Conservation of Natural Resources

National Survey of Historic Sites and Buildings
The National Survey of Historic Sites and Buildings

Theme XIX

CONSERVATION OF NATURAL RESOURCES

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United States Department of the Interior
Stewart L. Udall, Secretary

National Park Service
Conrad L. Wirth, Director
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Cover Design

By

Mr. Edward G. Chidlaw
Bureau of Outdoor Recreation, San Francisco
The National Survey of Historic Sites and Buildings is a resumption of the Historic Sites Survey begun in 1937, under the authority of the Historic Sites Act of 1935. During World War II, and the emergency following, it was necessary to suspend these studies. The Survey has now been resumed as part of the National Park Service MISSION 66 Program.

The purpose of the Survey, as outlined in the Historic Sites Act, is to "make a survey of historic and archeologic sites, buildings, and objects for the purpose of determining which possess exceptional value as commemorating or illustrating the history of the United States." In carrying out this basic directive, each site and building considered in the Survey is evaluated in terms of the Criteria for Classification, which are listed in the appendix of this report.

When completed the Survey will make recommendations to the Director of the National Park Service and the Secretary of the Interior as to the sites of "exceptional value." This will assist the National Park Service in preparing the National Recreation Plan, including sites which may be administered by the National Park Service to fill in gaps in the historical and archeological representation within the National Park System. It will also recommend and encourage programs of historical and archeological preservation being carried out by state and local agencies.
This study is a joint product. Historian Charles W. Snell, Western Region, San Francisco, wrote the historical narrative and coordinated the theme study. Historians Ray H. Mattison, Midwest Region, Omaha; William Brown, Southwest Region, Santa Fe; Horace J. Sheely, Jr., Southeast Region, Richmond; and S. Sydney Bradford, Northeast Region, Philadelphia; contributed the material on the individual sites in their respective regions that appears in this study.

After completion, the study was presented to the Consulting Committee for the National Survey of Historic Sites and Buildings. The Committee consists of Dr. Waldo G. Leland, Director of the American Council of Learned Societies; Dr. S. K. Stevens, Executive Director of the Pennsylvania Historical and Museum Commission; Dr. Louis B. Wright, Director Folger-Shakespearean Library; Mr. Earl H. Read, Chairman Emeritus American Institute of Architects; Dr. Richard H. Howland, Head Curator, Civil History, Smithsonian Institution; Mr. Eric Gugler, Member Board of Directors, American Scenic and Historical Preservation Society; Dr. J. O. Brew, Peabody Museum of Archeology, Harvard University; Mr. Frederick Johnson, Curator Robert S. Peabody Foundation for American Archeology, Phillips Academy; Mr. Robert R. Garvey, Jr., Executive Director of the National Trust for Historic Preservation; and Dr. Ralph H. Gabriel, Sterling Professor of History Emeritus, Yale University, and Professor of American Studies, American University.
The overall Survey, as well as the theme study which follows, is under the general direction of John O. Littleton, Chief, National Survey of Historic Sites and Buildings, who works under the general supervision of Herbert E. Kahler, Chief, Division of History and Archeology, of the National Park Service.

Conrad L. Wirth
Director
Chapter I - Introduction

1. The Public Domain, 1785-1863

With the exception of the original 13 colonies, most of Kentucky and Tennessee, and all of Texas, the land that now comprises the conterminous United States, was at one time owned by the United States Government. This vast body of federally owned land, known as the public domain and amounting to some 1,442,200,320 acres, was long regarded as a virtually unlimited reservoir of national wealth that would last for generations and that could also be freely utilized to improve the nation. Under various land acts passed by Congress the public domain was at first sold and, then, after the Homestead Act of 1862, granted to settlers in accordance with a public policy whose main objective was to get this federally owned land into private ownership as rapidly as possible. This policy was based in part on political expediency: people on the land, actual farmers and settlers, served as a real bulwark against Indians and the designs of European powers. Second, unimproved land of the public domain was regarded as an asset that could be utilized to finance desperately needed internal improvements on this newly settled continent. Millions of acres of public land were therefore granted either to states or canal and railroad companies for the construction of canals, roads, and railroads, and also for educational purposes: the support of public schools, colleges, and universities.

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1See Appendix I, page for the method acquisition and the extent of Territory and Public Domain, 1781-1945.

2For the approximate disposition of the original Public Domain, 1781-1923, see Appendix II, page .
The policies of the state governments and other recipients of the public land grants were practically identical with those of the federal government. They also disposed of the granted land as rapidly as possible, and under the most liberal terms, in order to attract settlers and to raise funds for the construction of internal improvements in their lightly settled districts. Neither the federal nor state governments had any general policy providing for the use or protection of the public domain. Under the economic and political philosophy of that era, this was not regarded as the proper role of government, and such development was left almost entirely in the hands of the individual.¹

2. Federal Laws relating to Forest and Mineral Lands of the Public Domain, 1785-1863

Between 1785 and 1863, the humid states located to the east of the Mississippi River were the chief areas of the continent that were undergoing settlement. Practically all land, both private and public, in this region was esteemed primarily for agricultural purposes. Mining, even by 1863, was still largely limited to sections of northern Michigan, southwestern Wisconsin, Missouri, California, Nevada, Idaho, and Colorado. In relation to agriculture, mining was yet a small and unimportant part of the national economy. The semiarid pastoral lands of the trans-Mississippi West had also as yet scarcely come within the sphere of settlement. The result of this situation was that federal land laws in 1863 still dealt with the public domain as if it were comprised entirely of agricultural land,

¹Benjamin H. Hibbard, History of the Public Land Policies (New York, 1924), 7-55, 139-143.
and this legislation failed to provide for classification of land into forest, mineral, and pastoral land categories.

Federal legislation regarding mining and forest lands in the public domain, prior to 1863, was therefore extremely limited and largely ineffective. On May 20, 1785, Congress had passed "an ordinance for ascertaining the mode of disposing of lands in the Western territory." This first land ordinance included specifications for certain minimum degrees of land classification, that of the separation of mineral from agricultural land, by providing that there should be reserved "one-third of all the gold, silver, lead, and copper mines to be sold or otherwise disposed of as Congress shall hereafter direct." Later laws, passed in 1800, 1807, and 1816, made more or less specific provision for the further separation of mineral from agricultural land. In 1807 a leasing system for lead mines located on public lands was also devised. The intention of these early laws was to derive more revenue from the more valuable lands and to keep these funds available for social use.

However, in a series of acts passed in 1846, 1847, and 1850, Congress ordered that mineral lands in Illinois, Arkansas, Wisconsin, Iowa, and Michigan should be sold at public sale in the same manner as other public land, and with the same right of pre-emption. In other words, the distinction between mineral lands and non-mineral lands in those states was wiped out. By these laws Congress surrendered the rights of the people to the great deposits of lead, iron, and copper that were situated in these states, and not until 1866 did Congress pass the first general law pertaining to the
acquisition of mineral lands located in the Far West.¹

The act of March 1, 1817, was the first law passed by Congress that was in any manner designed to preserve public timber against depredation. This law protected the live oak and red cedar forests—then so valuable for the building of ships for the Navy—on public land situated in the Atlantic and Gulf Coast states, particularly on Santa Rosa Island, Florida. But it was not until the act of March 2, 1831, that Congress passed the first law that specifically made provision against general timber depredation on public lands. Under this act the guardianship of public timber was made the responsibility of a system of timber agencies established under the supervision of the Solicitor of the Treasury. In 1855 the duties of the timber agents were placed on the registers and receivers of the district land offices of the General Land Office of the United States Department of the Interior, without, however, giving any increased recompense for these additional duties. The land officers were instructed to seize and sell stolen timber, deposit the proceeds in the United States Treasury, and to report the cases to the proper United States District Attorneys for prosecution. The inadequate administrative provisions authorized by Congress for enforcing these acts made the laws practically ineffective.

Until 1878 there were no federal laws applicable to the sale of public non-agricultural timber land. Timber lands could only be acquired under the terms of the pre-emption and homestead laws as agricultural land, or purchased with the military or agricultural

When the New World was settled in the 16th century, the colonists dispensed with the game and forest laws of their European homelands. Regarding the great unexplored continent as an inexhaustible reservoir of wealth, they generally practiced careless destruction in the interest of realizing a quick profit. During early colonial times, tobacco growers in the Virginia Piedmont noticed the discoloration of their rivers. In 1817 Thomas Jefferson reported that "new fields were no sooner cleared than washed away," and before the Civil War other soil scientists commented upon the pioneer farmers' habit of "mining the soil"; this included single crop farming without systematic rotation of crops or manuring— and, after skimming the profit off their virgin land, their custom of moving on to new lands to the West.

Arriving in the Ohio Valley, the settlers here proceeded to burn millions of acres of virgin hardwood to make way for their new fields. The forests east of the Mississippi were still so extensive as to appear inexhaustible and were regarded by the settlers as a serious obstacle to the proper (agricultural) utilization of their land. The local industrial uses for timber were so few, transportation so poor, markets for lumber so distant, and prices so low, that the local value of timber was almost nothing.

In the Old South the story was much the same; persistent cotton growing wore out and washed away the soil of the Atlantic coast states.

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until the bigger plantations were forced to move to the new lands located along the Mississippi River.

In the Far West mining also helped to ruin both the soil and forests at an early date. So much mine tailings were washed down the Sacramento River after the discovery of gold in 1849, that it filled the inlets of San Francisco Bay. Dredges converted hundreds of square miles of rich California river-bottom land into gigantic gravel piles; and powerful hydraulic jets washed down entire hillsides, obliterating fertile orchard lands in the Sacramento Valley. The hungry smelters of Virginia City, Nevada, and Leadville, Colorado, devoured entire forests to provide charcoal, and timber in large amounts was used to shore up miles of mine tunnels.¹

As Lewis Mumford has aptly remarked: "The same story was written everywhere: the destruction of the forest, the depletion of the soil, the extirpation of wild life, the upsetting of the natural balance of organisms. It was in vain that the American proclaimed to the heavens that he loved his rocks and rills, his woods and templed hills: his actions were a derisive commentary on these pious words. Land-hunger is one thing," Mumford noted, "and love of the soil is another."²


With the increasing use of coal and iron and the rapid spread of railroad transportation in the 1850's, the whole picture changed swiftly, and not for the better. Quick profit-taking and industrialization (use of the machine) spread ever more widely in the United States and at an ever increasing tempo. Improved transportation led to continually expanding markets, and the increased use of machines permitted an evermore rapid rate of production for the growing markets, and these, in turn, led to ever greater opportunities for profit-taking. This "progress" was accompanied by a parallel increase in the extent and rate of destruction of natural resources. The 1850's also saw the growth of the great industrial slums in the cities of the North, where women and children labored in frightful conditions 12 or 14 hours a day for six days a week at a recompense of one or two dollars a week. This Northern "mining of humanity" was matched by the increased severity of Negro slavery in the South. Both harsh labor systems were made possible by the increasing utilization of machines, and each was justified in the name of profit and progress.

