Circuit Court of Appeals also ruled against the agency on August 21, 1975, the Forest Service and Congress decided that something had to be done to change the old law to allow timber harvesting. The Forest Service, initially wanted a "quick-fix" to the Organic Act, but Congress and various interest groups wanted much more (Le Master 1984).

National Forest Management Act of 1976

The final result of the congressional hearings was passage of the National Forest Management Act of 1976 (NFMA) on November 22, 1976, as an amendment to the Resources Planning Act of 1974. This replaced much of the wording in the Organic Act of 1897. While the new law did not authorize clearcutting in all locations, it did require additional studies be made before any harvesting methods were employed. Implementation regulations, however, were finalized three years later after extensive work by a Committee of Scientists.

Implementing the NFMA act on the national forests has involved smaller clearcuts than before, more "shaping" of the harvest units to be more "pleasing to the eye," and extensive testing of different methods of harvesting. Partial cutting, group selection, and selective harvesting methods were tried and found to be quite effective in many locations, especially where forest sites were hot and dry.

Recent Changes in the Clearcutting Policy in the Forest Service

The problems with clearcutting have persisted. The Forest Service is trying to back away from this controversial method, with Chief Dale Robertson proposing policy in 1988 and 1992 (see enclosed documents). The 1992 policy, with seven criteria, that would eliminate clearcutting by as much as 70 percent from the 1988 levels. However, backlash from environmental groups and the timber industry continue to make headlines over clearcutting and this policy. Environmental groups found several loopholes in the new direction that they felt were "as large as a logging truck."

Clearcutting remains the silvicultural timber harvest method of choice, especially in the private sector, but resource conditions and restrictions by various forest and ecosystem plans have made clearcutting on the national forests mostly a memory. However, even parts of the private sector are changing. The Canadian timber giant MacMillan Bloedel recently announced that the company would halt the use of clearcutting in the Province of British Columbia. The company said it will "pursue a new stewardship strategy that focuses on old-growth and habitat conservation. The bold move, immediately praised by the environmental community, puts pressure on forest products companies on Canada's west coast to follow suit, say forest activists (*The Forestry Source* 1998: 1)."

Ivan Doig in his classic 1975 article "The Murk Annals of Clearcutting" summarized the clearcutting controversy when he wrote:

Professional foresters were honestly disagreeing about silvicultural alternatives, but mostly on economic grounds...All in all, [the arguments should]...serve as a classic lesson that disputes over the use of our [national] forests are not going to be decided on ecological merit alone. Nowhere near it.

FOREST SERVICE

R-6

S
Sales
Sales Policy
(Selective Logging)

Portland, Oregon
October 16, 1934

Forest Supervisor,

Dear Sir:

It is considered that past experience of the Forest Service with clear cutting in the fir region together with the developments of truck and tractor logging and the findings of the research foresters of the Service, fully warrant the consideration of a change in timber sales policy. Clear cutting has always been questionable because of its tremendous losses in forest productivity, partly because of its attendant extreme fire hazard, frequently resulting in reburns and forest devastation, also because of the low degree of timber utilization. It is concluded that clear cutting practices on National Forest lands should be abandoned if possible and systems of selective logging devised and substituted.

Our experience has demonstrated that clear cutting which changes the natural forest cover and naturally moist growing conditions of the forest into large openings, exposed to the sun, and resulting in both voluntary and involuntary fires destroying the vegetable matter and actual soil fertility, is too costly in growth losses. A clear cut forest loses its productivity in wood products for a period of a few years awaiting the establishment of seedlings and for a further period of many years awaiting the establishment of pole size trees. Not only does the forest suffer this loss in productivity, which is largely avoidable under a selective system, but also with its exposed conditions to the sun and wind, its inflammability is increased to the point where additional fires subsequent to the slashing fire frequently occur resulting in loss of the future crop, further loss in soil productivity and further threat to surrounding areas. Clear cutting methods as practiced also result in the destruction of tremendous numbers of younger trees of all ages and sizes below merchantable, and a loss in wood volume equal to nearly 20 M ft BM per acre of the merchantable timber crop.

It is believed that these conditions can be rectified very largely by the adoption of intensive forestry practices involving light cutting systems which will retain a large percentage of the forest canopy and thereby preserve the forest growing conditions, will preserve the fertility and will obviate the burning of large areas with slash fires. Selective logging will also permit of a far higher degree of utilization—particularly since timber may be sold and logged only when economic demand permits both tree selection and satisfactory utilization.

The immediate future policy therefore will be to develop, test, and put into effect selective logging with individual tree and small group selection in western Oregon and Washington. Under this system clear cut areas of as much as 5 or 10 acres should be infrequent. Light cuttings involving 10 to 20% of the volume will either create slight additional hazard or permit of reduction at reasonable expense. Subsequent cuttings will be made at such intervals as will avoid accumulated increase in fire hazard. Where reduction of slash hazard is desirable it will be secured by piling and burning of by spot burning where small areas are clear cut, Truck transportation, tractor ground logging and carefully controlled short distance high lead logging on scattered small areas make the selection system possible.

The many complex problems incident to the adoption of this system will be attacked aggressively at once so that marking rules and logging methods applicable to various types and silvicultural conditions may be evolved. It is planned that these problems will be attacked both by logging from CCC camps on a demonstration and fact-finding basis, and through the detailed preparation of marking systems and logging plans to be supervised by Forest officers in timber cuttings under sale. Under the selection system it is planned that the logging methods will be stipulated by the Forest Service logging engineers and closely supervised by a Forest officer on the ground at all times.

Without publicity at present, therefore, because of the need for practicing selective logging on the ground to gain needed experience in the beginnings of such intensive forestry practices, I am asking Forest Supervisors to turn their minds toward this selective cutting objective in the sales work, since we must solve this basic forestry problem.

Nothing in this letter should be taken to invalidate any existing sale contract in any respect. Existing contracts, however, which have not been lived up to by the purchaser and can be cancelled properly should be considered for cancellation action. Present experience is limited to favorable topography and other conditions. Further developments will provide acceptable methods for utilization of stands on rough topography or other difficult situations. The possibility of applying this system must be considered in connection with every application for National Forest timber. It is realized that any change in policy may have considerable affect on timber sale receipts in the immediate future. This is not objectionable in view of the burdensome oversupply of stumpage in private hands and considering the need for furthering the stabilization of the lumber industry as a legitimate part of the conservation program.

Very truly yours,

C.J. BUCK.

Regional Forester.

GIFFORD PINCHOT
MILFORD PIKE CO PA

September 9, 1937

Mr. C. J. Buck,
Regional Forester,
U. S. Forest Service,
Portland, Oreg.

Dear Buck:

Now that I am safely back after one of the most delightful trips I ever had in my life, I want to tell you how much I appreciate your courtesy and that of your men. Thanks for what you did for us. The whole trip in your Region was entirely delightful and I am keen as a brier to come again, although I see no chance in the immediate future. Some day, however, I may turn up to make you more trouble.

One of the things which struck me most was your wisdom in preferring the high forest selection system as against clear cutting. What I saw in the line convinced me completely that what you are doing is not only the right thing for the forest but also very much the right thing in its effect on public sentiment. That is one of the things I want to talk about when I see the head men in Washington.

My very warmest thanks to you and all the other men who did so much to make our stay in Oregon delightful. When you see them please give them my warmest thanks.

Sincerely yours,

GP

GP.MS

Reply to: 2470

Date: September 8, 1988

Subject: Clearcutting

To: Regional Foresters, Sation Directors, and WO Staff

Clearcutting continues to be a controversial issue surrounding National Forest management. It is the basis for numerous appeals, legal actions, congressional inquiries, letters, and press coverage. Despite many years of effort spent informing the public of the role of clearcutting, a significant concern about the practice continues to exist.

Many forests have responded to the clearcutting issue by evaluating alternative methods for harvesting timber. These units have used creative and innovate ways to respond to the concerns of some segment of the public by modifying their silvicultural systems and cutting practices.

Considering the importance of the clearcutting issue, I believe we all must take an open-minded approach in identifying and evaluating silvicultural systems and cutting practices. We should seek opportunities to reduce clearcutting when other alternatives will meet our land management objectives. In making the determination, it is essential to use the best information available with full interdisciplinary involvement. When clearcutting is determined to be the selected method for a site-specific prescription, we must ne confident that it truly is the optimum choice given the specific circumstances involved.

In addition, we must be open and forthright in working with the public in identifying and evaluating options and making site-specific decisions. We must also work to expand our knowledge and understanding of silvicultural practices and harvest methods with which we have had less experience. Throughout this process we must continually demonstrate our professionalism and commitment to caring for the land and serving people.

Under specific forest conditions, clearcutting is an appropriate forest practice. The National Forest Management Act affirms this. That Act also requires that clearcutting only be used when determined to be the optimum method to meet management objectives. By making an open-minded and sincere effort to assess the optimum methods, we will be able to meet the challenge of determining how best to meet our mandate of multiple-use forest management.

/s/ **F. Dale Robertson**
F. DALE ROBERTSON
Chief

**STATEMENT OF
F. DALE ROBERTSON, CHIEF
FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE
Before the**

**Subcommittee on Forests, Family Farms, and Energy
Committee on Agriculture**

United States House of Representatives

Concerning H.R 1969, clearcutting, and ecosystem management

June 16, 1992

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for this opportunity to testify about H.R. 1969, ecosystem management, and clearcutting. I am accompanied today by Dr. Hal Salwasser, Director of the Forest Service New Perspectives program.

We oppose enactment of H.R. 1969 and later in my testimony I'll explain our reasons for that position. However, I would like to begin by talking about ecosystem management and clearcutting on the National Forests.

For many years, the Forest Service has been developing more environmentally sensitive ways to manage the National Forests and Grasslands, particularly through our forest planning process. We intensified our efforts over the past three years under New Perspectives. We have learned a lot from implementing forest plans, New Perspectives field demonstration projects, research efforts, university symposia, and workshops.

On April 28, I sent to interested Members of Congress a notebook titled, "New Perspectives for Managing the National Forest System." It detailed many of the actions taken and things we have learned. I hope that you have had a chance to review it.

Last month, we decided it was time to take what we have learned and transformed "New Perspectives" into ecosystem management. Putting this in simple terms, we have been pursuing an ecosystem perspective, and we like the results. Two weeks ago, I announced the ecosystem approach for the future management of national forests and national grasslands.

Ecosystem management means that the Forest Service will use an ecological approach to achieve multiple-use management of the National Forests and Grasslands by blending the needs of people and environmental values to sustain diverse, healthy, and productive ecosystems. We will combine our scientific knowledge and experience about patterns of relationships among organisms and their

environment with the "land wisdom" of people from the many sectors and cultures of our society to care for the land and serve the people.

I am confident that with our knowledge, expertise, and experience, coupled with stronger public involvement, we can bring the American people and their needs together with the land they own. We can do it better than it has ever been done before, by anyone in the world. That's our challenge under this new philosophy.

An ecosystem approach to managing the National Forests and Grasslands is the right way to go because people depend on the uses, values, and services of ecosystems and because ecosystems are dynamic and complex. Management and care of ecosystems is essential to provide diverse and productive habitat for wildlife and fisheries, forage for domestic animals, clean water, clean air, outstanding opportunities for outdoor recreation, natural wood products for American families, and long-term ecosystem stability. In a global framework, forests and grasslands play vital roles in absorbing carbon dioxide and giving off oxygen. They also serve as an important air filter by taking pollutants out of the air.

Ecosystems change over time whether managed by people or not. How they change is not perfectly predictable. The variables that affect ecosystems are many -- among them fire, wind, floods, insects, pathogens, climate, and how people use and care for the land.

These are important reasons why we are emphasizing an ecosystem approach. Ecosystem management will be based on solid scientific information, supported by professional judgment and experience, and sensitive to the needs of both present and future generations. This includes continual research, monitoring, and evaluation to determine if management is producing desired results on the land and for the people. It also includes making flexible responses to natural forces and variation, new scientific knowledge, emerging technology, and the changing needs, desires, and interests of people.

We will use ecosystem management to strive for the goals specified in our plans and programs. These goals are changing over time. Ecosystem management is the means to an end. It is not an end in itself.

We manage ecosystems for specific purposes such as producing, restoring, or sustaining desired resource uses and products; certain ecological conditions; vital environmental services; and aesthetic, cultural, or spiritual values. This is our statutory mandate: to make available desired forest resources and uses in an environmentally sensitive manner.

This is an important point. There is much discussion these days about whether the intent of ecosystem management is to preserve natural values or ecosystem conditions, including biological diversity, with resource uses and products as secondary byproducts. Or, whether the purpose of ecosystem management is to make available desired resource values, uses, products, and services in ways that do not impair the long-term sustainability, diversity, and productivity of the land.

Our Congressional mandate is clear on this. Under the Forest Service's multiple-use mandate, the purpose of ecosystem management is to make available desired resource values, uses, products, or services in ways that also sustain the diversity and productivity of ecosystems. As we build ecosystem management into every-day Forest Service operations, forest plans will be a primary means to provide an ecological approach to resource management, ensure environmental protection, and maintain the long-term health and productivity of the land and resources in accordance with applicable laws, regulations, and Executive Orders.

Ecosystem management is neither a resource-driven philosophy nor a nature-driven philosophy. It is a philosophy that encompasses both concerns.

In some places, our emphasis will be on ecological conditions and environmental services. In others, it will be on resource products and uses. Overall, our mandate is to protect environmental quality while also making available resources that people need.

Therefore, ecosystem management cannot be reduced to a simple matter of choosing to have either resource products or natural conditions. It must chart a prudent course to attain a balanced mix of forest use and protection. This can only happen by blending multiple-use goals over areas large enough to allow for compatible patterns of different uses and values, that is at landscape or regional scales.

To further round out our new policy statement on ecosystem management, the following basic principles will apply to the future management of the National Forests and Grasslands:

"Take Care of the Land" by protecting or restoring the integrity of its soils, air, waters, biological diversity, and ecological processes.

"Take Care of the People and their Cultural Diversity" by meeting the basic needs of people and communities who depend on the land for food, fuel, shelter, livelihood, recreation, and spiritual renewal.

"Use Resources Wisely and Efficiently to Improve the Economic Prosperity" of communities, regions, and nations by cost-effective production of natural resources such as wood fiber, water, minerals, energy, forage for domestic animals, and recreation opportunities.

"Strive for Balance, Equity, and Harmony Between People and Land" across interests, across regions, and across generations by sustaining what Aldo Leopold in 1949 called the "land community," meeting this generation's resource needs, and maintaining options for future generations to also meet their needs.

One pressing issue that we must deal with under ecosystem management is clearcutting. We will accelerate the reduction in clearcutting as a standard commercial timber harvest practice on the National Forests. In making future forest management decisions, clearcutting will be used only when it is determined to be the optimum method of timber harvest and the only practical method to meet one or more of seven specific objectives. I have specified these objectives in the attached policy statement.

The above principles, ecosystem management and the clearcutting policy are just a beginning. Ecosystem management needs much more discussion, elaboration, refinement, and development. It needs full public participation. Therefore, we invite the Congress and the American people to join us in shaping the evolution of these policies. I have directed Forest Service employees to carry out two other activities in which we invite public participation. First, we are establishing an Ecosystem Management Development, Training, and Interpretation Program to enhance understanding and skills in ecosystem

management. With this program, the Forest Service will expand its work with universities, conservation groups, forest users, and professional societies to develop a 3-5 year program of training, workshops, interpretation, and symposia to bring the relevant technical disciplines and views together in charting the course on ecosystem management and its related research. This Program will build on the foundation laid by our New Perspectives projects.

Second, I have asked each Regional Forester and Station Director to work together with interested publics to evaluate their regional situation and within 90 days develop a 3-5 year strategy for

implementing the above principles and policy. We intend to make good progress at a reasonably rapid pace without disrupting programs, revisiting project decisions, or redoing project field work.

Initially, Regions and Stations will take advantage of the flexibility within existing forest plans to practice ecosystem management. Over time, as forest plans are amended or revised, they will more fully reflect ecosystem management policies.

In conclusion, as we learned under New Perspectives, three very important actions are essential to make ecosystem management successful:

Public involvement - Like never before, the Forest Service will renew its commitment to public involvement and actively seek out and incorporate people's views in our decisions about the management of the National Forests and Grasslands. I envision a new, higher level of dialogue and partnership with the American people as an integral part of ecosystem management. This is even more important now in view of the proposed changes in the administrative appeal process.

Conservation partnerships - Coupled with public involvement, we are expanding our partnerships with State and local governments, the private sector, conservation organizations, and anyone else who has a shared interest in the National Forests and Grasslands. Again, we invite the Congress and the American people to lend a helping hand by working in partnership with us and being involved in our forest planning process.

Land manager/scientist partnerships - We have made great progress under New Perspectives to get land managers and scientists working together as a team in doing the best job possible. Through these partnerships and many more, we will make sure our decisions reflect the best science and we will close the gap between the level of scientific knowledge and its application in our day-to-day management.

It will take time to make ecosystem management the standard for day-to-day Forest Service operations. But we have set the course to make it happen. I believe this is the right step to take at this time. We invite all groups and individuals who care about the national forests and grasslands to take the next steps in partnership with us.

As I stated earlier in my testimony, we oppose enactment of H.R. 1969 which would amend the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 and the Federal Land Management and Policy Act (FLMPA) [actually the Federal Land Policy and Management Act (FLPMA)] of 1976 to prohibit any even-aged silvicultural treatments and even-aged management. The bill would also require the Secretary to prescribe a shift to selection management on sites already under even-aged management or cease managing for timber purposes and restore the native biodiversity, or permit the site to regain its native biodiversity.

The objectives stated in the title of the bill are contradictory. The stated objectives are "to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on the forests of the United States." Timber harvest methods must create conditions which meet the biological requirements of plant and animal species to be regenerated on the site. I know that members of the Agriculture Committee know you can't grow tomatoes in the shade. There are also certain species of trees and their associated wildlife that cannot be grown in the shade.

To conserve native biodiversity, ecosystem managers need all the tools available including even-aged management practices. The majority of naturally occurring forests in this country originate from a variety of natural disturbances, some of which can be simulated only through

even-aged management practices. There is no single management prescription that is best for any one geographic region or vegetation type. The full range of biodiversity can not be provided for on every acre or in every forest stand. However, biodiversity can be maintained at the landscape scale, if ecosystem managers have all the management tools, including even-aged management, at their disposal.

One objective of this legislation, to reduce the amount of clearcutting on National Forest System lands, has already been dealt with through my June 4, 1992, direction to Regional Foresters and Station Directors which is attached to my testimony. As I mentioned earlier in my testimony, clearcutting will only be used where it is the optimum method of timber harvest and the only practical method to meet one or more of seven specific objectives.

This bill would have PAYGO implications by significantly reducing the volume of timber available for harvest and the associated Federal receipts.

Thank you. This completes my prepared statement. I will be pleased to respond to any questions.

[The policy statement follows on the next page].

Policy Statement: Reduce Clearcutting on the National Forests

The objective of this new provision is to reduce clearcutting on National Forest System lands and make greater use of individual tree selection, group selection, green tree retention, shelterwood, seed tree, and other regeneration cutting methods which collectively provide for a more visually pleasing and diverse vegetative appearance on a forest-wide basis.

This policy would reduce clearcutting where it has been used as a standard timber harvest practice on the National Forests. Clearcutting would be limited to areas where it is essential to meet forest plan objectives and involve one or more of the following circumstances:

1. To establish, maintain, or enhance habitat for threatened or endangered species.
2. To enhance wildlife habitat or water yield values, or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar developments.
3. To rehabilitate lands adversely impacted by events such as fires, windstorms, or insect or disease infestations.
4. To preclude or minimize the occurrence of potentially adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health.
5. To provide for the establishment and growth of desired tree or other vegetative species that are shade intolerant.
6. To rehabilitate poorly stocked stands due to past management practices or natural events.
7. To meet research needs.

This clearcutting policy combined with the new USDA-Forest Service ecosystem management can reduce clearcutting by as much as 70 percent from FY 1988 levels. The reduction in timber volume due to the clearcutting policy over the short-run is likely to be about 10 percent. There would be little reduction in timber volume over the long-term. There will be increases in timber sale costs and some areas will not be harvested because local timber industries do not have appropriate logging equipment to use other methods on steep slopes. However, judicious use of alternative harvest methods can be substituted for clearcutting on most areas of the National Forests.

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USDA FOREST SERVICE AND REVENUE SHARING WITH STATES 1905-1998

Gerald W. Williams, Ph.D.
USDA Forest Service
Pacific Northwest Region
June 30, 1998

The idea of public domain lands being a source of revenue collection, as well as taxes, goes back to the beginnings of the United States. For more than a hundred years, the principle function of the General Land Office was to sell or grant portions of the public domain to homesteaders, ranchers, railroads, and states. The sale of millions of acres of land was a huge revenue source for the federal government. States, on the other hand, did not have the huge public land base which they could sell to raise revenues. The states did, however, have some public domain lands which were granted to them by the Congress for schools and universities. Most states sold these parcels--usually sections 16 and 36 of each township--to support the building of schools and universities, as well as supply state operating funds (Clawson and Held 1957).

INTRODUCTION

Beginning with land withdrawals in the late 1700s for naval timbers, the federal government has been designating unique lands for forestry, grazing, park, and wildlife purposes from the public domain. For more than the first century, this was not a problem as there were billions of acres of remaining public lands. Only when there were "wholesale" withdrawals of public lands in the 1890s did the states and Congress become interested from the development, settlement, and revenue standpoints.

For the federal government, the issue of millions of acres of national lands being tax exempt from state and county taxes (especially property taxes) has been a revenue/tax and states rights question for the last century. To placate the demands of state and local governments, the Congress has several times attempted to "fix" the problem:

The federal government is in an unusual role as a landowner, partly because of its unique legal status, and partly because of its very size as a landowner. The federal government provides on its lands many of the services, such as roads and fire protection, that other landowners expect and receive from local government. If the federal government were to pay taxes or tax equivalents on its land, some adjustments would certainly have to be made for the cost of these services. Recognizing the reasonable basis for their claims the federal government has made various arrangements to meet the need of local governments for revenues from federal land. It allows taxes to be levied, or at least payments directly in lieu of taxes to be paid... In making certain grants to states, it bases the size of grant partly on the amount of federal land in the state (Clawson and Held 1957: 315).

The issue of tax exempt federal property dates to the history of the United States in the first part of the 19th century. In the early 1800s, the states believed they should be compensated for the land within their boundaries which was owned by the federal government. An important U.S. Supreme Court decision in 1819 (*McCulloch v. Maryland*) decided that the federal government was exempt from state and local taxes, unless Congress specifically approved.

Today, the tax exempt status of federal land and the compensation paid to states and counties, with the approval of Congress, has several dimensions. One revolves around dollars from the U.S. Treasury in lieu of (instead of) taxes, while another spins in the notion of equitable distribution of the proceeds (revenue sharing) derived from the sale of goods and services from the national lands.