By mid century, then, the landscape, rural and urban, of the United States began to deteriorate at an ever-increasing rate as machines expanded both the constructive and destructive capabilities of man. As Mumford has put it, "Rivers filled with refuse, inimical to fish and vegetation, flowed past cities covered with soot . . . . Mountain sides, first denuded of trees, lost their soil to local torrents of spring that captured the run-off of the winter snows, now no longer retained and slowly seeping into the soil. Blight
"and waste came in with the boasted prosperities of the early industrial period: and at first the advantages and defilements were so closely associated that people even prided themselves on the smoke of the thriving town ...".¹

It is, then, perhaps no mere coincidence that the three men to first seriously consider the questions of conservation and preservation, all came from New England, a region that led the United States in the growth of industrialization in the 1850's.²

¹Lewis Mumford, *op. cit.*, 63.

²For an estimate of the utilization of land in the United States from 1850 to 1910, see Appendix III, page .
Chapter II

Three Philosophers, 1850-1864

The concepts of Conservation were a gift to the American people of a small group of intellectuals: scientists, who in their ardent study of the natural world, remained indifferent to the contemporary practice of accumulating unlimited amounts of material goods, and who refused to evaluate life in terms of gold. This small band, made up of naturalists, landscape architects, arboriculturists, foresters, geologists, and a few editors of national magazines, waged a difficult and unceasing educational campaign for the next 36 years. Through their writings and active leadership, they succeeded in reversing the traditional attitude of the American people towards the use and disposal of the national resources of the United States. It was on the basis of these pioneer efforts that the program known as the "Conservation Movement" emerged, 1901-1909, into political reality under the guidance of Theodore Roosevelt, Gifford Pinchot, and Frederick Haynes Newell.¹

By 1864 three scientific thinkers had set forth in classic form their reasons for the need of the conservation and preservation of nature and natural resources in the United States. As the writings

¹The intellectual origins of the Conservation Movement have been little studied by historians. The writer in this chapter is heavily indebted to the brilliant and perceptive chapter that appears in Lewis Mumford, The Brown Decades -- a Study of the Arts in America, 1865-1895 (New York, 1931), 59-96; Benjamin H. Hibbard, History of Public Land Policies, 472-473.
of these men provided a complete arsenal of ideals from which all subsequent leaders in the cause of conservation were to draw their intellectual weapons, we shall examine here briefly the arguments advanced by the three basic philosophers of Conservation.

1. **Henry David Thoreau (1817-1862)**

   Henry David Thoreau, the naturalist-poet-philosopher of Concord, Massachusetts, was a Transcendentalist in his thought and a true disciple of Emerson. Appalled by the increasing materialism taking place in society around him, in which people appeared to be devoting their entire lives solely to the endless task of amassing unlimited amounts of material goods, Thoreau had the audacity to suggest that there were perhaps alternate modes of life that offered better opportunities in achieving a greater degree of human happiness. As a counterpoise to his generation’s fascination and preoccupation with "civilized life" and manufactured goods, Thoreau called attention to the importance of Nature to man as a means of returning to the realities of the actual world and also as the one place where modern man could refresh his soul.

   In words of Lewis Mumford, Thoreau’s mission was "to acclimate the mind of highly sensitive and civilized men to the natural possibilities of the environment: to make them see, smell, breathe, feel, touch the objects around them, and to find out how much nature could give that culture and civilization had left out of account."¹

¹Lewis Mumford, *op. cit.*, 67.
This exploration recommended by Thoreau was not a means to an end; it was not a preliminary step, but an enjoyment or pleasure in itself. Thoreau was perhaps the first person in America, and in opposition to the spirit of his generation, to devote himself to this exploration systematically, and to touch every part of the natural environment with equal fervor and gusto. He recommended that Americans should follow the notable examples set by the kings of England in public policy, by preserving the wild places of the continent for the public's own enjoyment, lest in the ruthless quest for material possessions, Americans should lose a greater part of what was really worth possessing.¹

In Mumford's opinion, "Thoreau, more than any one else in America acknowledged this need (for a new view of nature) and gave expression to a positive philosophy." His books and writings "were both directly and indirectly the starting point of a whole movement. At a time when the cockney and the pioneer were dominant, both with a strong impulse against fine use of the natural environment, Thoreau helped to set the tide moving in a contrary direction. He did not work alone, but his words must be put alongside the practical works and the concrete political programs which followed. . . . It is doubtful," Mumford concludes, "if these latter would have found

¹In the Atlantic Monthly II 317, Thoreau wrote, "Why should not we . . . have our national preserves . . . in which the bear and panther, and some even of the hunter race, may still exist, and not be 'civilized off the face of the earth,' . . . for inspiration and our true re-creation? Or shall we, like villains, grab them all up, poaching on our own national domains?" Cited in Hans Huth, *Nature and the American*, 169; see also Lewis Mumford, *The Golden Day - A Study in American Experience and Culture* (New York, 1928), 117.
"themselves so quickly but for the help and popular understanding which his writing gave."

In opposing the spirit of his age Thoreau paid the price: the two books he published during his lifetime—*A Week on the Concord and Merrimack Rivers* (1849) and *Walden, or Life in the Woods* (1854)—were rejected by the public and were financial failures. In truth, he was little known outside of his hometown, but after his death in 1862, his sister, Emerson, and other friends published a steady stream of the naturalist’s writings that kept his ideals before the public from 1863 to 1895. His concepts were also grasped by able young men, such as John Burroughs and John Muir, who wrote in the spirit of their master.

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1Lewis Mumford, *From Decades*, 71-72.

2Thoreau’s books published after his death were: *Excursions* (1863); *The Maine Woods* (1864); *Cape Cod* (1865); *A Yankee in Canada* (1866); *Letters to Various Persons* (1865); *Early Spring in Massachusetts* (1881); *Summer* (1884); *Winter* (1883); *Autumn* (1892); and *Poems of Nature* (1895).

2. **George Perkins Marsh (1801-1882)**

George P. Marsh, lawyer, diplomat, and brilliant scholar, was born at Woodstock, Vermont, in 1801. Graduating from Dartmouth College in 1820, he studied law and was admitted to the bar at Burlington, Vermont, in 1825. He entered politics as a Whig in 1834 and in 1849 was appointed Minister to Turkey, in which capacity he served until 1854. He became a Republican in 1856, and from 1860 until his death in 1882, was United States Minister to Italy.

Marsh’s great seminal work, *Man and Nature, or Physical Geography as Modified by Human Action*, was first published in New York City in 1864. This volume became both the opening gun and the intellectual bible of the subsequent leaders of the Conservation Movement. His book included the results of many years of acute observation, made during his extensive travels through Turkey, Palestine, Egypt, Greece, Italy, and the Middle Western United States, combined with his wide reading in world history. Marsh introduced a subject that had hardly yet been opened up for scientific study: the earth itself as the home of man. He demonstrated by historical examples the irremediable damage done to ancient and classical countries in the Mediterranean by man’s careless destruction of forests, and he warned Americans against bringing a similar fate upon their nation.
As Marsh expressed it in his preface: "The object of the present volume is to indicate the character and approximately, the extent of the changes produced by human action in the physical condition of the globe we inhabit, to point out the dangers of imprudence and the necessity of caution in all operations which, on a large scale, interfere with the spontaneous arrangements of the organic or the inorganic world, to suggest the possibility and the importance of the restoration of disturbed harmonies and the material improvement of waste and exhausted regions."

Continuing, he noted: "All human institutions, associate arrangements, modes of life, have their characteristic imperfections. The natural, perhaps the necessary, defect of ours (America), is their instability, their want of fixedness, not in form only, but even in spirit. The face of physical nature in the United States shares this incessant fluctuation and the landscape is as variable as the habits of the population. It is time for some abatement in the restless love of change which characterizes us, and makes us a nomad rather than a sedentary people. We have felled forest enough everywhere, in many districts, far too much. Let us restore this one element of material life to its normal proportions and devise means for maintaining the permanence of its relations to the fields, the meadows, and the pastures, to the rain and the dew of heaven, to the springs and rivulets with which it waters the earth. The establishment of an approximately fixed ratio between the two most broadly characterized distinctions of rural surface—woodland and ploughland—would involve a certain
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"persistence of character in all the branches of industry, all the occupations and habits of life, which depend upon or are immediately connected with either."\(^1\)

Marsh treated man as an active geological agent. Like other agents, he could upbuild or degrade. One way or another, however, he was a disturbing agent, who upset the harmonies of nature. Man in the 19th century, Marsh argued, had thus far played the part of an irresponsible, destructive being—as he had, to his own misfortune, in classic times. It was now time for mankind to become a moral agent: to build where he had destroyed, to replace where he had stolen.\(^2\)

In 1874 Marsh issued a second and revised edition, entitled *The Earth as Modified by Human Action*, which was translated into Italian. In his second edition, possibly influenced by Thoreau but more probably by the active work then being conducted by Frederick Law Olmstead, Marsh added a section discussing the public park idea, stating:

"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 students, a garden for the recreation of the lovers of nature, and an asylum where indigenous trees . . . plants . . . beasts may dwell and perpetuate their kind."\(^3\)

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\(^1\) Cited in Lewis Mumford, *Brown Decades*, 74-76.


\(^3\) Hans Ruth, *op. cit.*, 169.
A third edition of his book appeared in 1876. In 1905 the noted geologist Nathaniel Southgate Shaler recapitulated part of Marsh's argument and brought it up to date, in his book *Man and the Earth* (New York, 1905).¹

3. **Frederick Law Olmsted (1822-1903)**

Frederick Law Olmsted, the son of a well-to-do merchant, was born in Hartford, Connecticut, in 1822. He was educated in New England and attended lectures at Yale, although never long enough to receive a degree. He also traveled widely, making a tour of Europe in 1850, two journeys through the slave states of the South and one to Mexico and California, 1852-1854. From 1847 to 1857 he worked as an experimental farmer, practicing with scientific methods of agriculture. In 1857 he accepted the position of superintendent of the proposed Central Park project in New York City and also formed a partnership with the landscape architect Calvert Vaux, author of the first plan for Central Park. In 1858, with Vaux's permission, Olmsted anonymously submitted a new design for the park that was awarded the first prize in a new competition. In May 1858, Olmsted was also appointed Architect in Chief of the Park.²

Olmsted was a disciple of Thoreau in his concept of the human benefits to be derived from nature. Up to this time there was

¹ *Dictionary of American Biography*, XII, 297-298.

nothing in the United States that could be truly called a park.\(^1\)

Impressed by the rapid deterioration of the cities of the North under the impact of spreading industrialism, Olmsted conceived and perfected the remarkable idea of introducing nature, in the form of the large landscaped forest park, into the center of cities.

The greater part of the construction and planting of Central Park was done between 1857 and 1861; 800 acres, chiefly rocks, swamps, and pasture were eventually transformed into lakes and meadows, wooded heights, and grottoes, with a mall and promenade, and a highroad and pedestrian walk system. The Central Park project at once became world famous.

Olmsted's justification of the public landscaped park, as Mumford has pointed out, "lay in the fact that it promoted the simple elementary pleasures of breathing deeply, stretching one's legs, basking in the sun . . . . Olmsted fought for this idea: he gave it a setting: he provided it with a rational justification. The landscape could be enjoyed, and the enjoyment could sometimes be heightened by the deliberate efforts of the designer."\(^2\)

In the "public forest parks" that were soon to appear in the great cities of the north and west, the rich and poor alike could equally enjoy its pleasures. It is quite possible, as Mumford has

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1 The first article on "Parks" to appear in any American encyclopedia was written by Olmsted in 1860 and published in Appleton's New American Cyclopaedia in 1861; see Hans Borth, op. cit., 166.