There are many obvious advantages to having the federal government allocate money to states and counties based on the amount of federal land that is within their boundaries or based on a percentage of gross or net revenues:

- Substituting tax revenues from exempt federal property
- Offset taxes paid by residents to keep state and local governments functioning
- Provide funding for public projects that would otherwise be too expensive
- Provide a steady source of federal dollars in spite of ups or downs of the economy
- Nearby federal land base is an income enhancer for local businesses
- Keep controversy low in regard to the continuation of federal ownership and management of national lands (Clawson and Held 1957)

There are also disadvantages to both methods for the states and the federal government:

- The amount of money going to the U.S. Treasury is smaller than the total receipts thus creating an impression of "losing money" on management
- Management/operating funds may be reduced
- Increasing pressure on the federal lands to produce income
- The distribution of money based on revenues may not be equitable
- Funding based in revenues may be highly variable creating an unstable source of income
- Constant agitation to sell the federal lands (Clawson and Held 1957)

FOREST RESERVE ACT OF 1891

The Forest Reserve Act of March 3, 1891 (26 Stat. 1095, section 24), became the basis for the President to establish forest reserves from public land that was covered with timber. Within weeks of the passage of the act by Congress, President Harrison had established the first forest reserve--the Yellowstone Park Timber Land Reserve. President Cleveland stopped creating new forest reserves in September 1893--after creating two forest reserves in Oregon: the huge Cascade Range Forest Reserve and the diminutive Ashland Forest Reserve--because there were about 17 million acres in reserve status, but no system of management for these national lands. However, President Cleveland, before he left office in the spring of 1897, established or enlarged another 21.3 million acres of forest reserves at the request of the Secretary of the Interior and a forest commission from the National Academy of Sciences (Hays 1959; Ise 1920; Pinchot 1947; Robinson 1975; Steen 1976; Williams 1997a).

ORGANIC ACT OF 1897

On February 22, 1897, when President Cleveland established or enlarged 13 forest reserves in the West the first outright antagonism toward the federal government in the establishment of forest reserves (now national forests) came. The outrage from the western states and congressional delegations was almost unanimous in opposition to the new "Washington's Birthday Reserves." Opponents fueled the debates in Congress with notions that the forest reserves would somehow slow or impair the growth of the western states, keep property tax revenue at a low level, and the presence of federal land would increase costs to the states (Ise 1920; McCarthy 1977 and 1992; Steen 1976; Williams 1997a and 1997b; Williams and Mark 1995).

The result was passage of a law on June 4, 1897, which: 1) suspended the new reserves for nine months to allow "homesteading" and 2) created a management system within the Department of the Interior to manage the new reserves, as well as older ones dating from 1891-1893. There were many important sections of the act, including the authority to charge fees for using the reserves. This fee provision would be tested over the next several years and cause problems for both the management agencies and the people paying the fees (Cameron 1928; Hays 1959; Ise 1920; Robinson 1975; Steen 1976). Later, the Forest Service would refer to this law as the Organic Act of 1897, or the Organic Administration Act, or sometimes the Forest Administration Act. Opposition to the forest reserves largely dwindled after a few years.

USDA FOREST SERVICE ESTABLISHED IN 1905

Management of the forest reserves was transferred from the Department of the Interior to the Department of Agriculture on February 1, 1905 (33 Stat. 628). At nearly the same time, the Bureau of Forestry name was changed to the Forest Service (33 Stat. 861, 872-873). This new land management agency (the previous Bureau of Forestry had no management control over the reserves, it could only professional forestry advice to the USDI) sought to quickly exert "scientific forestry" over the management of the millions of acres of federal reserves (Hays 1959; Pinchot 1947; Steen 1976).

Part of the act which transferred management over the forest reserves to the USDA also allowed a special fund which was generated by the revenues from fees. Referred to as the special forestry fund, it was "made available for the Secretary of Agriculture to spend at his discretion (Hays 1959: 46)."

From the standpoint of "gate receipts" the new [USDA Forest Service] administration continued to function brilliantly. Forest revenues in 1907 were more than twice as large as in the previous year, totaling \$1,571,059.44. In 1908 the figure was \$1,842,281.87. This prosperous intake [of money] speedily attracted legislative attention and voices began to be raised against the continuation of the forest reserve special fund feature of the transfer law of 1905. The brakes began to be applied the following year (Cameron 1928: 243).

In the summer of 1905, the Forest Service decided to begin charging livestock owners for grazing privileges on the national forests. Another howl of protest ensued from western ranchers. Although upheld in federal courts, the payment of fees for grazing--which was previously free--created an antagonism which still carries emotional weight and strong congressional support to fight the rates charged to livestock owners for grazing their animals on public lands. Related new fees that were imposed for coal land leasing and water power sites and developments on national forest land raised the ire of many developers. Another money producing component of the national forest system came from timber sales. Although the sales were small in the 1897-1904 period, under the USDI, timber sales would pick up considerably after the Forest Service began operations, which in turn produced a lot more revenue (Clary 1986; Hays 1959).

With these fees, the resultant dollars flowing into the fund became a problem as there were increasing demands to share the wealth with the states and to simply abolish the fund and instead have the revenues go directly to the Treasury Department. Part of the fund was given to the states (see discussion below) to compensate for federal lands and to share the receipts. When Pinchot wished to have the fund made permanent in 1910, the notion backfired--Congress abolished the special forestry fund (Hays 1959).

REVENUE SHARING ACT 1906

The annual Agricultural Appropriation Act of June 30, 1906 (34 Stat. 669, 684), forbade unrestricted spending from the forest reserve special fund. It also contained a provision "designed to allay the dissatisfaction of the West with regard to the lack of tax revenue, immediate or prospective, from the areas permanently set aside as forest reserves (Cameron 1928: 243-244)." This act provided that ten percent of the revenues generated "from national forests [will be sent] to the various states and territories, for the benefit of the public schools and roads of the counties in which the reserves were situated (Ise 1920: 273)."

"MIDNIGHT RESERVES" OF 1907

The ten percent revenue sharing with the states was continued in the March 4, 1907, appropriations act (34 Stat. 1270). The act had other significant features: 1) it abolished the forest reserve special fund and directed that all money received from the use of the national forests be deposited into the U.S. Treasury; 2) changed the name of the forest reserves to national forests; 3) raised the Forester's (Chief after 1935) salary to \$5,000 per year; and 4) essentially repealed the Forest Reserve Act of 1891 by stating that no new forest reserves were to be created or enlarged except by act of Congress, rather than the President, in the states of Oregon, Washington, Idaho, Montana, Colorado, and Wyoming--notably left out was California.

The last provision, which took away the Presidential authority to establish new forest reserves, resulted in Gifford Pinchot and his staff with presidential blessing scrambling to map and describe many new reserves in the affected states before the bill had to be signed into law. On March 1st and 2nd, just days before the act was signed, President Roosevelt established 16 new reserves (including renaming and combining several existing reserves) and expanded another 20 reserves containing more than 16 million acres. Now referred to as the "midnight reserves," the howls of protest from the affected western states were predictable (Hays 1959; Ise 1920; McCarthy 1977 and 1992; Pinchot 1947; Robinson 1975; Steen 1976; Williams 1997a; Williams and Mark 1995).

REVENUE SHARING RISES TO 25 PERCENT IN 1908

The ten percent figure was not satisfactory to the West as the western states saw little revenue sharing money during the 1906-07 period. Wanting as much money as possible to offset the now huge federal ownership of national forest system land, the states once again brought the matter to Congress. After more debate about revenue sharing, as well as the continued existence of the national forests, Congress, on May 23, 1908, increased the percentage from 10 to 25 (35 Stat. 251, 260). (See the attached table for the amount of dollars nationally distributed to the state and counties.) "But even 25 per cent was not enough, and repeated efforts have been made since to have this further increased (Ise 1920: 273)." Since this time, the act has been referred to as the "Twenty-Five Percent Fund Act" of 1908 (16 U.S.C. 500).

REVENUE SHARING ARGUMENTS IN 1910 AND 1911

In 1910 there was a concentrated effort in Congress to raise the revenue sharing percentage another 10 percent. Congressmen Martin and Rucker from Colorado argued that the amount needed to be increased to 35 percent or more as John Ise reported:

As Martin expressed it, "We regard it in the light of having returned to us 35 per cent of what you have taken away from us." Appealing to [Congress- man] Payne of New York, he continued: "Your state has had the benefit of its public domain and all its resources, and now you propose to take away all that remains of the public domain in our state, its water power, its coal lands, its oil lands, its phosphate lands, and everything else, and turn them over to a Federal bureau to milk them perpetually as a source of Federal profit" (Ise 1920: 275).

Such eloquent and emotional statements failed to sway enough members of Congress to pass the bill to increase the percentage. "This attempt of the western men to secure more of the national receipts for schools and roads thus failed, but it did not stop the complaints, nor the efforts to secure a larger share of the revenues (Ise 1920: 275)."

There is an underlying assumption regarding arguments over the percentage share of the revenues from the national forests: The forest land would be better "managed" if it were in private ownership (Williams 1997b). In reality, companies with large holdings of timber have generally been able to stave off a heavy property tax burden until the actual harvesting of the trees. Taxes are often paid on actual harvest rather than forest land covered with trees. Thus private forest land taxes are often assessed on the receipts or profit from harvesting, much as the national forest revenues are generated from timber harvest, grazing, mining, and recreation activities and fees (Ise 1920).

There was one additional revenue sharing piece of legislation that passed in 1910. On June 20, 1910, there was an act passed that set up a special fund for state school lands inside the national forest boundaries in Arizona and new Mexico. These funds were tracked separately for many years (see attached table).

The Weeks Act of 1911, which authorized purchase of lands in the East for national forest purposes, also made these new forests fall under the provisions of the Twenty-Five Percent Fund Act of 1908.

OREGON & CALIFORNIA (O&C) LANDS AND REVENUE SHARING

The Oregon and California Railroad Grant Lands (O&C lands), came into existence shortly after the Civil War. Congress provided subsidies, in the form of a land grant to the State of Oregon, with three conditions for sale of the land to settlers, to construct a railroad from the northern end at Portland to the southern end at the California border. In 1869, the Oregon and California Railroad Company was granted 3,728,000 acres. Construction was completed in 1887 by the Southern Pacific Railroad Company which acquired the O&C Railroad. Both companies violated all conditions of the land grant.

After the state asked for assistance, the Federal government responded on April 30, 1908, when Congress passed a joint resolution (35 Stat. 571) directing the U.S. Attorney to reclaim through court action all unsold O&C railroad grant lands. Seven years of litigation followed, culminating in a decision handed down by the U.S. Supreme Court in 1915 to forbid the Southern Pacific in making further land sales, but also stating that the actual disposition of the unsold O&C land was a legislative rather than a judicial function (238 U.S. 411). Congress passed the O&C Revestment Act (sometimes called the Chamberlain-Ferris Act) on June 9, 1916, returning 2.4 million acres of unsold O&C lands to Federal ownership, with management by the GLO (BLM since 1946) and the Forest Service. The BLM manages approximately 2.1 million acres of O&C lands, while the Forest Service manages around 492,400 acres of O&C lands in seven national forests.

Revenues sharing was set in the 1916 act stated that an O&C Land Grant Fund be established in the Treasury Department. Proceeds were to be paid to railroad for the take-back of the unsold grant land, back taxes owed by the railroad to the 18 O&C counties, then distribute the remaining according to this "formula": 25 percent to the state, 25 percent to the counties, 10 percent to the Treasury fund, and 40 percent to the federal Reclamation Fund. This formula proved to be unsatisfactory almost immediately, but it took 20 years to change it. The O&C Sustained Yield Act of 1937 changed the distribution formula: 25 percent was to go to the Treasury (after paying several huge debts) and the remaining 75 percent of the O&C receipts were to go to the counties (Richardson 1980).

Since June 24, 1954, revenues generated from the sale of forest products, usually timber, from the O&C lands are divided between the U.S. Treasury, the county where the revenue was generated, and the administering agency. Of the money received, 25 percent is returned to the Treasury, another 25 percent is retained by the administering agency, and the remaining 50 percent is given directly to the county where the O&C lands are located. The 25 percent which is retained by the agency, often referred to as the "plowback" fund, is used for management of the O&C lands, including such projects as reforestation, road construction, recreation improvements, and fish and wildlife habitat enhancement (Richardson 1980). See the attached table for the Forest Service portion of the O&C funds sent to the State of Oregon.