2 Mumford, The Brown Decades, 89, also see 80-96; Hans Borth, Nature and the American, 165-166.
suggested, that the pleasant hours experienced in these parks
by the multitudes did more to interest the public and to forward
the causes of Conservation than thousands of words of logical,
scientific, but impersonal argument.

Exhausted by his struggles with politicians in the battle
to construct Central Park and also by his services with the U. S.
Sanitary Commission during the opening years of the Civil War,
Olmsted, for reasons of health, went to California in 1863 as
superintendent of John Fremont's Mariposa mining estate in Bear
Valley.

In November of that year the landscape architect first visited
Yosemite and, impressed by its beauty, launched a movement, both
in California and the nation's capitol, to protect this unique
valley. On March 28, 1864, Senator John Conness, of California,
introduced a bill in Congress to grant the State of California
tracts of federal land embracing the Yosemite Valley and the
Mariposa Grove of Big Trees. He explained that the purpose of
his bill was to "commit them to the care of the authorities of
that State for their constant preservation, that they may be
exposed to public view, and that they may be used and preserved
for the benefit of mankind."¹

The bill, stipulating that "the premises shall be held for
public use, resort, and recreation; . . . inalienable for all time,"
was passed and signed into law by President Lincoln on June 30, 1864.

¹Cited from Carl P. Russell, One Hundred Years in Yosemite
(Berkeley and Los Angeles, 1947), 148-149.
On September 28, 1864, Governor F. K. Low proclaimed that trespassing upon the tracts must desist, and appointed a board of Yosemite Commissioners, with Olmsted as its chairman. The federal grant was accepted by the state legislature at its next session, on April 2, 1866.¹

In the fall of 1865 Olmsted submitted a report to the state legislature presenting a comprehensive plan for the preservation of Yosemite Park. These new public grounds, he felt, should be opened for "the use of the body of the people," and for their "free enjoyment"; he considered it the duty of the managers of the Yosemite to make the park serve the people in their "pursuit of happiness." As Hans Huth has pointed out, this document makes it evident not only that Olmsted envisaged the conserving of certain important natural features, but also that he was among the first to conceive the idea that "great public parks" must be managed for "the benefit and the free use of the people."²

The California State Legislature, however, chose to ignore Olmsted's suggestions, and in November of 1865 the landscape architect returned to the East to again take up his task of completing Central Park.


²Hans Huth, Nature and the American, 149-150; Olmsted's report, entitled "The Yosemite Valley and Mariposa Big Trees, a Preliminary Report (1865)" was lost for many years, but was discovered and published with an introductory note by Laura Wood Roper, in Landscape Architecture, XLIII (1952), 12-25.
By 1864 then, Thoreau's books were beginning to "sell"; Marsh's book, *Man and Nature*, first appeared in print; Olmsted's concept of the public park stood visible in actual although incomplete demonstration in the form of Central Park; and, finally, the federal government made the first grant from the public domain of land for purposes of preservation and recreation, in ceding Yosemite and the Mariposa Grove Big Trees to the State of California in 1864. It can thus be suggested with some logic that the year 1864 marked a great turning point in the history of conservation in the United States.
Chapter III

The Spread of Ideas, 1865-1879

1. The Landscape Architects Campaign for the Public Park Idea

Returning to the East, Olmsted completed his work on Central Park by 1870 and also prepared park plans for the following cities: San Francisco (1866); Newark, New Jersey (1867); Brooklyn, (1868); Albany, New York (1868); Buffalo, New York (1869); Staten Island, New York (1870); South Park, Chicago (1870); Fall River (1870); Philadelphia (1870); Washington, D.C. (1874); Montreal (1870); Boston (1875); Hartford, Connecticut (1878); and preliminary work on the Arnold Arboretum at Harvard University was started in 1878. In 1869 Olmsted also started work on proposals to preserve the scenic splendors of Niagara Falls, New York.¹

In his pamphlet, Public Parks and the Enlargement of Towns, first published in 1870, Olmsted laid down the lines of a complete park program based on excellent social, hygienic, and humane grounds.² In 1881 he also published his A Consideration of the Justifying Value of a Public Park.

Another able collaborator of Olmsted's theories was Horace William Shaler (1814-1900). Born at Lancaster, Massachusetts, Shaler entered landscape gardening in 1854 at Boston. In 1869

¹Frederick Law Olmsted, Jr., and Theodora Kimball, Frederick Law Olmsted, Vol. I, 11-24, has a detailed list of all his projects for this period.

he established himself in Chicago and in the same year published his first western professional paper, entitled *Public Grounds of Chicago; How to Give them Character and Expression*. His early work in that city included South Park and Drexel Boulevard. He then extended his practice into Indiana, Michigan, Wisconsin, Iowa, and Kansas. In 1873 he published a small book entitled *Landscape Architecture as Applied to the Wants of the West; with an Essay on Forest Planting in the Great Plains*; in this he quoted from Marsh's book and urged the establishment of public landscaped parks in the cities of the Mid-West.¹

Thus, through the works and creations of men like Olmsted and Shaler, the public park idea, invoking in visible form the principles of Thoreau and Marsh, was given a wide and active demonstration in the East and Mid-West between 1864 and 1879.

2. The First National Park, 1872

In 1869 David E. Folsom, Charles W. Cook, and William Peterson explored the Yellowstone region and considered the possibility of creating a park in this unique area. Their accounts of discoveries led General C. C. Washburn, Nathaniel P. Langford, Cornelius Hedges, G. C. Doane, and others to make a second trip into the same area in 1870. On their return they issued a report that was given considerable publicity in the newspapers and magazines, in which they described the wonders they had seen and suggested that Yellowstone should be kept in such ownership as would ensure the permanent

public use of this region. A third expedition, led by United States Geologist Ferdinand V. Hayden, and accompanied by a group of scientists, the photographer William H. Jackson, and two artists, Thomas Moran and Henry Elliott, surveyed the Yellowstone and published a detailed geological and descriptive report as a government document. Professor Hayden also supported the public park idea for the purpose of preserving this area.

The Yosemite Valley grant of 1864 had already set a precedent, but since, in this case, Yellowstone was situated in a territory, trusteeship of such a park obviously could not be ceded to a state. The only solution left was the establishment of a public park under the immediate administration of the federal government. A bill to achieve this end was introduced in Congress on December 18, 1871, passed in February, 1872, and signed into law by President Grant on March 1, 1872.\(^1\)

The law provided that Yellowstone "is hereby reserved and withdrawn from settlement, occupancy, or sale under the laws of the United States, and dedicated and set aside as a public park or pleasuring-ground (Italics mine) for the benefit and enjoyment of the people ..."\(^2\) Olmsted's idea of the public park, first demonstrated in New York City, then applied to the state of California, was now utilized on the national level; in the latter two cases, the public domain had been set aside to preserve natural beauty and recreational values of a region.

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Jurisdiction over the first national park was given to the Secretary of the Interior, who was directed to publish rules and regulations for governing the park. Yellowstone, however, was isolated and virtually inaccessible; the first railroad did not reach the park until 1883. Congress also failed to vote appropriations for the park until 1878, and even elementary protection of the park was not provided until 1886, when federal troops were sent to patrol the region.¹

In 1875 Mackinac Island was next set aside as a National Park, excluding the fort itself, for the "health, comfort, pleasure, benefit, and enjoyment of the people." The minerals and natural wonders of the island were to be protected as well as the fish and game, and administration and protection were made the responsibility of the Secretary of War. A proposal to place the park under the administration of the State of Michigan was rejected by Congress in 1875. The island, which in practice became a rich man's summer resort, was finally turned over to the State of Michigan in 1895 as a state park.²

Hot Springs, in Arkansas, had been set aside in 1832, when the federal government reserved four sections of land surrounding salt springs that were supposed to have great curative powers. But Hot Springs was not established as a "Reservation" by Congress

²John Ise, op. cit., 49.
until 1870, and development of the area as a public health center did not begin until 1877; the Springs finally became a national park in 1921.\(^1\)

3. The Adirondack Park Question, 1872-73.\(^2\)

The extensive cutting of timber in the Adirondack Mountains of New York State gave rise to considerable debate in the Empire State over how best to utilize this region. On March 15, 1872, Thomas G. Alvord introduced a bill in the State Assembly to create an Adirondack State Park Commission, and a few days later a similar memorial was presented to the State Senate asking for the preservation of the forests and game in New York by creating a "public forest park." A law was enacted establishing a commission of seven men and directing them "to inquire into the expediency of providing, for vesting in the State, the title of the timbered regions lying within the counties of Lewis, Essex, Clinton, Franklin, St. Lawrence, Herkimer, and Hamilton and converting the same into a public park," and to make a report on their findings.

The Commissioners submitted their report on May 15, 1873, and in it described the Adirondack region and its resources. They drew attention to the wasteful methods of the lumbermen, the tax situation which invited destruction of immature trees, the too generous subsidy of state lands that were being given to railroads,

\(^1\)John Ise, op. cit., 244; Laws Relating to the National Park Service, 221-223.

\(^2\)The two fullest histories of this controversy are: Gurth Whipple, Fifty Years of Conservation in New York State, 1885-1935 (New York, 1935); and Alfred L. Donaldson, A History of the Adirondacks (2 vols., New York, 1921).
the need for the control and preservation of the water supply, and the social reasons for forest preservation. They recommended that the wanton destruction of forests be stopped and that the wild land then owned by the state be held until the question of establishing a forest preserve could be decided by the legislature.

While the Commission presented a united front in the report on these questions, there was a difference of opinion within that body over the best way of utilizing the area once it had been reserved for public use. Verplanck Colvin, who was to head the subsequent Adirondack surveys from 1872 to 1900, is said to have publicly advocated the creation of an Adirondack Park as early as 1868; he did so now, and in an Adirondack Survey report submitted in 1874 urged the establishment of the State reserve as a park to preserve its recreational values.

Franklin B. Hough, another member of the Commission, on the other hand, urged the reasonable economic utilization of the timber resources of the proposed reserve, stating:

"With us no Government, State or Nation will ever undertake reservations for this recreational or park purpose. It may be done by individuals or groups for their own amusement but that is a matter that concerns nobody else. The sale of these privileges by government may be practicable and profitable in Europe but it is altogether out of place with us. Our taxpayers would never tolerate such an object of expense and it is to be regretted that the word 'park' has ever been used in this connection because it


"leads to the erroneous idea that expenses are to be increased for the enjoyment of those who have time or money to spend in sports or in woodland life."