OTHER REVENUE SHARING ACTS

Three other unique revenue sharing laws were enacted for the Forest Service between 1910 and 1976. The first related to various land utilization projects, submerged lands, and (in 1960) to the national grasslands. This revenue sharing act came from Title III of the Bankhead-Jones Farm Tenant Act of July 22, 1937. The revenues from this program have been shared with the affected counties and tracked by the Forest Service since 1939 (see attached table).

The second of the revenue sharing acts concerns the Tongass National Forest in Alaska. In an act passed in July 1947, revenues generated from timber harvest activity on Indian claimed lands which the Tongass forest administered. The money was held in escrow until the act of July 24, 1956, authorized payment of the money to the State of Alaska. The revenues were tracked from 1948 to 1957 (see attached table).

The last unique revenue sharing act concerned the Superior National Forest in Minnesota. The act of June 22, 1948 (PL 733) concerned the land around the newly established roadless area in what is now the Boundary Waters Canoe Area. The act distributed funds at a rate of 0.75 percent of the appraised value of the land in Cook, Lake, and St. Louis Counties rather than just the 25 percent of normal receipts. New land

appraisals are conducted every ten years. This was revised by the Boundary Waters Canoe Wilderness Act of 1978.

The National Forest Management Act of 1976 expanded the scope of Forest Service revenues considered for distribution to the states and counties. With this act, receipts from purchaser credits for road construction and Knutson-Vanderburg Act funds were added to existing revenues collected from the sale of timber and other commodities, roads, and trails. Salvage timber sales were added to the receipts in 1989.

PAYMENTS IN LIEU OF TAXES (PILT) ACT OF 1976 AND 1982

The Payments in Lieu of Taxes (PILT) Act of October 20, 1976 (90 Stat. 2662), was designed to take many components of the earlier acts--dating back to 1906--and revise as necessary those components dealing with national forest lands. As with earlier laws, this was enacted to compensate states and counties for the presence of federal land within their boundaries. However, the PILT Act also intended to increase the federal funding above the rate of other revenue sharing programs. In addition, PILT payments can be used for any governmental purpose, not just roads and schools.

The PILT act was itself substituted by Chapter 69 "Payment for Entitlement Land" in the Money and Finance Act of September 13, 1982 (97 Stat. 258). This act also includes legislation from other agencies:

10 pieces of revenue-sharing legislation...These include the 25% Fund (USFS), Mineral Leasing Act (BLM), Federal Power Act (Federal Energy Regulatory Commission), Taylor Grazing Act (BLM), Bankhead-Jones Farm Tenant Act (USFS and BLM), Mineral Disposal Act (BLM), Wildlife Refuge Revenue Sharing (USDI Fish and Wildlife Service) and several minor provisions or clarifications (Schuster 1995: 33).

Basically, the Forest Service distributes money to the states and counties through the act, which is still referred to as "payments in lieu of taxes" (PILT). As Ervin Schuster simply defined the meaning of PILT:

Payments in Lieu of Taxes (PILT), is a federal revenue-sharing program designed to compensate local governments for the presence of tax-exempt federal lands within their jurisdictions....More than half the counties in the country receive PILT payments and are thus linked to land management.... (Schuster 1995: 31).

The first PILT payments, administered by the BLM, were made in 1977. These payments to states and counties are determined by annual congressional appropriations. "In the 17 years since the [1976 Act]..PILT payments ranged from about \$95.5 million in FY 1982 to \$101.4 million in FY 1984...with an average of \$101.4 million (Schuster 1995: 35)." If the appropriated funds from Congress are not at the specific level, then payments are adjusted downward on a percentage basis.

Originally, PILT payments were not adjusted for inflation, but this was corrected in 1994 by amending the act, which also provided increasing the dollars owed by 120 percent (to make up for previous inflation), and to stretch the increases over a five-year period. These adjustments, however, have not increased the funds paid to the states and counties because the total amount is still set by Congress which has been unwilling to raise the PILT payments.

The attached table shows the annual PILT payments to counties in Oregon and Washington from 1977 to present.

NORTHWEST FOREST PLAN 1994

On April 2, 1993, President Clinton, Vice President Gore, and several cabinet members met in Portland, Oregon, to listen to the public in the debate over federal forest land management in the spotted owl region of the Pacific Northwest. Concerns were expressed, many of them opposites, including the need to:

- + Reduce harvest levels versus the need to increase harvest levels
- + Protect the spotted owl versus the owls are not threatened
- + Help timber dependent communities versus assisting them in self-reliance
- + Keep the number of timber jobs versus helping workers cope with change
- + Increase county timber revenues versus the need to diversify the economy

Immediately after the forest conference, the Forest Ecosystem Management Assessment Team (FEMAT) came together to solve the seemingly intractable forest problems affecting the Forest Service, BLM, communities, states, tribes, timber industry, and workers. In a matter of 60 days, the FEMAT team proposed a number of management options to the President--Option 9 was chosen. All of the options were transformed into alternatives in the accompanying environmental impact statement (EIS).

For local governments, the issue revolved around reduced timber harvest which negatively affected jobs, income, revenue sharing, businesses, property taxes, etc. When the final EIS was printed in the early spring of 1994, the alternative (option) chosen included provisions for extensive protection of spotted owl, old trees, salmon, and other old growth dependent species.

There was another provision in the Northwest Forest Plan to protect and enhance the ability of communities to cope with the coming changes projected in the EIS. The plan included an economic assistance program called the Northwest Economic Adjustment Initiative. Part of the initiative was to continue payments to the affected counties at a rate above the current revenues, allowing time for the communities to adjust. This was referred to as the "safety net" (which actually began in 1991 by congressional action). The safety net was based not on the payments for timber receipts, but rather on a fixed-payment schedule calling for 85 percent of the average timber receipts from the years 1986-90, with the annual payment to be decreased three percent per year until 2003 were the payments will reach 58 percent of the five-year average. This rather complex formula was worked out by Congress in the Omnibus Budget Reconciliation Act of 1993.

Another element of the Northwest Forest Plan was setting up a grant program to assist counties, tribes, communities, timber workers, and businesses with making the transition to fewer timber-related jobs and fewer dollars from the federal government. The program included a federal financial commitment of \$1.2 billion over a five-year period beginning in fiscal year 1994. The following accomplishments were reported:

PROGRAM	1994	1995	1996
Program Funding	\$248,000,000	\$268,000,000	\$209,000,000
Safety Net	\$233,000,000	\$205,000,000	\$207,000,000
Job Training	\$8,400,000	\$19,000,000	\$13,000,000
Business Assistance	\$28,000,000	\$46,000,000	\$63,000,000
Community Assistance	\$73,800,000	\$116,000,000	\$108,000,000
Jobs in the Woods	\$27,000,000	\$35,000,000	\$31,000,000

ALTERNATIVE REVENUE SHARING PROPOSALS

In the mid-1980s, there was an administration proposal to exchange or interchange Forest Service and BLM administered lands in the West. Although relatively minor changes were envisioned, except in western Oregon where all the BLM timber land would be transferred to Forest Service management, the proposal fell on deaf ears in Congress. Strong opposition from states and especially counties doomed the proposal. For example, the Association of O&C Counties in southwestern Oregon did not want the O&C lands traded for fear that the revenue sharing would decrease to the standard 25% if they were made into national forests. This would be a cut of half their federal dollars. The Legislative EIS was dead on arrival in Congress.

In the fall of 1997, there is new direction from the Office of Management and Budget (OMB) to reform the payments to states and counties. The OMB decided that it wants the USDA to propose fixing the PILT and revenue sharing acts:

In addition, we ask that your FY 1999 submission contain a legislative proposal to delink National Forest System payments to states from receipts. Currently the Forest Service pays 25 percent of receipts from timber sales and other fees to states, funding public schools and roads in counties where the receipt-generating forests are located. While it is appropriate for the Federal Government to provide payments for reduced tax revenues that are a result of Federal land ownership, the current system leads states and counties to be dependent for these payments on timber harvest levels and the production of other commodities. This creates incentives that can operate against sustainable commodity production. The Administration supports reform of these and other disincentives to the maintenance of healthy and diverse ecosystems (Glauthier 1997).

In order to comply with the OMB request, the Forest Service has identified several options to consider:

- Phasing in changes over several years to allow community transition
- Increasing the PILT per acre payment
- Linking or delinking future payments to inflation
- Considering annually appropriated money versus a permanent appropriation
- Split agency administration of the program--USDI and USDA
- Transition from CY to FY payments for certain lands
- Consistent treatment of all lands, including the Boundary Waters Canoe Area Wilderness
- Resolving treatment of O&C lands administered by the Forest Service
- Interagency consistency of federal in lieu of tax payments
- Requiring that payments be used for roads and schools

SUMMARY

The origins of the social/political movement to somehow charge or assess the federal government for federal lands in the states or counties has been often obscured in the fog of history. In terms of the legislative results, the evidence is clear: Federal lands cannot be assessed state and local property taxes--they are tax-exempt. However, because of pressures from many western legislatures and congressional delegations, the Forest Service is required by law to share in the total monetary receipts with the states and counties wherein the national forest lands are located.

Over the years, the U.S. Treasury has distributed billions of dollars to the various states, which are mostly located in the West. Controversy about the percentage of share, as well as the need for federal ownership of forest lands, will dominate state and national agendas for decades to come because of the loss of federal tax dollars and the property rights (Wise Use) advocates.

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**FOREST SERVICE REVENUE SHARING TO STATES & COUNTIES 1905-1997
(IN DOLLARS)**

YEAR	25% FUND ¹	AZ & NM ²
1905	75,510	
1906	153,032	
1907		
1908	447,063	
1909	441,552	
1910	510,000	1,000
1911	485,000	30,000
1912	518,000	36,088
1913	587,000	45,547
1914	599,000	41,000
1915	611,000	38,000
1916	696,000	41,000
1917	849,000	62,000
1918	876,000	70,000
1919	1,070,000	79,000
1920	1,180,000	73,000
1921	1,023,000	60,000
1922	846,000	36,000
1923	1,321,000	50,000
1924	1,302,000	45,000
1925	1,243,000	28,000
1926	1,286,000	14,000
1927	1,285,000	26,000
1928	1,351,000	36,000
1929	1,565,000	41,000
1930	1,678,000	41,000
1931	1,241,000	31,000
1932	568,000	21,000
1933	650,861	28,456
1934	822,862	23,243

NOTES: 1 = Returns at 10% of receipts Act of June 30, 1906 (34 Stat. 669, 684), then raised to 25% under Act of May 23, 1908 (35 Stat. 251, 260).

2 = Returns to Arizona & New Mexico for state school lands inside the national forest boundaries Act of June 20, 1910.

FOREST SERVICE REVENUE SHARING TO STATES & COUNTIES 1905-1997
(IN DOLLARS)

YEAR	25% FUND ¹	AZ & NM ²	LUP ³	ALASKA ⁴	MN ⁵	O&C (FS) ⁶
1935	817,634	20,773				
1936	996,000	32,000				
1937	1,214,547	27,995				
1938	1,178,883	31,000				
1939	1,215,925	24,000	1,000			
1940	1,445,973	23,000	1,000			
1941	1,568,754	23,000	2,000			
1942	1,692,877	23,000	2,000			4,000
1943	2,502,543	27,000	4,000			18,000
1944	4,400,000	38,000	3,000			188,000
1945	4,038,840	36,000	7,000			169,000
1946	3,463,769	36,000	11,000			186,000
1947	4,595,941	49,000	6,000			245,000
1948	6,010,432	57,120	4,000	32,599		621,000
1949	7,719,494	60,775	28,000	33,078	43,458	610,000
1950	8,407,000	72,000	17,000	19,000		610,000
1951	13,974,027	107,294	15,000	36,512	4,943	950,000
1952	17,358,503	131,588	12,000	58,335	14,597	1,086,000
1953	18,649,794	122,755	168,000	51,817	10,537	322,000
1954	16,440,000	103,000	443,000	77,000		904,000
1955	19,459,000	114,000	374,968	146,241		945,000
1956	27,893,210	129,404	459,795	142,046	46,497	1,864,337
1957	26,975,307	105,474	491,389	132,982	47,951	2,671,299
1958	22,204,787	117,161	460,109		48,240	2,572,117
1959	29,668,588	113,861	452,894		121,309	2,713,891
1960	35,408,615	139,728	391,987		123,275	3,408,422
1961	25,956,348	99,211	420,714		123,550	3,052,071
1962	27,235,140	80,462	389,506		125,432	2,661,607
1963	29,993,959	100,413	455,379		130,986	3,256,437
1964						

NOTES: 3 = Revenues shared from Land Utilization Areas and National Grasslands (Title III, Bankhead-Jones Farm Tenant Act of July 22, 1937).

4 = Tongass National Forest Indian receipts under Act of July 24, 1956.

5 = Revenues to Minnesota at 0.75% of the appraised value of land in the Superior NF by Act of June 22, 1948 (PL 733) instead of 25% fund and from the Boundary Waters Canoe Wilderness Act of 1978.

6 = O&C land under Forest Service management in western Oregon. Money given to the BLM to distribute with their revenue sharing money under the distribution formula in the Act of June 24, 1954 (50% to counties, 25% to agency administering the land, and 25% to Treasury).

FOREST SERVICE REVENUE SHARING TO STATES & COUNTIES 1905-1997
(IN DOLLARS)

YEAR	25% FUND ¹	AZ & NM ²	LUP ³	ALASKA ⁴	MN ⁵	O&C (FS) ⁶
1965						
1966						
1967	34,912,243	106,086	463,728		145,488	5,128,206
1968	52,325,638	90,193	538,155		146,232	5,219,645
1969	78,021,921	124,709	505,888		124,709	5,201,821
1970	71,896,615	84,338	511,935		258,006	7,413,381
1971	56,647,198	69,316	529,502		259,038	5,552,849
1972						
1973						
1974						
1975						
1976						
1977						
1978						
1979	280,295,427					
1980	233,600,000	161,000			712,000	
1981	230,400,000	121,252	12,100,00		710,799	
1982	137,640,000	15,621	10,300,000		711,025	
1983	192,711,000		9,912,000		712,000	
1984	224,900,000		10,721,000		716,015	
1985	212,241,000		15,300,000		716,015	
1986	262,069,000		7,300,000		716,148	
1987	293,294,000		11,014,000		716,149	
1988	353,806,000		7,187,000		1,116,000	
1989	358,245,000		14,757,000		1,252,000	
1990	327,180,000		1,730,000		1,251,000	
1991	329,211,000		7,548,000		1,255,000	
1992	301,474,000		5,818,000		1,256,000	
1993	307,896,000		2,711,000		1,267,000	
1994	272,216,000		3,848,000		1,267,000	
1995	254,443,000		5,114,000		1,276,000	
1996						
1997						
1998						
1999						

**PILT PAYMENTS TO OREGON AND WASHINGTON
COUNTIES AND STATES 1977-1997**

FISCAL YEAR	FS 25% FUND ¹	BLM FUNDS ²
1977		108,046,771
1978		96,149,772
1979		104,287,107
1980		103,529,318
1981		104,023,687
1982		49,477,694
1983		56,019,074
1984		56,038,903
1985		122,728,305
1986		
1987		
1988		
1989		
1990		
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		

LAW ENFORCEMENT IN THE FOREST SERVICE: A BRIEF OUTLINE OF THE HISTORY

Gerald W. Williams, Ph.D.
Pacific Northwest Region

Before March 3, 1891 - At this time period, there were no National Forests in the United States. Everything in Public Domain ownership, except for several National Parks (Yellowstone in 1872, with Yosemite, Sequoia, and General Grant NPs in 1890 - LE by U.S. Cavalry not until 1886). There were no Federal agents - all criminal investigations and law enforcement were handled by U.S. Attorney and local officials.

Murder - rarely along the wagon roads and railroads.

Theft - rarely along the wagon roads and railroads.

Other felonies - rare.

1891-1897 - First Forest Reserves (renamed National Forests in 1907) established in the West on March 30, 1891 (Yellowstone Park Timberland Reserve). From 1891-1893, Forest Reserves (FR) were established in WY, CO, NM, OR, CA, AK, WA, and AZ). No more FRs established until 1897 because of a lack of management. There were no Forest Rangers and no Federal agents - all criminal investigations and law enforcement were handled by local officials.

1. **Sheep and cattle trespass** (grazing not permitted in Forest Reserves until 1897).

2. **Land fraud:**

- a. Under the various Homestead Acts.
- b. Under the Timber and Stone Act of 1878.
- c. Under the Lieu Land Act.
- d. Under the Oregon School Land - sections 16 and 36.

1897-1905 - Forest rangers politically appointed in the General Land Office (Department of the Interior). This was the first time that any Federal employees were "on-the-ground." There were no law enforcement agents - much of the case-by-case investigation was carried on by the rangers doing field investigations and reports, which were usually sent on to the General Land Office for further action.

1. **Grazing** - sheep and cattle trespass (timing of entry and exit from the Forest Reserves) as well as crowding of other permittees. Note - in central and eastern Oregon there were several notable sheep/cattle shootings, as well as the slaughter of sheep on the "traditional" cattle ranges.

2. **Land fraud:**

- a. Under the various Homestead Acts.
- b. Under the Timber and Stone Act of 1878.
- c. Under the Lieu Land Act (part of the Organic Act of 1897).
- d. Under the School Land Act - sections 16 and 36.

3. Forest fires:

- a. "Light burning controversy" - burning of the grass and small trees in the spring or fall to promote the growth of new grasses for grazing animals (practiced by the Indians for centuries and by the pioneers for several generations).
- b. Accidental escaped fires - from homesteads and mining operations.
- c. Accidental fires from railroad operations - steam engines without spark arrestors and natural spark caused fires from the railroad wheels grinding against the tracks.
- d. Arson - burning the forest to get rid of those "damned trees."

4. Mining:

- a. Claims to gain free resource use - timber and hot springs.
- b. Claims to make forest housing for self/family - no minerals.
- c. Salting of mines to make money from unsuspecting buyers.

1905-1945 - Forest rangers came under the new USDA Forest Service and the U.S. Civil Service Commission. FS employees were given great authority (there were no Regional Offices until December 1908), although communication with the Washington Office was very slow. There were no law enforcement agents - much of the case-by-case investigation was carried on by the rangers doing field investigations and reports. Beginning in 1909, the six new Regional Offices assigned one or more employees to the lands section (where most of the "action" was taking place). After thorough investigations, cases were usually sent on to the General Land Office for further action. Field personnel were authorized to carry sidearms until around the beginning of WWII.

- 1. **Grazing** - sheep and cattle trespass (timing of entry and exit from the Forest Reserves) as well as crowding of other permittees.

2. Land fraud:

- a. Under the various Homestead Acts
- b. Under the Timber and Stone Act of 1878.
- c. Under the Lieu Land Act (part of the Organic Act of 1897).
- d. Under the School Land Act - sections 16 and 36.
- e. Under the Forest Homestead Act of 1906.

3. Forest fires:

- a. "Light burning controversy" - burning of the grass and small trees in the spring or fall to promote the growth of new grasses for grazing animals (practiced by the Indians for centuries and by the pioneers for several generations).
- b. Accidental escaped fires - from homesteads and mining operations.
- c. Accidental fires from railroad operations - steam engines without spark arrestors and natural spark caused fires from the railroad wheels grinding against the tracks.
- d. Arson - burning the forest to gain employment to fight the same fires (especially during the Depression from 1929 to 1933 - after which the presence of the CCC to fight fires usually stopped the arson).

4. Mining:

- a. Claims to gain free resource use - timber and hot springs (Terwilliger).
- b. Claims to make forest housing for self/family - no minerals.
- c. Salting of mines to make money from unsuspecting buyers.

5. Vandalism - of the new recreation sites (many built by the CCC).

6. Game laws - poaching, especially during the Depression and WWII (Rangers were given the authority as game wardens).

7. Moonshining - small stills were scattered in Forest areas near remote towns during and after the Prohibition era 1919-1939.

1945-PRESENT - The first law enforcement agents were hired in 19__, although much of the case-by-case investigation was carried on by field personnel. After thorough investigations, cases were usually sent on to the local District Attorneys or directly to the State or Federal courts. Cooperation with the County law enforcement officials for recreation site patrols (since 1974) and for marijuana-cannibis detection patrols (since 1985).

1. Grazing - a small amount of sheep and cattle trespass (timing of entry and exit from the National Forests).

2. Occupancy - remote locations where "hippies" sometimes stayed in old administrative structures (mid-1960s to early 1970s).

3. Forest fires - from the 1950s to 1970s some employees were designated as State Fire Wardens, with the authority to give infraction tickets.

- a. Accidental escaped fires - from timber operations, spark arrestors on chain saws, etc.
- b. Accidental fires from recreation sites - hunting, fishing, hiking, and other outdoor activities where fires are utilized, as well as spark arrestors on ORVs.
- c. Arson - burning the forest for "fun."

4. Mining - claims to make forest housing for self/family - no minerals.

5. Vandalism:

- a. Recreation sites - shelters, campgrounds, tables, etc.
- b. Signs - highway and trail signs.

6. Game laws - poaching.

7. Marijuana - plantations scattered in Forest areas.

8. Timber related:

- a. Timber theft - unlawful cutting.
- b. Oral & sealed bid collusion.

9. Employee theft - Imprest or other cash funds, equipment, and supplies.

10. Cultural resources:

- a. Indian site disturbances - especially caves.
- b. Historic sites - carrying away materials/objects, metal detectors to locate items, digging for bottles, etc.

11. Protests and demonstrations:

- a. At the Supervisor's Office - starting in 1968 with Willamette NF over wilderness designation (French Pete) and continuing with roadless areas (usually peaceful).
- b. On the Ranger Districts - starting in the late 1970s with road blocking, tree spiking, tree sitting, sabotage of equipment and vehicles, etc.

12. "Normal" law enforcement:

- a. Nuisances - nude bathing at hot springs, illegal target shooting, concerts, campsite disruptions, loud music, parties, bonfires, survivalist training, Rainbow Family, etc.
- b. Traffic control - infractions & citations and abandoned vehicles, ORV use in unauthorized areas, etc.
- c. Misdemeanors - assaults, breaking into cars (at trailheads & campgrounds).
- d. Felonies - task force efforts with other agencies, murder, rape, armed robbery, etc.

FUTURE? - Many more people in the urban areas adjacent to the NFs. Increased tension over the allocation of resources from the NFs. Possible annual "licenses" or permits needed to enter, fish upon, or hunt within the boundaries of the NFs, which may require many road closures and gates for entry, as well as constant checking of people on the Forest roads and in the field. Perhaps the FS may be forced into the National Park Service mode, where field personnel are once again wearing sidearms for self protection.

1. Grazing - probably not a problem.

2. Occupancy - probably not a problem.

3. Forest fires:

- a. Accidental escaped fires - from timber operations, spark arrestors on chain saws, etc.
- b. Accidental fires from recreation sites - hunting, fishing, hiking, and other outdoor activities where fires are utilized, as well as spark arrestors on ORVs.
- c. Arson - burning the forest for "fun."

4. Mining - claims to make forest housing for self/family - no minerals.

5. Vandalism - of the recreation sites.

6. Game laws - poaching.

7. Drugs:

- a. Fewer marijuana plantations.
- b. Increasing number of drug labs ("meth") and dumps of chemicals.

8. Timber related:

- a. Timber theft - unlawful cutting.
- b. Oral & sealed bid collusion.