Governor John A. Dix, in his annual message of 1874, approved the Park Commission's report and urged the legislature to enact into law their recommendations. The legislative body, however, accepted the report, and filed it away. There the question was to rest for ten years. An interesting point to note, however, is that the principles of Thoreau, Marsh, and Olmsted were being seriously debated at an early date in the most populous state of the Union and involved was a large area that was readily accessible to thousands of people. 1

4. The First Foresters: Hough and Fernow

Franklin Benjamin Hough (1822-1885), forester, physician, historian, and teacher, was born in Martinsburg, Lewis County, New York. He graduated from Union College at Schenectady, New York, and after serving two years as a teacher and principal, decided upon a medical career. He attended Western Reserve Medical College, from 1846 to 1848, and graduated with a degree of M.D. He then practiced medicine at Somerville, New York, and in 1854 was chosen to direct the New York State census. During the Civil War he served first as an inspector of the U.S. Sanitary Commission and from 1862 to 1863 was a surgeon of the 97th New York Volunteers.

Settling in Lowville, New York, he superintended the New York State Census of 1865. In 1867 also he directed the census of the District of Columbia, and in 1870 was selected as superintendent of the United States Census. Hough became interested in forestry when his study of the census figures confirmed George F. Marsh's statements that the timber resources of the United States were being rapidly depleted. In 1873, at the meeting of the American Association for the Advancement of Science, held at Portland, Maine, Hough presented a paper entitled "On the Duty of Governments in the Preservation of Forests"; this was the first statement made on the preservation question that commanded national attention.

In this speech Hough stressed the danger and error of the popular impression that the timber resources of the United States were almost inexhaustible, and he was able to back up his statements with census facts and figures; he urged action to preserve the forests. He elaborated on the great advantages to the nation that would result by the withholding from sale of the public forest lands of the West, particularly those situated in wild, mountainous regions. These preserved forests, Hough argued on Marshian principles, would ensure a uniform flow of streams as well as a secure timber supply.

In response to Hough's appeal, the Society appointed a committee, of which Hough was a member, to memorialize Congress on the forest question. The committee's report, which advocated the enactment of federal laws to encourage forest preservation,
was endorsed by President Grant and presented by him to Congress in February, 1874. Two years later Congress took action: on August 30, 1876, Hough received his appointment as Forestry Agent, in the U. S. Department of Agriculture -- the first such position to be established in the United States, and was directed to investigate the consumption of timber and the problem of preservation of forests.

In December 1877 he completed his first study on this subject, entitled Report on Forestry, 1877, which was the first book on forestry to be prepared in the United States.1

In 1876 Bernhard Eduard Fernow (1851-1923), the first professionally trained forester to work in America, arrived in this country. Fernow -- forester, author, teacher, and accomplished musician, was born in Inowrazlaw, Posen, Germany, in 1851. He received his education at the Gymnasium at Bromberg, at the University of Königsberg, and then at the Hanover-München Forest Academy. After serving in the German Army during the Franco-Prussian War, he entered the Prussian forest service and before coming to America, had achieved the grade of Forstkandidat. When the young forester reached the United States in 1876, he found

that the conception of forestry as applied to the protection and perpetuation of existing forests was almost unknown in this country. This pioneer could find no position in his chosen field of endeavor. In 1878, he found employment as manager of a large tract of land in Pennsylvania that was owned by the Cooper-Hewitt mining interests, a position that Fernow was to hold until 1885.

Shortly after his arrival in this country, Fernow began to write articles about forestry and at once attracted the attention of scientists and others who were interested in this subject.

By 1876, then, scientific studies in a new science, forestry, were underway in the United States, and the first professional forester had arrived in America.

5. An Arboriculturist: Charles Sprague Sargent

A third young man who was destined to play a major role in the history of conservation was the noted arboriculturist, Charles Sprague Sargent (1841-1927). Sargent, the son of a wealthy merchant, was born in Boston and graduated from Harvard University in 1862.

1The oldest conservation society in the United States, the American Forestry Association, was formed on July 12, 1875, at St. Paul, Minnesota, for the purpose of encouraging reforestation. This association distributed a tree planters’ manual to assist in this program. See Gurth Whipple, Fifty Years of Conservation in New York State, 77.

From 1863 to 1865 he served as a volunteer in the Northern Army, rising to the rank of major. He was professor of horticulture at Harvard University from 1872 to 1873, and then professor of arboriculture, from 1879 to 1927. He served as director of the Harvard Botanic Garden at Cambridge, Massachusetts, from 1872 to 1879. In 1873 Sargent also became director of the newly created Arnold Arboretum of Harvard University, which was soon to become the outstanding research institution of its kind in the United States. The plans for the new 260-acre arboretum, located at Jamaica Plain, were jointly worked out in the summer of 1878 by the landscape architect Frederick Law Olmsted and Sargent. Their advanced ideas, however, met with so much opposition that it was not until the spring of 1886 that first trees could be planted in their permanent groupings in the arboretum.¹

6. Two Young Naturalists: Burroughs and Muir

Two young naturalists, John Burroughs and John Muir, destined to play important roles in the history of Conservation, were both disciples of Thoreau and Marsh.

John Burroughs (1837-1921), author and naturalist, was born in Ulster County, New York, in 1837. He studied at Cooperstown Seminary in 1856 and from 1857 to 1863 taught school. His first article, "Expression," appeared in the Atlantic Monthly in 1860. In 1863 he went to Washington, D. C., where he took a desk job in the Currency Bureau of the U. S. Treasury Department, a position which he held until 1873.

Burroughs became fascinated with nature first through a study of wildflowers and birds that he undertook in the spring of 1863. The first in a series of his nature essays, "With the Birds," appeared in the Atlantic Monthly in 1865. His first nature book, Wake-Robin, appeared in 1871, to be followed by Winter Sunshine, in 1875, and Birds and Poets, in 1877. In this long series of writings, Burroughs brought the nature essay into widespread vogue and developed it into a high form of art. His essays, written in the tradition of Thoreau, were marked by delicate feeling, acute observation, honest thought, and a simple and natural style of expression.1

Burroughs left Washington in 1873 and returned to his native Catskill Mountains in New York. Here he purchased a farm, located near Esopus, and built a house which he called "Riverly," and devoted all of his time to studying and writing about nature.

John Muir (1838-1914), naturalist and explorer, was born at Dunbar, Scotland, in 1838. At the age of 11 he came with his family to the United States, where they settled on a homestead in Wisconsin, near Portage. Muir spent the years 1860 to 1863 attending the University of Wisconsin. Already interested in nature, he hiked through the woods of Wisconsin and Canada in 1864. In 1867 he made a 1000-mile walk to the Gulf of Mexico and then proceeded by ship to the Pacific Coast. Arriving in California in 1868, he immediately went to the Yosemite Valley, 

which remained the center of his studies and explorations until 1874. As a naturalist, Muir was interested in all the life and phenomena of the natural world. But he gave his most enthusiastic and continuous study to glaciers and forests. He was the first (1870) to demonstrate the origin of Yosemite Valley by glacial erosion, opposing the views of eminent geologists of the time.

From 1875 to 1879, he extended his explorations to the mountain country of Nevada, Utah, the Pacific Cascades, and to Alaska, where he discovered and described many other great residual glaciers and also indulged in his other great passion, the study of trees, particularly the sequoias and pines. By 1879 Muir was undoubtedly the outstanding authority on the forests of the Far West.

In 1871-72, Muir began to write for publication. His first three articles, describing the natural features of Yosemite Valley, were published in the New York Daily Tribune, and attracted considerable attention. Between 1872 and 1875 a series of 17 articles appeared in the Overland Monthly, a San Francisco magazine. Harper's Magazine also carried one of Muir's articles in 1873, and Scribner's Monthly published a series of his finest nature stories in 1878. By 1879, then, Muir had established himself among the scientists of the nation as an authority on the glaciers and forests of the West and was also well known through his writings to readers on the West Coast.

A disciple of Thoreau and Marsh, Muir was alarmed by the devastation taking place in Yosemite and the mountains of the
West. The Sacramento Record Union, on February 5, 1876, carried Muir's first article urging federal control of the forests for the purpose of preserving them. Citing Marsh's principles, Muir pointed out that waste and destruction of forests, due to sawmills, fires set by stockmen, and from the sheep hordes that were annually invading the Sierra, were proceeding at a perilous rate in the Far West. Unless some legislative action was taken soon, he concluded, these great forests would be gone within a few years.¹

7. The Geologists, Powell and Hayden, and Scientific Land Classification

John Wesley Powell (1834-1902), geologist, philosopher, and administrator, was born at Mount Morris, in the Genesee Valley of Western New York, in 1834. He studied at Illinois College, Oberlin College, and Wheaton College, but took no degree. Powell then served in the Union Army during the Civil War and lost his right arm at the Battle of Shiloh. In 1865 he accepted the position of professor of geology at Illinois Wesleyan College at Bloomington. During the summer months of 1867 and 1868 he made field trips to the mountains of Colorado. In 1869, financed by the Smithsonian Institution, he made his great exploring trip down the Colorado River. Further western exploring expeditions, financed by small Congressional appropriations, were made by Powell in 1871 and 1874.²


Beginning work in 1867, and operating independently of Powell, Professor Ferdinand Vandeveer Hayden, an able geologist, directed a unit known as the Geological and Geographical Surveys of the Territories of the United States, also operating in the West. In 1875 Powell joined in this federally supported work as director of a second division known as the United States Geographical and Geological Survey of the Rocky Mountain Region. Each unit acted independently of the other, but both teams worked in the region west of the 100th meridian, under the supervision of the General Land Office of the U. S. Department of the Interior. These two surveys, cooperating with a similar organization in the War Department, set a very high level of scientific work and contributed greatly toward an appreciation by the general public as well as by men of science of the very diversified character of the far western portion of the United States.

On April 1, 1878, Major Powell presented to the Commissioner of the General Land Office, James A. Williamson, his notable Report on the Lands of the Arid Region. Secretary of the Interior Carl Schurz at once enthusiastically transmitted this study to Congress.

In his report Powell emphasized the great extent and importance of irrigable and pasturage (non-agricultural) lands in the West. Summing up his recommendations concerning classification of land in the public domain into distinct categories, he wrote:

"In providing for a general classification of the lands of the arid region, it will, then, be necessary to recognize the following
"classes, namely mineral lands, coal lands, irrigable lands, timber lands, and pasturage lands. The mineral lands are practically classified by the miners themselves," Powell pointed out, "and for this no further legal provision is necessary. The coal lands must be determined by geological survey. The work of determining the area which should be relegated to the other classes, namely irrigable, timber, and pasturage lands, will be comparatively inexpensive," he predicted.¹

In June 1878 Congress requested the National Academy of Science to consider the best methods and most efficient means of conducting and coordinating all surveys of a scientific character then being conducted by the War and Interior Departments in western territories of the United States.²

The report of the Committee of the National Academy of Sciences on Surveys of the Territories was submitted to Congress in November, 1878. It recommended that the two survey teams in the Department of the Interior and that of the War Department be abolished and that the activities of all these former surveys be consolidated into a single organization to be known as the U. S. Geological Survey. With reference to land classification, the committee reported:

¹Wallace Stegner, op. cit., 211-231; Executive Document No. 73, 45th Congress, 2nd Session, 1877-78; Benjamin H. Hibbard, A History of the Public Land Policies, 472, 496-499; Van Hise and Havemyer, Conservation of our Natural Resources, 5.