9. Employee theft - Imprest or other cash funds, equipment, and supplies.

10. Cultural resources:

- a. Indian site disturbances - especially caves.
- b. Historic sites - carrying away materials/objects, digging for bottles, etc.

11. Protests and demonstrations:

- a. At the Supervisor's Office - continuing (usually peaceful).
- b. On the Ranger Districts - continuing with road blocking, tree spiking, tree sitting, sabotage of equipment and vehicles, etc.
- c. Increasing resistance to any Federal activity by the Home Rule, Wise Use, or Sagebrush Rebellion types - some advocate use of violence, county ordinances, and other methods including physical confrontation as frustration grows.

12. "Normal" law enforcement:

- a. Nuisances - nude bathing at hot springs, illegal target shooting, concerts, campsite disruptions, loud music, parties, bonfires, survivalist training, Rainbow Family, etc.
- b. Traffic control - infractions & citations, abandoned vehicles, ORV use in unauthorized areas, etc.
- c. Misdemeanors - assaults, breaking into cars (at trailheads & campgrounds).
- d. Felonies - task force efforts with other agencies, murder, rape, armed robbery, etc.

13. Computers - more white collar crime, especially relating to computer viruses, data modification or theft, etc.

FOREST SERVICE LEADERSHIP: CREDIBILITY PROBLEMS FACING CURRENT AND FUTURE LEADERS

Gerald W. Williams, Ph.D.
Pacific Northwest Region
Portland, Oregon
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Leadership in the USDA Forest Service is facing a number of very serious credibility challenges. Most pronounced has been the increased involvement by the Federal courts, Congress, and other executive branch agencies. Demands have also been increasing from special interest groups and recently from the Forest Service employees. The press has been covering many of the controversies with giving more coverage to the critics of the agency than the defenders. The Forest Service, at all levels in the organization, needs to show strong leadership in the management of the national forests or further lose credibility.

LEADERSHIP CHALLENGE

The challenge, of course, is to address public concerns in order to gain credibility with the public in the management of the national forests. Without credibility, the Forest Service cannot operate effectively and the resources on the national forests will suffer. Regaining credibility should be the utmost concern for leaders in the Forest Service. Some of the special interest groups, and even some employees of the Forest Service, assume that the agency has lost so much credibility that it can never regain its former stature as the premiere conservation agency in the United States.

If the Forest Service cannot overcome (reestablish) credibility, there is a fear that the responsibility for managing the national forests will be taken over by another agency or worse that the national forests will be split, as in New Zealand, into parks and industrial forest areas. In the latter case, the only logical industrial forest areas would be in the Pacific Northwest, northern California, and portions of Idaho and perhaps Montana. Yet these are the very national forest areas which are currently causing the Forest Service the most controversy over their management.

FOREST SERVICE IS LOSING CREDIBILITY

At the beginning of the 1990s, the Forest Service is facing vigorous and prolonged attacks on its credibility of organization and its ability to manage the national forests. For the last two decades, the Forest Service has been trying unsuccessfully to stay ahead of controversies. Angry confrontations and voluminous litigations have marked the 20 years since the passage of the National Environmental Policy Act (NEPA) of 1969 and the National Forest Management Act of 1976 (NFMA).

During the last two decades, the Federal courts have been increasingly involved in the management of the national forests. Beginning with the court case on the Monongahela National Forest (NF) in West Virginia and expanding to the court decisions in RARE and RARE II, the Forest Service has not fared well in these major cases, especially in the public opinion arena. The most recent cases involve the infamous spotted owl in the Pacific Northwest and northern California. Repeated litigation by a variety of environmental groups have slowed and almost stopped the Forest Service from managing the national forests for timber production. Although the Forest Service has won in the courts in some cases, the general opinion is that the environmental groups have the upper hand in most all of the spotted owl/ancient forest legal cases. The timber industry and other special interest groups have argued in the courts to allow the Forest Service to continue with managing under the new forest plans, which allow extensive timber management, but to little avail.

Congress has always been involved with the management of the national forests, and since 1905, with the USDA Forest Service. In recent decades, the Congress has held numerous hearings on national

forest and Forest Service matters. Probably the most significant hearings and subsequent legislation involved the passage of NEPA in 1969, which had no significant opposition, requiring every Federal agency to involve and inform the public about the impacts of major Federal actions. The requisite environmental impacts statements (EIS) and environmental assessments (EA) have given the public ample opportunity to make their opinions and positions known to the agencies. Congress also held numerous hearings before passing the Forest and Rangelands Renewable Resources Planning Act (RPA) of 1974 and the National Forest Management Act (NFMA) of 1976 - which was an amendment to the RPA. Hearings for NFMA derived from the court decision against the Forest Service in the Monongahela NF case and controversy about clearcutting and terracing case on the Bitterroot NF in Montana. Recent examples of Congressional hearings have been held regarding the John Mumma resignation in Region 1 and the whistle blower hearings with testimony by retiree John McCormick. In these sensational cases, the Forest Service has been shown to be lacking in credibility or worse to be covering up instances of wrongdoing. Additionally, there are at least a half-dozen proposals in Congress to reform the Forest Service or changing the management of some resources to address specific problems, such as the spotted owl or ancient forest.

Also there has been an effort, conscious or not, by the executive branch to affect the management of the national forests. The most obvious has been the attempts to have political appointees in charge of the Forest Service. Thus far, every chief since Pinchot, have come up through the ranks. Each administration since Eisenhower's terms has appointed an assistant secretary under the Secretary of Agriculture to oversee the Forest Service. Probably the most effective was Rupert Cutler in the Carter administration. John Crowell in the Reagan administration proposed many changes to increase timber supplies from the national forests, but he was unable to change much while the NFMA planning process was underway. Other executive branch agencies - like the Environmental Protection Agency (EPA), the USDI Fish & Wildlife Service (F&WS), and recently the USDC National Marine Fisheries Service (NMFS) - have been increasingly involved in management of the national forests. The EPA has been very concerned about water quality, while the F&WS and NMFS are concerned about individual species through the Endangered Species Act of 1973. Much of the latter agencies attention has been focused on habitat management of the national forests where the species live or breed. Habitat management, rather than management of the number of animals or fish, has become the primary method of preserving the species.

Special interest groups critics range the spectrum from the conservative Mountain States Legal Foundation to the liberal Sierra Club, the litigation-prone Oregon Natural Resources Council to the militant Earth First!, and the professional Society of American Foresters to the vocal Oregon Lands Coalition. Poised around these special interest groups are many timber, in-holder, grazing, mining, ORV, trail, Native American tribes, salmon, rivers, hiking, bird watcher, and animal rights groups and associations who have become involved with the Forest Service on many occasions. Also, the recent Association of Forest Service Employees for Environmental Ethics has become increasingly concerned about the everyday management of the national forests (Williams 1991). Practically every one of these special interest groups and associations have been against the Forest Service.

The media coverage in recent years has been extraordinary. Thousands of articles, commentary, and letters to the editors have marked the ebb and flow of the national forest controversies. While the general bent of the newspaper reporting has been neutral, the editors and letters to them have tended to be supportive of the timber industry, yet the editorial cartoonists have been generally supportive of the environmental groups. Television coverage has been spotty as TV tends to focus on the outrageous comments and demonstrations that will flash upon the nightly news in 10-20 second "sound bites." General circulation magazines (such as *Newsweek*, *Time*, and *Atlantic Monthly*), which generally have longer time frames to study and write articles, have tended to print articles favorable to the environmental community. On the other hand, professional or special interest magazines or periodicals usually present one side of any discussion or controversy. One notable exception has been the American Forestry Association which has over the last several years tried to present a neutral position and encouraging widely variant opinions to be printed in the *American Forests* magazine. Regardless of which type of media the discussions about the Forest Service and the management of the national forests can be found in, the flow of the words, pictures, or images tend to portray an agency out-of-control.

INVOLVING THE PUBLIC - HOW WE GOT TO WHERE WE ARE TODAY

Involving the public in national forest management is required by NEPA and NFMA, but public involvement is often too late, hurried, and not taken as very serious except responses by other federal or state agencies. Yet, the Forest Service has to solicit and address - not necessarily resolve - issues and concerns from the public. There are many possible ways to do this and not all are effective.

First, the "tried and true" method assumes that the public is uninformed and all the Forest Service needs to do is educate the public to overcome credibility problems. This method is tied to the propositions that a) the public does not understand the Forest Service or the mission, b) the public is willing and ready to change, and c) once we get them the "true" story, the public will support our decisions. After years of trying this approach it appears just the opposite is true: The more we educate the public, the more they disagree with our conclusions and decisions as the special interest groups and even Forest Service employees are beginning to question our assumptions (data and methodology) of management.

Second, there is the assumption that since the Forest Service employees are trained professionals, especially foresters, the agency has all the knowledge and experience to effectively and efficiently manage the national forests. Leaders have often relied on this expertise and strong degree of self-worth to try to force controversial decisions on the public - what some may call risk taking. These leaders assume that the public should implicitly trust the agency, as all the expertise is available and consulted before decisions are made. Often, in the past decades, the Forest Service has been surprised that the public does not believe what the agency decision makers have said is scientific truth. To this day the Forest Service often regards its decisions as the best that science can provide, while the reality is that decisions reflect scientific data that is clouded by policy, politics, and social concerns. Forestry is the practice of political and social decision making regarding forest matters.

Third, there is a common assumption that pulling research into the decision making arena will make better decisions. Better and more up to date data will always be helpful to a decision maker, but often the Forest Service has very limited data and very unwilling to take chances based on one or two studies. This is especially true when new biological data may show that a species needs more protection than previously thought. In many instances, the decision maker will err on the side of development rather than no development (Hitt 1992). Part of this is based on the political reality of targets set by higher levels authorities. Another part is the unwillingness to take risks to protect the environment when the Forest Service reward system is based on development of the resources. Few decision makers think about or act on no development (no action) as a saving for the future - where decisions can still be made at a later time.

Fourth, since the public is often at odds with the agency, many Forest Service decision makers believe contacts should be limited to the formal procedures outlined by the Freedom of Information Act so that future appeals and lawsuits will be defensible. This position, while advocated by the Office of General Council (OGC) attorneys, tends to create a situation that makes the public the enemy. Friendly conversations are almost forbidden as the legal consequences are always suspected. Public participation often occurs at the "scoping" of issues phase of planning, again at the alternative development phase, and the draft EIS phase. Typically, public responses are requested in writing only through letters from the decision maker or when an open house is offered, but very few people write back or ever attend these sessions (Gericke, Sullivan, and Wellman 1992). Formal surveys and questionnaires are almost impossible due to restrictions imposed by the Office of Management and Budget. This tends to leave the decision makers with very few options other than formal letters - which some groups like Native American tribes think are insulting - and relying on massive postcard, letter, and petition response forms from the special interest groups. Only a few innovative leaders have been spending time and energy in using small groups discussions or making local contacts in their communities beyond the Chambers of Commerce and local interest group leaders (Lowenstein 1992).

Lastly, several years ago there was a move by the Forest Service to use consensus groups to resolve potential conflicts. A number of these groups were used effectively to resolve issues, but some were failures as several of the major parties refused to participate in the groups. Thus any decision that was made by a consensus group could be blasted by those individuals or groups that were not present at the meetings. Although many believe that the legal system in many situations has been a hindrance to everyday management of the national forests, others believe that the courts will help the Forest Service by upholding controversial decisions. Often the OGC attorneys will recommend that EISs be used for project development rather than EAs as the EISs have a better track record in the courts. While that is true, it also can make a mockery of the legal system as almost every court decision is appealed to the higher courts, and perhaps may end up in the Supreme Court. This can be a very lengthy and expensive process - sometimes as long as a decade to resolve - for both the Forest Service and the other parties involved. There is also a growing feeling that dispute resolution may resolve issues between the Forest Service and the interested parties in an appeal or in litigation without having to wait for years before final settlement. Evidence is beginning to mount that dispute resolution or negotiated settlements may indeed offer better and quicker solutions.