²Sundry Civil Bill, approved June 30, 1878, U. S. Statutes at Large XX, 230; Wallace Stegner, op. cit., 231-235.
"The best interest of the public domain requires, for the purposes of intelligent administration, a thorough knowledge of its geologic structure, natural resources, and products. The domain embraces a vast mineral wealth in its rocks, metals, salines, stones, clays, etc. To meet the requirements of existing laws in the disposition of the agricultural, mineral, pastoral, timber, desert, and swamp lands, a thorough investigation and classification of the acreage of the public domain is imperatively demanded."

The Committee further recommended that the General Land Office should "call upon the United States Geological Survey for all information as to the value and classification of lands."

On March 3, 1879, Congress passed a law abolishing the former territorial surveys and establishing the new one, the U.S. Geological Survey in the Department of the Interior. The law also directed the President of the United States to appoint a Commission for the purpose of codifying the federal land laws.¹

Chosen for the Commission were J. A. Williamson, the Director of the General Land Office; Clarence King, the Director of the new United States Geological Survey; and three civilians -- A. T. Britton, Thomas Donaldson, and J. W. Powell. They were instructed to report to Congress: "first a codification of the present laws relating to the survey and disposition of the public domain; second, a system and standard of classification of public lands, as arable,

"irrigable, timber, pasturage, swamp, coal, mineral lands, and such other classes as may be deemed proper, having due regard to humidity of climate, supply of water for irrigation, and other physical characteristics; third a system of land parcelling adapted to the economic uses of the several classes of lands; fourth, such recommendations as they might deem wise in relation to the best method of disposing of the public domain of the western portion of the United States to actual settlers."¹

The Commission made its preliminary report in 1880. Its findings constitute the most comprehensive study of the public domain ever made in the United States and were published in three volumes as follows: (1) Report of the Public Land Commission, Created by the Act of March 3, 1879, Relating to the Public Lands in the Western Portion of the United States and to the Operations of Existing Land Laws (1880); (2) Thomas Donaldson, The Public Domain: Its History, with Statistics (1880); and (3) J. W. Powell, Report on the Lands of the Arid Region of the United States (2nd Edition, 1879).

In its report recommending new legislation, the Commission commented: "There can be no doubt that much land has passed from the government into the hands of individuals in a manner and under circumstances which were not contemplated when the laws were made; that the conditions required by law have been imperfectly fulfilled

¹U. S. Statutes at Large, XX, 394; Wallace Stegner, op. cit., 241-242; Benjamin H. Hibbard, op. cit., 500-501.
"by the settlers and claimants, that compliance with such requirements has often been perfunctory and nominal, or even evaded altogether. It also appears that lands which should be opened to occupation and settlement are practically barred therefrom by the effect of restrictions which render their acquisition extremely burdensome and difficult. . . ."

The Commission further stated: . . . "a very great proportion of the land of the West cannot become settled and pass into private ownership because under the terms of existing laws it is not desirable to the settlers to acquire them."

"These difficulties have in the main grown out of the want of adaptation to the present public domain of the laws which were originally framed for the Northwest Territory."¹ Congress, however, chose to ignore the Commission's recommendations, and a remarkable opportunity to correct serious abuses and to adjust Federal law to fit actual conditions in the West was thus lost.

The social importance of public land was also noted prior to 1879. In Our Land and Land Policy, National and State, Henry George of California wrote in 1871: "We are giving away our lands in immense bodies (to railroads), permitting, even encouraging, a comparatively few individuals to monopolize the land to which coming millions of our people must look for their support. In a few years, the public domain will be all gone; in a few more years the homestead law and pre-emption law will serve

"but the purpose of reminding the poor man of the good time past. We shall find ourselves embarrassed by all the difficulties which beset the statesmen of Europe -- the social disease of England and the seething discontent of France." His full treatment of the subject, *Progress and Poverty*, first appeared in 1879.

8. **Wildlife**

With the spread of the railroad network west of the Mississippi River, the period after 1864 saw a rapid diminution of American wildlife. Slowly, however, sportsmen began to realize that the outdoor sport and recreational values of game as a national resource at least equalled and often surpassed its commercial value as a food supply. As the game and fish disappeared, sportsmen began to organize to protect their interests. The first such protective organization to be formed in the United States was the New York Association for the Protection of Game (later known as the New York Sportmen's Club), established in 1864. This was followed in 1868 by the formation of the Fish, Game, and Forest League of Game Clubs of New York.

Other states followed: the Blooming Grove Park Association was incorporated in 1871 and the same year established one of the first private game preserves in the country in Pike County, Pennsylvania; the West Jersey Game Protective Association was formed in 1873; the Central Association for Protection of Game in New Jersey, the Massachusetts Fish and Game Protective Association, the Cuvier Club of Cincinnati, Ohio, were all incorporated
in 1874; and the Delaware Game Protective Association was
organized in 1879.

Other new associations that were to take an interest in
conservation causes were the American Forestry Association,
organized at St. Paul in 1875, the Appalachian Mountain Club of
New York, incorporated in 1876, the Archaeological Institute of
America, organized in 1879, and the Bureau of American Ethnology,
established with Major J. W. Powell as its first director in 1879.\(^1\)

State game laws had been enacted at an early date in the
United States, but it was not until the middle of the 19th century
that special officers were employed to enforce these laws. Maine
led the way in 1843 by authorizing the governor to appoint county
fish wardens in three counties, and in 1853 Maine also established
county moose wardens to protect big game. The growth of commercial
fishing interests in New England led to more effective organization:
fish commissions were established in Massachusetts and New Hampshire
in 1865 and in Connecticut and Vermont in 1867. New York created
a state fish commission in 1868. In 1876 the New Hampshire Fish
Commission was reorganized as the Board of Fish and Game Commissioners,
and, in the same year, California also extended the jurisdiction
of its State Fish Commission to include game. In 1871, then, there
were 18 states with organizations that were in some degree charged
with the perpetuation of aquatic resources.

\(^{1}\)Van Hise and Havemeyer, *Conservation of our Natural Resources*,
394, 426-427; Gurth Whipple, *Fifty Years of Conservation in New York
State*, 77, 106-107; Wallace Stegner, *op. cit.*, 251-269.
Federal recognition of this problem was evinced by the formation of the United States Fish Commission in 1871. Its activities originally were directed toward the conservation of the anadromous fishes, such as shad and salmon, but within a short time its interests were extended to include species common to the interior waters.¹

The first state wildlife refuge in the United States was created by an act of the California legislature on March 18, 1870, when Lake Merritt in the city of Oakland was established as a wild fowl sanctuary.² A second state game preserve, although not so designated by name, was the wild-fowl shooting areas situated near the head of the Chesapeake Bay, known as the Susquehanna-Flats and Elk River area, which was placed under the special regulation of the state of Delaware in 1872. The fourth state wildlife refuge, however, was not to be established until 1903.³

There were no federal wildlife refuges established, nor was there any federal legislation relating to game and wildlife enacted prior to 1894.

¹Van Hise and Havemeyer, op. cit., 394, 396, 399, 496.
²Ira N. Gabrielson, Wildlife Refuges (New York, 1943), 6, 224.
³Van Hise and Havemeyer, op. cit., 428.
Chapter IV
Looting the Public Domain, 1864 - 1889

The discovery of gold in California in 1849 resulted in a notable migration into the Far West, and by 1864 mines had been opened in nearly all of the other Western states and territories. This spread of population greatly exceeded the growth of Congressional knowledge of the situation in the West, with the result that federal legislation failed to keep pace with the changing conditions and needs in the Far West. Most of the western mines were located on public domain lands that were unsuitable for agricultural use, yet federal laws only permitted entry for agricultural purposes.

In like manner, most of the West was made up of semi-arid land that could be utilized for agriculture only through irrigation or for pasturage. Existing federal laws, however, failed to recognize this situation. The Homestead Act of 1862 provided that only 160 acres of land could be granted to a settler, and experience soon proved that this unit was too small to be applied successfully on semi-arid lands.

By 1864, then, Congress was vaguely aware that something was out of joint, and from 1864 to 1889 it endeavored to adapt federal land legislation to meet both the actual conditions in the arid west and the legitimate demands of the individual settler. Congress, however, was not to be conspicuously successful in this task.
1. Federal Mining Laws:

Congress responded first to the demands of the mining interests, which then largely dominated the western scene.

A. The Coal Land Acts of 1864 and 1873

In 1864 Congress passed a law providing for the sale of public coal lands at a minimum price of $25.00 an acre. But considering this figure too high, Congress, on March 3, 1873, reduced the price to a minimum of $10.00 an acre when the lands were situated more than 15 miles from a railroad and of $15.00 per acre if located within that distance. The Act of 1873 also limited entry to 160 acres for an individual and to 320 acres for associations.

Prior to 1873, however, all the enormous areas of public coal lands located in the East and Middle West, which formed the chief source of industrial power in the last half of the 19th century, had already passed into private hands at the same cheap rates as were charged for agricultural lands, without any consideration being made for the deposits of coal that these lands contained.

After 1873, entry on the large areas of public coal land located in the West still continued, and these were also sold at only a fraction of the true price that they should have commanded, a condition that was due to carelessness, ignorance, political preference, and other machinations of not too ethical a nature.¹

B. Mining Acts of 1866 and 1872

Not until 1866 did Congress pass the first general law applying to mineral deposits located on the public domain. In the absence of such a law, between 1849 and 1865, miners had evolved their own local regulations in regards to mining claims located on public land; these rules gradually settled into customs and state laws.

The Act of July 26, 1866, provided "that the mineral lands of the public domain, both surveyed and unsurveyed," were "to be free and open to exploration and occupation by all citizens of the United States." Congress thus accepted and legitimized the customs and state laws that the miners had formulated prior to 1866.

This law was further supplemented and amended by the General Mining Laws of 1870 and 1872, which provided that lode claims in the west were to be sold for $5.00 an acre, and placer claims for $2.50 an acre. Lode claims were limited to about 20 acres, and placer claims for one person or association of people was restricted to 160 acres.¹

2. Federal Laws Relating to Timber

A. Timber Culture Acts of 1873 - 1878

By 1865 the farming frontier had pushed out on the vast treeless regions of the great plains. Here the settlers discovered that they were confronted with a set of conditions vastly different

¹Benjamin H. Hibbard, op. cit., 517-518; Van Rite and Havemeyer, op. cit., 110.
from those that they had previously faced in the heavily forested areas of the humid East. It was found, however, that trees could be readily grown from seed out on the prairies, provided that they were properly cultivated and protected from fire. Beginning in 1866, the Commissioner of the General Land Office yearly urged Congress to enact legislation to encourage the planting of trees on the Great Plains. Congress began to consider seriously the question in 1871; and the first Timber Culture Act, introduced by Senator Hitchcock of Nebraska, was passed with little discussion on March 13, 1873. The "Act to encourage the growth of timber on western prairies" provided that any person who would plant, protect, and keep in a healthy growing condition for 10 years, 40 acres of timber trees planted not more than 12 feet apart, would receive title to the quarter section of land of which the 40 acres was a part. Only one-quarter in any section was to be obtained in this manner. The Act was amended in 1874 by reducing the period that timber must be cultivated from 10 years to 8. Further changes were made in 1876 as a result of grasshopper devastations on the plains. The Timber Culture Act of June 14, 1878, finally reduced the number of acres that must be planted in trees from 40 to 10 acres and prescribed the number of trees that must be grown on each acre: 2,700 at time of planting and "675 living, thrifty trees" when the patent was finally to be granted.