LEADERSHIP OPPORTUNITIES

Probably the best opportunity for the Forest Service to regain credibility is to welcome and fully participate in any Congressional investigations that may arise out of the recent high level resignations and whistle blowing cases. Another way is to act decisively and quickly when problems arise. Evaluating all opportunities to address or resolve controversies should be of paramount importance. Also, the agency needs to be more involved in its dealings with the public through the NEPA planning process. And, finally, admitting mistakes and acting on new direction is of great urgency in times when the Forest Service management is being severely questioned.

Suggestions to help rebuild the agency credibility are numerous, but only a few will be mentioned (many of which sound like the old Forest Service during the custodial/protective era prior to World War II):

- 1) Directly involve special interest groups in all phases of project development.
- 2) Create citizen and Forest Service teams ("commissions") to consider alternative ways of managing the national forests.
- 3) Listen, really listen, to individuals and special interest groups and what they propose.
- 4) Err on the side of conservation, not development.
- 5) Change the reward system to caring for the land, not meeting targets.
- 6) Embrace the concepts of new forestry and new perspectives then implement them.
- 7) Show the public and the press what the Forest Service is doing or doing differently.
- 8) When the Forest Service makes a mistake, admit it.
- 9) Rely on personal contacts for information.
- 10) Be a leader/volunteer in local groups.
- 11) Involve and encourage the employees and really listen to their suggestions.

SUMMARY

Obviously, there is no magic solution which will transform the Forest Service from the perception of an out of control agency to one that is greatly revered by the public as a great leader in forestry and conservation matters. Even if it were possible, the likelihood of this ever happening is very remote. There are, however, many ways in which the agency can help to dispel its growing negative image. Perhaps the simplest - and most time consuming - is to more fully involve the public in all phases of Forest Service and national forest management and decision making.

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ON THE DUTY OF GOVERNMENTS IN THE PRESERVATION OF FORESTS

Dr. Franklin Benjamin Hough

of Lowville, N.Y.

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Reprinted in the *House Report 259*, 43rd Congress, 1st Session, pages 81-88 and

Frank E. Smith (ed.) *Conservation in the United States: A Documentary History*,
Land and Water 1492-1900 (1971): 686-694. The following is the Smith footnoted version.

The presence of stately ruins in solitary deserts, is conclusive proof that great climatic changes have taken place within the period of human history in many eastern countries, once highly cultivated and densely peopled, but now arid wastes.

Although the records of geology teach that great vicissitudes of climate, from the torrid and humid conditions of the coal period, to those of extreme cold which produced the glaciers of the drift, may have in turn occurred in the same region, we have no reason to believe that any material changes have been brought about, by astronomical or other natural causes, within the historic period. We cannot account for the changes that have occurred since these sunburnt and sterile plains, where these traces of man's first civilization are found, were clothed with a luxuriant vegetation, except by ascribing them to the improvident acts of man, in destroying the trees and plants which once clothed the surface, and sheltered it from the sun and the winds. As this shelter was removed the desert approached, gaining new power as its area increased, until it crept over vast regions once populous and fertile, and left only the ruins of former magnificence.

In more temperate climates the effect is less striking, yet it is sufficiently apparent everywhere and throughout our whole country, but especially in the hilly and once wooded regions of the Eastern and Northern states. In these portions of our Union the failure of springs and wells, the drying up of brooks which once supplied ample hydraulic power through the summer, and the increasing difficulties of procuring water to supply canals for navigation, and wholesome water for cities, are becoming every day something more than a subject of casual remark. It is destined to become a theme of careful scientific and practical inquiry, to ascertain how these growing evils may be checked, and whether the lost advantages may be regained.

SOURCES OF RAIN

We regard the ocean itself as the source whence the moisture precipitated in rains is mainly derived. Its area changes not; the exposure to solar heat is uniform, unless, as some suppose, the spots on the sun's disk may have an appreciable influence; and, except as varied within fixed limits by the inclination of the earth's axis in its revolution around the sun, there are no astronomical or other causes that should sensibly change the annual amount of general evaporation from the surface of the ocean from year to year or from age to age. The vapors raised from the sea are distributed by the winds over the land, and descend as rains where mountains ranges, forests, and other causes favor condensation. It is probable that the Gulf of Mexico furnishes more vapor for rain within the United States than the Atlantic Ocean, its influence being felt throughout and beyond the great basin of the Mississippi and its tributaries.

NO PERCEPTIBLE CHANGES IN TOTAL ANNUAL RAIN-FALL

In a work which I recently prepared for the Regents of the University of the state of New York, I was able to collect, from all sources and for various periods, in some stations for almost half a century, about two thousand years of rainfall records within the State of New York,^{1,2} and in a volume published within the last year by the Smithsonian Institution, there is a much more extended series for the whole country. These extensive series are not enough to determine, with any claim to accuracy, the secular changes, if any, that may be going on in the amount of precipitation of rain and snow. Although they reveal great irregularities in a series of years at any given locality, they do not justify us in supposing that, in the general average of periods, the amount is sensibly increasing or diminishing, although they do show, in some cases, greater tendencies to drought for a series of years together, and often a more unequal distribution of rain throughout the year.

FLOODS AND DROUGHTS

This growing tendency to floods and droughts can be directly ascribed to the clearing up of woodlands, by which the rains quickly find their way into the streams, often swelling them into destructive floods instead of sinking into the earth to re-appear as springs. Aside from the direct effects of shelter and shade afforded by trees, the evaporation of raindrops that fall upon the leaves, and the chemical action of the leaves themselves, have a marked influence upon the humidity and temperature of the air beneath and around them. The contrast, in a very dry season, between an open and sunburnt pasture, and one interspersed with clumps of trees, must have been noticed by every careful observer, and the actual relative profits of farms entirely without trees, and those liberally shaded (everything else being equal), will show, at least in grazing districts, the advantage of the latter in the value of their annual products. The fact that furniture in houses too much shaded will mould, is a familiar and suggestive instance of the humid influence of trees, and the aggregate results of woodland shade may well explain the fullness of streams and springs in the forest, which dry up disappear when it is removed.

ECONOMICAL USES OF TIMBER

The economical value of timber, and our absolute dependence upon it for innumerable uses in manufactures and the arts, the rapidly increasing demand for it in railroad construction and the positive necessity for its use in the affairs of common life, even were its use as fuel largely supplanted by the introduction of mineral coal, are too obvious for suggestion. It is this necessity, rather than considerations of climate or of water supply that has led in several countries of Europe to systems of management and regulation of national forests, as a measure of governmental policy and public economy. Such systems have been devised to a greater or less extent, in Russia, Turkey, Austria, Germany, Italy, France, Denmark, and Sweden; and more recently in British India. The extent of state forests in France, is about 3,130,000 acres; to which may be added 5,335,000 acres belonging to communes, corporation, hospitals, and other public establishments, making the whole extent of forest under the management of the forest administration, 8,465,000 acres, or about 13,226 square miles. They are distributed widely over the country, a large proportion being in the departments of the east. Legislation in France having in view the preservation of forests, chiefly dates from the ordinance of 1669, which fixed a certain time for the cutting of forests belonging to the state. A clause was inserted by the statesman Colbert, "that in all the forests of the state,

¹ Results of a series of meteorological observations made in obedience to instructions from Regents of the University of the State of New York, from 1826 to 1850, inclusive. Albany: 1855, 4to., pp. 502. Second series of the above, embracing observations from 1850 to 1863, with records of rain-fall and other phenomena to 1871, inclusive. Albany: 1872, 4to., pp. 406.

² Tables and results of the precipitation in rain and snow, in the United States, and at some stations in the adjacent parts of North America, and in Central and South America. Collected by the Smithsonian Institution, and discussed under direction of Joseph Henry, secretary. By Charles A. Schott. Washington: 1872, 4to., pp. 176, with charts. Smithsonian Contributions to Knowledge, vol. XVIII, article 2.

oaks should not be felled unless ripe, that is, unable to prosper another thirty years." The present French Forest Code was established in 1827. It intrusts the care of public forests to the Ministry of Finance, under a Director General, assisted by two administrations; one charged with the management of forests, and the sale of their products, and the other with the police of the forests, and the enforcement of forest laws. In the departments there are thirty-two Conservators, each in charge of one or more departments, according to the extent of forests in each. The immediate supervision is intrusted to Inspectors, who are assisted by sub-inspectors and *Gardes Generaux*, who live near, and personally superintend the work of the forests guards. The latter live in the forests, and acts as police over a certain range. They personally observe the operations, and report all infractions of the laws. No timber is cut till marked, and most of the saw-mills are owned by the government, and rented to the wood-merchants. The system has been extended to Algeria, where several rainy days have been added to July and August, by forest culture.

EUROPEAN SYSTEMS OF MANAGEMENT NOT APPLICABLE WITH US

These details might be extended, but they would not have practical application with us, because our States, as a general rule, own no large forests, and we have no strong central organizations or means of enforcing the stringent regulations which make their system a success. The title to the lands in our older States (where the evils resulting from the loss of forests are liable to be first and most severely felt,) has already passed into the hands of individuals, and from the theory of our system of government, the power that must regulate and remedy these evils must begin with the people, and not emanate from a central source. With us there are no great estates, entailed upon future generations, to keep together, and promising a reasonable hope of reward to the family for a heavy investment in their improvement. Nor is there even a reasonable prospect that the landed estate of a wealthy citizen will pass unimpaired and undivided beyond one generation of his descendants. It should also be remembered that, from the peculiar nature of forest-culture, one generation must plant for another to reap, as the age of a full-grown tree in some species much exceeds that of a human life. The investment for land, planting, and protection, must be carried with interest into another century, and for the benefit of a generation unborn.

AMERICAN VIEWS AS TO REMEDIES

These considerations present a problem difficult it may be of solution, but I have confidence in the ability of our American people to work out a practical system adapted to our social organization and our general theory of laws. We must begin at the center of power, and that center is the circumference. We must make the people themselves familiar with the facts and the necessities of the case. It must come to be understood that a tree or a forest planted is an investment of capital, increasing annually in value as it grows, like money at interest, and worth at any time what it has cost, including the expense of planting and the interest which this money would have earned at the given date. The great masses of our rural population and land-owners should be inspired with correct ideas as to the importance of planting and preserving trees, and taught the profits that may be derived from planting waste spots with timber, where nothing else would grow to advantage. They should learn the increased value of farms which have the roadsides lined with avenues of trees, and should understand the worth of the shelter which belts of timber afford to fields, and the general increase of wealth and beauty which the country would realize from the united and well-directed efforts of the owners of land in thus enriching and beautifying their estates.

ENCOURAGEMENT, HOW TO BE EXTENDED

In this great work of popular education, agricultural societies and kindred associations may do much, by promoting a spirit of emulation, and offering premiums for the most effectual results. In a recent premium list of the Highland and Agricultural Society of Scotland, I notice *fourteen* prizes offered, amounting to one hundred sovereigns, in medals and coin, for approved reports upon the subject of tree-culture in its various relations. They have also established a system of examinations, by competent professors of their universities, at which young men may appear and receive certificates of attainment, according to degree,

which can scarcely fail to find for them profitable employment by the owners of forest estates. They afford a strong incentive to high ambition, and a conspicuous opportunity for those who seek distinction in a lucrative and honorable employment.

SCHOOLS OF FORESTRY

The necessities of European governments have led to the establishment of schools of forestry, for instruction in the sciences that find application in the growth, preservation, and removal of timber, in which an eminently practical system of education is adopted, and the precepts of the class-room directly applied in the operations of the forest. About a dozen such schools exist in Belgium, Denmark, France, Germany, and Switzerland.³ The necessity for special education in this department is sure to arise in our own country, in which perhaps fewer persons will find a special profession in forestry, but a greater number will feel the want of practical instruction in the principles upon which success depends.