Regardless of the original intention of Congress, it was generally admitted by 1879, on the basis of evidence collected
by the Public Land Commission, that the Timber Culture Laws had failed to accomplish the results desired. Experience demonstrated that these laws gave away public lands on too small a pretext: one that was easily and largely taken advantage of by land speculators.

In practice, fictitious entries were made on a large scale by land speculators for the purpose of holding valuable land out of the market (the hands of genuine settlers). For the investment of only $10.00 and a small outlay for planting the first necessary trees, lands could be held for from one to three years, until the growth of the neighborhood enabled the speculator to dispose of his rights at a good profit. Cattlemen also utilized these laws to hold large tracts of semi-arid public land for range purposes. Under the merest pretense of living up to the law they were able to hold on to land for 13 years at a small cost. The Timber Culture Acts therefore produced few trees, but much fraud. The Commissioner of the General Public Lands Office, beginning in 1882, annually urged the repeal of these laws, but Congress failed to take action on the question until 1891.¹

B. **Timber Cutting Act and Timber and Stone Act of 1878**

Before 1878 there was no specific provision in federal law that permitted the private individual to acquire timber from the public domain. Nor did federal law provide for the sale of public non-agricultural timber land. Western mining enterprises required vast amounts of lumber, both as a fuel and to shore up

¹Benjamin H. Hibbard, *op. cit.*, 411-420.
their mines, and sometimes stones; yet there was no way of obtaining a legal right to remove these items from the public lands. As a result, the Western pioneers never being noted for their respect of legal niceties, a great deal of trespassing took place as a matter of course.

In 1874 the Commissioner of the General Land Office urged the necessity of a federal law that would permit the legal disposition of non-agricultural timber lands by sale "at a fair appraised commercial valuation of the timber thereon." Congress, on June 3, 1878, passed two laws, the Timber Cutting Act and the Timber and Stone Act, that were intended to solve these problems.

The Timber Cutting Act authorized citizens of certain western states and territories to cut timber free of charge from public mineral lands for mining and domestic purposes. In 1880, however, the Public Land Commission pointed out that this law was inadequate. "Perhaps not one acre in 5,000 in the states and territories named is mineral and not one acre in 5,000 of what may be mineral is known to be such," it stated.

In the absence of accurate land classification in the West, the legal benefits of this law to the miners and settlers were of little importance. But under the cover of a liberal interpretation of the law, or of the excellent chances of escaping prosecution, due to the absence of a sufficient administrative personnel, there was wholesale abuse of the law by miners and lumbermen. The law, therefore, not only failed to meet the
legitimate needs of the miner and settler, but actually encouraged the rapid and illegal devastation of the forests at a time when the West was experiencing a very rapid industrial development that required an ever increasing amount of timber.¹

The second act -- The Timber and Stone Act of 1878 -- provided for the sale in the states of California, Oregon, Nevada, and the Washington Territory, at not less than $2.50 an acre, of public lands valuable chiefly for timber and stone to citizens in quantities not to exceed 160 acres to each person. The intent was to give each settler, limited to his 160 acres of cultivated land, a needed wood lot of 160 acres to supply lumber for his own domestic uses and the local commercial market. An affidavit was required of each entryman stating that the timber or stone was for his personal use and that the purchase was not made for speculation or for any other person.

Up to 1880 less than the equivalent of one township of land had been purchased under the provisions of this law, but by 1885, when the transcontinental railroads had opened up this region, the practical effects of the law in transferring valuable public timberland almost directly and solely to large corporations and timber speculators, was recognized in the annual report of the General Land Office. The repeal of this law was urged in the strongest terms. Congress, however, chose to ignore these repeated

¹Benjamin E. Hibbard, op. cit., 463-464.
appeals, and, indeed, was apparently so pleased with the operations of the law that the national legislature extended the provisions of the Timber and Stone Act to all the public land states in 1892.

The actual result of this law, however, was the alienation from the public forest domain of over 13,500,000 acres of the most valuable timber land in the United States at an average of $2.75 an acre. Gigantic schemes were devised to acquire title by means of fraudulent entries under this Act. The largest such case, reported in 1886 by the Commissioner of the General Land Office, occurred in California. Here a large lumber firm, using powerful political influence to corrupt the local Land Office officials, fraudulently entered about 100,000 acres of choice and valuable redwood lands located in Humboldt County.¹

3. **Irrigation - Desert Land Act of 1877**

Another law passed to meet the needs of the western settler was the Desert Land Act of March 3, 1877. As early as 1869 Utah had asked, but without success, for public land to be used in promoting irrigation projects. In 1875, however, Congress passed as a trial measure an Act that provided that a tract of unsurveyed desert land situated in Lassen County, California, in amounts not to exceed a section of land to each person, might be taken by certain persons who were to undertake to conduct water upon the land so as to reclaim all of it within a two year period of time.

If successful within the time limit prescribed, they were to receive title to the land on the payment of the minimum government prices. After a visit to the Western mountain states in the autumn of 1875, President Grant recommended that Congress should make a further study of this plan. As a result of such proposals, Congress enacted the Desert Land Act of March 3, 1877, which applied to 11 Western states and territories. This law provided for the sale of a section (640 acres) of land to the settler who would irrigate it within three years of filing claim. The law directed that a payment of 25 cents an acre was to be made at the time of filing, and of one dollar at the time of making proof of compliance with the law.

The measure had hardly been passed when the General Land Office recommended its repeal on the grounds that the law was vague respecting the amount of water the settler was to conduct upon the land, and therefore title might be obtained with very little irrigation. In 1884 the Commissioner of the General Land Office reported that public land was being entered at the rate of half a million to a million acres a year under the terms of this law, but only a few thousand acres were being finally patented. Large areas on which hay crops could be grown without any irrigation were taken up under this law. Stockmen were also holding vast quantities of valuable range or grazing land by desert entry. By paying the required 25 cents per acre, cattle barons were withholding the land from settlement for three years, and then they could still sell
their interest in it. Large bodies were also being withheld from settlement under this act for speculative purposes. The law not only failed to accomplish its stated purpose, but was actually used to prevent settlement by farmers. Although the General Land Office had annually recommended its repeal since 1878, Congress was not to take action in the matter until 1890.¹

In 1890 a law was passed that restricted agricultural desert entry to 320 acres per person. In 1891 Congress endeavored to further tighten restrictions by specifying that improvements to the amount of $3.00 per acre, at the rate of one dollar per year for three years, must be put upon the land towards its reclamation. The statute also stipulated that water must be available for the entire amount of land and that at least one-eighth must be put under cultivation. The law was liberalized to permit several persons to associate together in a common project to water their individual entries. In spite of these amendments, large scale fraud continued, and the Desert Land Act of 1877 was not to be repealed in its entirety until 1915.²

4. Stockmen and Grazing on the Public Lands

Prior to 1885, the greatest freedom had been allowed western stockmen in the use of the public lands both for free grazing and the free cutting of hay. By 1883, however, a considerable number of letters began to reach the Public Land Office in Washington, D.C., complaining that cattlemen were fencing off the public

¹Benjamin H. Hibbard, op.cit., 424-430; E. Louise Peffer, op.cit., 13-14, 18.
²Benjamin H. Hibbard, op.cit., 431-432.
domain with barbed wire to keep out settlers and rival stockmen. This fencing was a new addition to the stockmen's widespread use of every subterfuge and distortion of the federal land laws to gain ownership or control of large areas of public pasture land and water holes.

Illegal fencing became so general that Congress passed a law in 1885 making such enclosures a punishable offense. In 1886 President Cleveland ordered by proclamation the removal of all fences from the public lands. Secretary of the Interior L. Q. C. Lamar threatened immediate prosecution and pushed this campaign so vigorously that by 1890 the barbed wire fences on public land were generally gone. Thus while the public domain was once again a free common and open to all, this action also meant that there was now virtually no control exercised over the use of the land: the first comer was entitled to the grass. With no one responsible for control of the public pasture lands, over-grazing soon became a serious problem and resulted in a rapid destruction of forage on the public lands.¹

An examination of the operation of the federal legislation passed in the period 1864 to 1889, in regard to public domain, reveals that while Congress intended to assist the individual Western pioneer or settler in his efforts to obtain his small homestead, the net result was the institution of a great "give away"

program in which the richest portion of the public domain rapidly passed into the hands of large corporations: the cattle, sheep, lumber, mining, and railroad companies, and land speculators of the West.
Chapter V
Slow Headway, 1880-1888

1. The Landscape Architects and Niagara Falls

During the period 1880-1888, the landscape architects, led by Frederick Law Olmsted, continued their active demonstration of the "public park" idea. Olmsted's major projects included parks for Boston, Washington, D.C. (1880), Montreal (1881), Detroit (1882), San Francisco (1886), Buffalo (1887), and Rochester, N. Y. (1887). He also completed his work on the Arnold Arboretum at Harvard and, in 1884, actively participated in the campaign to preserve the Adirondack Mountains as a state forest preserve. Able young men, such as Charles Eliot, Jr. (1859-1897), served as apprentices under Olmsted, and entering the profession as landscape architects, made their own important contributions. In 1888, Olmsted undertook two new projects: First, he assisted Professor Charles Sprague Sargent of Harvard University in editing the new magazine Garden and Forest, and second, Olmsted began work on the preliminary plans for the development of George W. Vanderbilt's Biltmore Estate near Asheville, N. C. ¹

Horace William Shaler Cleveland also continued to expand the public park idea in the midwest in the eighties. In 1882 he published his pamphlet, The Culture and Management of our Native Forests; in 1886 he moved to Minneapolis, where his public park and

private work increased steadily. Here he advocated the development of a regional park system that would have embraced the cities of Minneapolis and St. Paul, but his ideas were too far in advance of his time for them to be accepted by public opinion.¹

But probably the most important contribution of the landscape architects in the eighties was the successful conclusion of their long campaign to preserve the scenic wonders of Niagara Falls. The beauty of these mighty falls had enchanted and inspired visitors since the 1820’s, but as early as 1843 Charles Dickens had complained that surroundings of the falls were ugly. After the establishment of the first water power plant in 1853, things rapidly went from bad to worse: mills were built along the water’s edge; outbuildings and refuge dumps cluttered up the scene and obstructed the view.

Frederick Law Olmsted first turned his attention to this situation in September, 1869, and, assisted by his friend Charles Eliot Norton, the influential editor of the Nation, launched a long drawn out battle to remedy the problem. The Niagara controversy was a classic example of the struggle between businessmen and industrialists who, inspired by the desire for profits and power, mined the natural resources without regard to aesthetic and other values, and the school of conservationists, who held with Marsh and Thoreau that in harnessing natural resources man must not arbitrarily upset the harmony of nature.

¹Dictionary of American Biography IV, 203-204.
The bitter debate raged for years and was carried from the state level to Congress and then to the international scene. World opinion was enlisted on the side of preservation, and finally, on July 15, 1885, the area around the falls on the United States side was placed under the care of the state of New York, as the New York State Reservation at Niagara, and that on the Canadian side was treated in a similar manner. In the words of Hans Huth, "The protection of this area from further desecration established a precedent; the importance of aesthetic values had been recognized and, in addition, the possibility of their coordination with the use and regulation of water power and similar business activities had been acknowledged."¹

2. The Foresters, 1880-1888: Hough and Fernow

In 1881 Franklin Benjamin Hough, the first United States Forestry Agent, received a new commission from Congress, together with a larger appropriation. Forestry was also organized as a separate office under a Commissioner of Agriculture in the Department of Agriculture. Hough now traveled to Europe, where he studied in particular the German system of forestry and forestry education. In the next two years he issued his second and third official reports, including the results of his investigations and facts on the whole range of forest products. These studies, printed by the

U. S. Government, aroused wide international interest and were awarded a diploma of honor at the International Geographical Congress held at Venice.

In October 1882 Hough published the first issue of the American Journal of Forestry, but the lack of subscribers forced him to abandon this project within a year. Also published in 1882 was his Elements of Forestry. In 1883, when Nathaniel H. Egleston was appointed Commissioner of Agriculture, Hough remained as Forestry Agent to complete the preparation of the fourth and final volume of his forestry reports, which was issued in 1884. Hough's final contribution was made in connection with the establishment of the New York Adirondack Forest Preserve in 1885. (This is discussed further in section four of this chapter). He died on June 11, 1885.

While not a professional forester, Hough's contribution to the Forestry movement in the United States, in introducing the subject, providing accurate data on the problem, and in educating public opinion towards a more conservative use of forest resources, was outstanding.1

Bernhard E. Fernow, the first professionally trained forester in the United States, had served as the manager of a large tract of land, located in Pennsylvania, from 1878 to 1885. In 1882 he was instrumental in reorganizing the American Forestry Congress (later

known as the American Forestry Association) and served as secretary of this organization for 12 years. In 1885 he was called into consultation to assist in drafting proposed legislation to establish the proposed Adirondack forest preserve in New York. In this work Fernow made one of the major contributions in the 19th century to the forestry movement. (This is discussed further in Section Four of this chapter). In 1886 he was appointed chief of the Division of Forestry in the United States Department of Agriculture, a position that he was to hold until 1898.

In this capacity he at once became a recognized leader of the forestry movement in the United States. Under his direction many important scientific investigations were made regarding the American forests, the life characteristics of different important species of trees, the qualities of the wood produced, and the economic consequences of forest destruction. Fernow vigorously attacked the neglect of the great forests located on the public domain and proposed specific legislative measures for their conservation, including the recommendation that a system of national forest reserves be established. He also promoted federal and state legislation to protect forests from fire, disease, and other adverse agencies.\(^1\)

3. **An Arboriculturist: Sargent, 1880-1888**

In 1880 Charles Sprague Sargent, Director of the newly created Arnold Arboretum at Harvard University, received an appointment as  

a Special Agent of the U.S. 10th Census. This position enabled him to travel widely through the forested regions of the United States and led to his collaboration with many of the best field botanists in the country. The results of his study were published as Volume IX of the 10th Census, entitled *Report on the Forests of North America* (1884). The book was the first complete synopsis made of the trees of North America and formed a splendid foundation for Sargent's future monumental work, *The Silva of North America*, that was to be published in 14 volumes between 1891 and 1902. As a member of the Northern Pacific Transcontinental Survey in 1882-1883, Sargent had further opportunity to travel in the Pacific Northwest and became impressed with the desirability of establishing national forest preserves on the public domain in the Western mountains. In 1884-1885, Sargent played a leading role in the establishment of the Adirondack Forest Preserve in New York State (this is further discussed in the next section of this chapter). From 1888 to 1897, Sargent, assisted by the landscape architect Frederick Law Olmsted, published and edited a weekly magazine, *Garden and Forest*, which helped to awaken a public interest in arboriculture, forestry, and parks in the United States.

By 1888, then, Sargent had not only established himself as one of the leading authorities on trees, but with Fernow, was regarded as one of the outstanding leaders of the American forestry movement.1

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4. The First Forest Preserve - The Adirondacks, 1885

The New York State Legislature, in 1874, had rejected a proposal of its Park Commission and Governor that the Adirondack Forest region be set aside as a "public park." In 1882 and 1883 Governor Alonzo E. Cornell renewed the proposal, but the legislature again chose to ignore the plan.

In the latter year, however, influential organizations of New York City, the New York City Chamber of Commerce, the New York Board of Trade and Transportation, and the Brooklyn Constitution Club, threw their powerful support behind the Adirondack plan. In 1884, a Senate committee reported that the state lands in the Adirondacks were more valuable than had been supposed and that the interest of the people required the protection and preservation of these forests. The legislature thereupon authorized the appointment of a new committee to outline a policy of state control for the forests.

The new commission was headed by Professor Charles Sprague Sargent, of the Arnold Arboretum at Harvard University. In March, 1885, the Sargent Commission presented definite recommendations for the management of state lands, together with a bill drawn by Franklin B. Hough designed to enact these proposals into law. Hough's bill, however, was considerably modified and amended by the legislature. Dr. Bernhard E. Fernow was then called into consultation, and he drafted a new bill that was passed by the legislature and signed into law by Governor David B. Hill on May 15, 1885.
This law authorized the establishment of a State Forest Commission, made up of three members who were to be appointed by the governor with the advice and consent of the Senate. The Forest Commission was given the authority and directed to employ a forest warden, forest inspectors, a clerk, and such agents as they deemed necessary, and also to fix their compensation.

The law established the State Forest Preserve in the following words: "All the lands now owned or which may hereafter be acquired by the State of New York, within the counties of Clinton (excepting the towns of Altoona and Dannemora), Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Saratoga, St. Lawrence, Warren, Washington, Greene, Ulster, and Sullivan, shall constitute and be known as the Forest Preserve. The lands now or hereafter constituting the Forest Preserve shall be forever kept as wild forest lands. They shall not be sold, nor shall they be leased or taken by any person or corporation, public or private."

The Forest Commission was to have the care, custody, control, and superintendence of the Forest Preserve and was directed by the law to maintain and protect the forest and to promote its growth.

The law also established a system of fire wardens and designated town supervisors to perform these functions where fire wardens were not appointed. The law provided that any person ordered to fight forest fires by a forest warden, supervisor, inspector, or any other authorized authority, and who refused, should be liable to punishment by law. The act also empowered the Forest Commission to bring action
in the name of the people for trespass or injuries to the preserve and to recover for damages to unlawfully occupied state lands. Fine and imprisonment penalties were established for the setting of fires in the Forest Preserve.

The law authorized the Forest Commission to take such measures as the Department of Public Instruction, the Regents, the Universities, and the Forestry Commissioners deemed necessary to awaken an interest in forestry in the public schools, academies, and colleges of the state, and to impart some degree of elementary instruction upon the subject of forestry. The law further directed the Forest Commission, as soon as practicable, to prepare circulars of information that would give plain and concise advice for the care of forests located on private lands as well as for the starting of new tree plantations upon lands denuded by cutting, eroded by droughts, or injured by fire. These publications, the law specified, were to be furnished without cost and were to be brought to the notice of all persons who might be benefited. For the administration of the law, the legislature made an initial appropriation of $15,000 in 1885.¹

While California, Colorado, and Ohio also each passed a law in 1885 authorizing the establishment of a State forestry agency, a month or two before the New York Act, the other state agencies did not endure, and their laws also lacked the constructive features

which distinguished the New York statute. The New York law can therefore be regarded as the first comprehensive legislative act in the United States to set aside and develop a public forest preserve. This act also antedated by six years the creation of the first federal forest preserves, and by 12 years the establishment of authority to administer effectively the federal forest preserves. The establishment of the large Adirondack Forest preserve thus met in part George F. Marsh's recommendation, made in 1874, "that some large and easily accessible region of American soil" should be set aside to "remain as far as possible in its primitive condition."

The New York law embodied excellent principles for preserving the forests, but legislation could not solve the problem of finding properly trained personnel to administer the law. The scope of this latter problem is revealed by that fact that Dr. Pernow was still the only professionally trained forester in the United States in 1885, and that there were no American schools teaching the profession of forestry.1

5. The Naturalists: Burroughs and Muir, 1880-1888

John Burroughs, residing at "Riverly", in the Catskill Mountains of New York, continued to pour out books on nature. In many ways his intellectual development paralleled that of the earlier Thoreau: after 1879, Burrough's original poetic view of nature changed, like Thoreau's, to an increasingly scientific view of the subject. But

1 Guth Whipple, op.cit., 80-81. The first professional foresters were hired in 1900, and they took full direction of the Preserve in 1908.
man, in harmony with nature, still continued to be Burrough's main concern in his writing.\(^1\)

John Muir married in 1880 and settled down on a ranch at Martinez, California. From 1881 to 1888 he wrote and traveled little, devoting his attention chiefly to winning a competence for his growing family. In 1881, however, he helped to draft two bills that were introduced in Congress in December of that year. One bill proposed the enlargement of the Yosemite Valley and Mariposa Big Tree State Park for the purpose of protecting this area by a second grant of additional federal land surrounding the original grant. The second bill called upon the Federal government to set aside as a "public park!, under federal administration, a large tract of forest land in the southern Sierra of California. This was the area that was later included within the boundaries of the Sequoia and Kings Canyon National Parks. Both proposals, however, failed to get out of committee in the U. S. Senate.

In 1887, after a long lapse, Muir again picked up his pen and agreed to contribute and edit two large volumes of nature studies that were to be known as *Picturesque California*. By 1888, then, Muir had largely completed his task of providing for the material well-being of his family and was ready to lead the American people on a new campaign to save the wilderness.\(^2\)

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Congress, in 1879, established the United States Geological Survey as a part of the United States Department of the Interior. The enabling act stated that the Director of the Geological Survey should "have the direction of the Geological Survey and the classification of the public resources and projects of the national domain"; also provided was an initial appropriation of $100,000.

A broad interpretation of the enabling powers, however, was rejected by the Director of the Geological Survey. In his first annual report, submitted in 1880, Director Clarence King wrote:

"I have assumed that Congress, in directing me to make a classification of the public lands, could not have intended to supersede the machinery of the Land Office and substitute a classification to be executed by another bureau of the government." The real intention of Congress, King concluded, was for the Geological Survey "to begin a rigid scientific classification of the lands of the national domain, not for purpose of aiding the machinery of the General Land Office by furnishing a basis of sale, but for the general information of the people of the country, and to produce a series of land maps which should show all these features which intelligent agriculturists, miners, engineers, and timbermen might, thereafter, base their operations and would obviously be of the highest value for all students of the political economy and resources of the United States."¹

This interpretation of the law and proper duties of the United States Geological Survey was to prevail until 1906, when a reappraisal of the basic authority was made.

With King's resignation at the end of 1880, Major John Wesley Powell succeeded him as director of the Geological Survey and held this office until 1894. The primary work of the Geological Survey, from 1879 to 1906, therefore, was largely limited to the preparation of thousands of topographical and geological maps and reports that were graphic engineering studies on the physical and cultural features of the areas they represented. These presented basic data useful in the study of drainage areas, the irrigability of lands, forest areas, grassland, and the agricultural lands; they were useful to both the advocates of conservation and the exponents of exploitation.