GOLDEN OPPORTUNITY

Our educators would act wisely in taking this into consideration, in devising plans for new institutions, or revising plans of existing ones, and perhaps some far-seeing and enlightened benefactor, of sufficient means, may find in this direction the opportunity of rendering his name familiar in the annals of fame, by establishing a school of forestry, in its most comprehensive sense, for the systematic training of educators and practical engineers, in this inviting field of enterprise, and fully adapted to our American wants and ideas upon this subject.

LAWS NEEDED—METHODS SUGGESTED

However much the public may favor, there will still arise the need of laws to regulate, promote, and protect the growth of wood; as we find laws necessary in the management of roads and bridges, or of any other great object of public utility. Let us consider some of the measures which a State might adopt for the promotion of this end, without interfering with personal rights, or stepping beyond the line which limits its duty in protecting the rights of its citizens.

1. By withholding from sale such wild and broken lands as might be returned from time to time for non-payment of taxes, when found chiefly or only valuable from the growth of timber, and by establishing laws for its protection, and for realizing to the state or to the county, whatever profits there might arise from the thinning out of timber, so as to preserve the tract as a forest. In this connection I would remark, that a more effectual vigilance would probably be secured, if the benefits belonged to the local administration of the place, as party jealousies and private interests would tend to keep officials under close surveillance, where a State officer, residing at a distance, and not personally known in the locality, would often find his authority ignored, and the public interests in his charge invaded. There should, however, be required an annual report to a State officer, clothed with ample power to enforce a rigid compliance with the laws upon the subject of forests.

2. By exempting from taxation for a limited time, and by offering bounties, for lands planted and enclosed for the growth of forest trees.

3. By offering bounties to counties, towns, and individuals, for the greatest number of trees planted in a year, and made to live through the second season.

4. By requiring railroad, turnpike and other road companies, where valid reasons to the contrary do not exist, to plant the sides of their roads with trees, or empowering town authorities, in case of neglect, to do this at their expense.

³ Including private institutions and schools in which forestry is taught with other sciences, the number is much greater. In mentioning the number stated, we had reference to schools strictly under government management, as forest schools.

5. By imposing a tree-tax, payable in the planting of trees, or a fixed sum for each tree, to be expended only in planting trees. In cities and villages this commutation might be applied under local officers to the improvement of parks or other objects of public utility and ornament.⁴

6. By protecting trees on the way-side, and in public places, as well as on private grounds, from wanton destruction, by adequate penalties, sufficient to restore the loss and pay the injury.

7. By requiring the elements of science applicable to forest-culture to be taught in the public schools, and by encouraging it in academies and colleges. This, in the higher grades of schools, would embrace the most approved methods of cultivation, the influences of soil and climate, and the various mathematical, mechanical, physiological and chemical principles involved in the subject. Special schools under national or state patronage might ultimately be founded.

TREE-PLANTING ON THE PRAIRIES

Congress has recently taken action tending to encourage the planting of forests in the Territories, where most needed, but might do much more in promoting this great measure of public utility. A few of the States have also done something intended to advance the same object, but without uniformity, and as yet with but very limited result.

RESERVOIRS

With respect to the failure of water supply for hydraulic power, navigation, or city use, until woodland shade can be restored to the sources, we must depend upon *reservoirs*, to retain the surplus floods of winter for summer wants. There are few streams or rivers in the country, where these might not be made to advantage, and in some cases greatly to the improvement of the natural capacity of these streams as they were first known. In the construction and maintenance of these reservoirs for navigable canals or for cities, they should obviously be under the same control as these works themselves, of which they are the essential part. But where needed for hydraulic power only, they could best be intrusted to the management of those who have an interest in them, and Government should only provide, by general laws, for the organization and regulation of companies with the corporate powers necessary for their object. As in other cases where pecuniary values are involved, the vote or power of each owner should be in just proportion to his interest,

⁴ A tree-tax is provided by an act passed by the legislature of Nebraska, which took effect March 1, 1871. It is as follows;

An Act to provide for the planting of shade-trees in towns, cities, and villages.

SECTION 1. Be it enacted, &c., That the corporate authorities of the State of Nebraska shall cause shade-trees to be planted along the streets thereof.

SEC. 2. For the above purpose a tax on not less than one dollar nor more than five dollars in addition to all other taxes shall be levied upon each lot adjacent to which trees are to be planted as aforesaid, and collected as other taxes.

SEC. 3. Trees shall be annually planted, when practicable, on each side of one-fourth of the streets in each city and village in the State of Nebraska, until all shall have shade-trees along them not more than twenty feet apart.

SEC. 4. The corporate authorities aforesaid shall provide by ordinance the distance from the side of the street that trees shall be planted, and the size thereof:

SEC. 5. Provided the owner of any lot or lots may plant trees adjacent thereto where ordered as above in the manner and of size prescribed; and on making proof thereof by affidavit to the collector, said affidavit shall exempt the owner from the payment of the aforesaid tax.

SEC. 6. Any person who shall materially injure or shall destroy the shade tree or trees of another, or permit his animals to injure or destroy them, shall be liable to a fine of not less than five dollars for each tree thus injured or destroyed, which fine shall be collected on complaint of any person or persons before any court of proper jurisdiction. One-half of all fines thus collected shall be paid to the owner of the trees injured or destroyed; the other half shall be paid into the school-fund.

SEC. 7. That this act shall not apply to any person that is occupant of any business lot without his consent.

SEC. 8. This act shall take effect and be in force from and after its passage.

with the right of appointing a proxy to represent it when desired. Under suitable regulations of law, such associations could scarcely be perverted from their proper object. There may be cases in which a State would be justified in making reservoirs to improve the hydraulic power of rivers, thus securing solidity of construction, and amplitude of size; and often such improvements might be made before any capital had been invested along the line, or where its amount was too feeble to warrant the expenditure; but the expense should ultimately be taxed upon the interests concerned, and the management should be given up to these interests, as soon as it can safely be done.

ADIRONDACK WILDERNESS OF NEW YORK

In the State of New York, measures have been begun for the preservation of forests, which I may briefly notice. An extensive region north of the Mohawk River and west of Lake Champlain, embracing over two million of acres of land, the Adirondack Mountains, and the sources of the Hudson and other rivers, lies an unbroken wilderness. More than a hundred years have passed since settlements were formed on its southern and eastern borders, and more than seventy since it has been entirely surrounded by a belt of improvement embracing some of the best farming lands of the State. Although a scheme of speculation was far advanced before the close of the colonial period, for the settlement of this region, and great sums have since been wasted by capitalists in attempting to develop its agricultural resources, these efforts have uniformly resulted in failure; and, excepting in a few favored spots, the region is still as wild and picturesque as when it was known only as the hunting-ground of the native Indian. This uniform failure may be justly ascribed to the scanty, sterile soil which covers the surface where the surface is not the naked rock, and to the cold and forbidding character of the climate, due to great elevation and the influences of mountain-ranges. Corn and the cultivated fruits would seldom ripen, from the frosts that may happen at any time in the summer, and only hay, oats and potatoes can be grown to advantage where the soil and exposure favor. Yet it is for the most part covered with timber, often of the finest quality, and it is supposed to abound in magnetic iron ores, of which mines are wrought with great profit near the eastern border.

Some twenty years ago, some railroad speculators secured from the State a grant of a quarter of a million of acres, at five cents an acre, yet failed to build the road, or to confer the advantages promised; and since this period almost the whole of the lands in this region have passed into the hands of lumbermen and tanners, leaving at present only about forty thousand acres in the seven counties wholly or partly included in the wilderness. Most of these lands have been repeatedly returned and sold for the non payment of taxes, and if no more tax-sales are held, a large portion will doubtless in a very few years again revert to the State. Through this wilderness lines of navigation extend through lakes and along rivers, with slight portages, entirely across from the Moose and Beaver Rivers on the west, to the Saranac and Racket Rivers of the northeast. For many years it has been the favorite haunt of parties of sportsmen and those seeking relaxation from the cares of business, by a few weeks' residence in summer, among the wild, picturesque scenery and healthful climate of this region. Hotels for summer residence have been built upon the banks of lakes in various places in the interior, and many guides find employment in conducting parties along these rivers and lakes, and in furnishing the supplies and assistance they may need. Roads and telegraphs have been constructed to navigable points in the interior, and every year adds to the number of visitors to this great solitude of woods and waters.

COMMISSION OF STATE PARKS

In 1872, the legislature of New York passed an act creating a commission of State parks, and appointing certain persons therein named to examine and report upon the expediency of vesting in the State, the title to the wild and timbered regions lying within Lewis, Essex, Clinton, Franklin, St. Lawrence, Herkimer, and Hamilton counties, and to recommend such measures as might be deemed proper relative thereto. The commission was to continue two years, and there is a probability that it will be made permanent. Already, at its suggestion, the sale of lands for non-payment of taxes has been ordered to be discontinued, and thus the first step taken towards the accomplishment of its object. The commission will recommend no inclosed grounds, no salaried keepers, and no attempt whatever at ornamentation. There should be stringent laws

and adequate penalties against spoliation of timber, or destruction from careless fires; and means of access from various places on lines of thoroughfare should be provided and maintained. In some cases short canals, with locks for passing boats might save the labor of a difficult portage, but beyond these there is scarcely more needed for the present.

WATER-SUPPLY TO CITIES

There are, however, important questions involving the supply of water for the State canals, the preservation or restoration of hydraulic power on the rivers, and possibly the future supply of New York City, and the cities and towns along the Hudson with pure water, by an ample aqueduct from the crystal fountains of the Hudson, which may be properly considered; and a fit opportunity is given for presenting, in its strongest light, the importance of protecting forests, and of promoting the growth of trees, on account of their influence upon climate and upon the general welfare of the State.

NATIONAL IMPORTANCE OF THE SUBJECT

These questions are not limited to a particular state, but interest the nation generally, and I would venture to suggest that this association might properly take measures for bringing to the notice of our several State governments, and Congress with respect to the Territories, the subject of protection to forests, and their cultivation, regulation, and encouragement; and that it appoint a special committee to memorialize these several legislative bodies upon this subject, and to urge its importance.

A measure of public utility thus commended to their notice by this association would doubtless receive respectful attention. Its reasons would be brought up for discussion, and the probabilities of the future, drawn the history of the past, might be presented before the public in their true light. Such a memorial should embrace the draught of a bill, as the form of a law, which should be carefully considered in its various aspects of public interests and private rights, and as best adapted to secure the benefits desired.

Note: After Hough read this speech before the American Association for the Advancement of Science (AAAS), then the following day passed a resolution to memorialize (petition) Congress on the necessity of the federal government to fund a federal agent to report to Congress on the state of the nation's forests. The AAAS appointed a nine-member committee, which was headed by Hough. Hough and his friend George B. Emerson roughed out the petition and by February of 1874, they arrived in Washington to gather additional support and personally discuss the memorial with President Ulysses S. Grant, who in turn sent it to Congress. In part, the memorial discussed forest preservation and growth to be of "great practical importance" to the nation, and that timber shortages were inevitable in the near future, and that Congress should pass a law to create "a commission of forestry," appointed by the president and the Senate to study and report on the state of the nation's forests. Over two years later, on August 15, 1876, Congress appropriated \$2,000 which was to be used to "appoint a man of approved attainments" to study and report on forest supplies, harvesting, imports and exports, uses, and growing conditions, as well as conditions in other countries. Hough was appointed as the first federal forestry agent. He was assigned to the Commissioner of Agriculture. Within a year, he compiled a 650-page book titled *Report Upon Forestry 1877*. Congress was so impressed with this massive work, that 25,000 copies were ordered printed in 1878. Hough remained at this work until 1883 (producing two more reports), when he was replaced by Nathaniel H. Egleston.