Congress, in the act of October 2, 1888, enlarged the original duties of the U.S. Geological Survey by directing it to make a "special investigation of the practicability of constructing reservoirs for the storage of water in the arid regions of the United States." The law provided that all public land susceptible of irrigation by such means should be withdrawn from all entry and settlement. The President of the United States, however, was also given authority to restore such land again to entry.1 Special appropriations were made for a time to support this new program.

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1 U.S. Statutes at Large, XXV, 527; Benjamin H. Hibbard, op.cit., 430, 505.
President Grover Cleveland, in 1889, favored the removal of all public land from the operations of the various federal land laws until the results of the surveys were available for study. "No harm can follow this cautionary conduct," he informed Congress, for "the land will remain, and the public good presents no demand for hasty disposition of national ownership and control." Congress, however, became alarmed over the rate at which President Cleveland was making segregations, and, on August 30, 1890, repealed the provision that made such action possible, except as it applied strictly to reservoir sites.¹

In 1888 there first appeared on the national scene one of the third generation of conservation leaders, Frederick Haynes Newell (1862-1923), who has been called the "father of irrigation" in the United States. This young engineer was appointed assistant hydraulic engineer for the U. S. Geological Survey on October 2, 1888.

Newell was born in 1862 at Bradford, Pennsylvania, and was raised at Newton, Massachusetts. He graduated from the Massachusetts Institute of Technology in 1885 as a mining engineer. After three years of work on mining surveys in Colorado and Pennsylvania, he joined the U. S. Geological Survey; in 1890 he was promoted to Chief Hydrographer, and from 1888 until 1902 he was to be in charge of stream measurements, selection and survey of reservoir sites, and the irrigation projects activities conducted by the Geological Survey in the arid West.²

²Dictionary of American Biography XII, 456-457; Samuel P. Hays, op.cit., 6-7; Benjamin H. Hibbard, op.cit., 473, 505.
7. **Wildlife and Conservation Groups, 1880-1888**

Efforts to protect wildlife as game continued to spread slowly on a state level in this period. The beginning of a state force of game protection in New York occurred in 1880, when the governor was authorized to appoint eight men as game and fish wardens. Minnesota established a state game warden position and Michigan a game and fish department in 1887.\(^1\)

The American Ornithologists' Union, organized in 1883, was the first national scientific organization to take an active interest in wildlife conservation, other than as game. Its committee on protection of birds drafted a "model law" which was adopted by New York State in 1886.

Three other organizations that were to support conservation causes were organized in New York City in this period: The New York State Forestry Association, established in 1885; the first Audubon Society in the United States, formed in 1886; and the Boone and Crockett Club, chartered in 1887.\(^2\)

On the federal level, the U. S. Biological Survey was established in 1885 in the Department of Agriculture for the purpose of gathering information and investigating the economic status, migration, and distribution of birds and mammals in the United States. The National Geographic Society was formed in Washington, D.C., in 1888.\(^3\)

\(^1\)Van Hise and Havemeyer, *op.cit.*, 396; Gurth Whipple, *op.cit.*, 107-108.

\(^2\)Van Hise and Havemeyer, *op.cit.*, 394; Gurth Whipple, *op.cit.*, 78.

Chapter VI
The Phalanx Forms, 1889 - 1900

1. Three New National Parks, 1889 - 1890

In 1889 there occurred a historic meeting at Yosemite between two men, John Muir and Robert Underwood Johnson, that was destined to have a decisive effect on the course of the Conservation Movement.

Johnson, an influential editor of the Century, was born in Washington, D.C., in 1863 and reared at Centerville, Indiana. In 1871 he graduated from Earlham College at Richmond, Indiana. He went to work in the Chicago agency of the educational books of Charles Scribner's Sons. This position led, in 1873, to a job as editorial clerk in New York City on Scribner's Monthly, a magazine soon to be renamed the Century. When Richard Watson Gilder became editor of the Century in 1881, Johnson became associate editor, a position that he was to hold until 1909. Johnson first became acquainted with John Muir in 1878, when Scribner's published some of the naturalist's articles, but Johnson had never met the man in person.¹

In 1889 Johnson arranged a meeting with Muir in California, and the naturalist took the editor on a pack trip through Yosemite Valley and the High Sierra. Johnson's interest in forestry and parks was aroused to the highest pitch by the beauty of the mountains and

¹ Dictionary of American Biography XII, Supplement 2, 348-349; Robert Underwood Johnson, Remembered Yesterdays (Boston, 1923).
Muir's impassioned plea for the preservation of this unique country. While camped at Soda Springs, in Tuolumne Meadows, the two men worked out a plan to protect the Yosemite Valley state park from the ravages it was undergoing from the invasion of thousands of sheep, or "hoofed locust" as Muir described them, by creating a large national park around the original Yosemite grant. Muir agreed to write two articles describing the wonders of Yosemite and proposing the creation of a national park; Johnson was to publish them in the Century and to use his considerable influence in Congress to forward a bill to effect this purpose. Both men kept their parts of the agreement. Muir's two articles, "The Treasures of Yosemite" and "Features of the Proposed Yosemite National Park," appeared in the Century Magazine for August and September, 1890. Muir also wrote articles and gave interviews for the California newspapers, urging the federal management of the watershed forests as a "perennial fountain of wealth as well as of beauty." Copied in part or in whole by the press of the nation, and accompanied by supporting editorials, Muir's articles aroused the public to action. Frederick Law Olmsted also threw his support behind the new Yosemite proposal and published his Governmental Preservation of Natural Scenery in 1890. The Yosemite bill was introduced in Congress in March, 1890, and by the summer of 1890 a host of letters, telegrams, and petitions poured into Washington from all over the nation supporting the measure. President Benjamin Harrison and Secretary of the Interior John W. Noble both endorsed the bill.
As a result of this support the bill became law on October 1, 1890, and about 2,000,000 acres of High Sierra country surrounding the Yosemite Valley grant, and including the Merced and Tuolumne groves of giant sequoias, were set aside "as a forest reservation" and as "reserved forest lands," under the control of the Secretary of the Interior. The Secretary was directed to make and publish rules and regulations providing "for the preservation from injury of all timber, mineral deposits, natural curiosities, or wonders within said reservation, and their retention in their natural condition." The Secretary was also "to provide against the wanton destruction of the fish and game found within said reservation, and against their capture or destruction for the purposes of merchandise or profit." The law also established the Fresno-Tulare Grove of Big Trees, which was subsequently named General Grant National Park by Secretary Noble.

Although Congress readily established two new national parks, it refused, until 1898, to vote any appropriations to administer and protect them. Secretary of the Interior John Noble, however, was equal to the occasion and, drawing on the precedent established since 1886 by the use of troops to protect Yellowstone National Park, arranged for the United States Army to guard Yosemite National Park. On May 19, 1891, detachments of the 4th United States Cavalry arrived in these two new national parks. For the next 23 years soldiers patrolled these reservations, keeping out thousands of invading sheep.

On July 28, 1890, a bill drawn up by four public-spirited Californians was introduced into Congress calling for the dedication and setting apart as "a public park, or pleasure ground, for the benefit and enjoyment of the people" of a tract of public land in Southern California for the purpose of preserving the giant sequoia.\(^1\) Also supported by Secretary Noble, and with little congressional debate, this bill became law on September 25, 1890. The Yosemite Act of October 1, 1890, immediately added land to this southern park as "reserved forest lands." Secretary Noble named the southern park "Sequoia National Park" and also dispatched units of the 4th United States cavalry to patrol this area in the spring of 1891.

The Johnson-Muir movement thus appears to have helped carry along the Sequoia Park proposal, and by the end of 1890 the nation had three new national parks, the first to be established since the creation of Yellowstone Park in 1872.\(^2\)

2. The First National Forest Reservations, 1891

For nearly 18 years the General Land Office of the United States Department of the Interior; Dr. Bernhard E. Fernow, Chief of the Division of Forestry in the United States Department of the Agriculture; and conservationists generally interested in forestry, such as Charles Sprague Sargent, John Muir, and Robert Underwood Johnson, had all urged the repeal of the notorious

\(^1\) Laws Relating to the National Park Service, 48-49.

Timber Culture Act of 1873, a law that had produced few trees but much fraud.

In 1890 a committee of the American Association for the Advancement of Science, with Thomas Cowan Mendenhall, Superintendent of the United States Coastal Geodetic Survey, as chairman, presented President Benjamin Harrison with a petition recommending that a commission of competent men be employed to "investigate the necessity of preserving certain parts of the present public forest as requisite for the maintenance of favorable water conditions."\textsuperscript{1} The petition further urged that "pending such investigation all timber lands of the United States be withdrawn from sale and provision be made to protect the said lands from theft and ravages by fire, and to supply in a rational manner the local needs of wood and lumber until a permanent system of forest administration be had."\textsuperscript{2}

President Harrison and his Secretary of the Interior, John W. Noble, both endorsed these proposals. Provisions of the bill to accomplish these ends were drafted by Edward A. Bowers, a special agent and inspector in the General Land Office, with the advice of

\textsuperscript{1}It is interesting to note that Charles S. Sargent, in his magazine Garden and Forest, in 1889, had suggested that the President of the United States should appoint such a commission to advise him on forestry matters.

\textsuperscript{2}Cited in Van Hise and Haveneyer, Conservation of our National Resources, 242; see also Benjamin H. Hibbard, History of the Public Land Policies, 530.
John Muir and Robert Underwood Johnson. Bowers' bill was attached as a "rider" to the Sundry Civil Bill and passed by Congress without debate.¹

The Act, signed into law by President Harrison on March 3, 1891, repealed the Timber Culture Act of March 13, 1873, and further provided: "That the President of the United States may, from time to time set apart and reserve, in any state or territory having public land bearing forests, in any part of the public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations, and the President shall by public proclamation, declare the establishment of said reservations and the limits thereof."²

This law established the principle of federal forest reservations and was later characterized by Gifford Pinchot as "the most important legislation in the history of Forestry in America."³ Of its effect in establishing a precedent that all of the public domain was not to be disposed of into private lands, thereby reversing the entire previous course of federal land policy, Benjamin H. Hibbard has remarked: "Without question the act permitting the withdrawal


²Cited in Benjamin H. Hibbard, op.cit., 530; Van Hise and Havemeyer op.cit., 242.

In 1890 Governor David B. Hill revived the idea of using the State Forest Preserve primarily for the pursuit of repose, recreation, and health, and urged the New York legislature to establish the Adirondack region as a public park. The press and interested associations strongly supported the governor's proposal.

The Adirondack Park was established by law on May 20, 1892. This Act provided for the sale and exchange of state-owned land outside the boundaries of the park and the expenditure of these proceeds for the purchase of privately owned land located within the park boundaries. The law also authorized the leasing of campsites within the park at rates ranging from $50.00 to $150.00 a year for five year periods. The act further declared that the land was to be forever reserved, maintained, and cared for as a ground open for the free use of the people for their health and pleasure and as a source of water and timber supply.

The park boundaries, in 1893, included an estimated 3,588,000 acres, of which about 2,807,000 acres were in solid forest. The state also owned about 180,000 acres of land located outside of the park. In 1893 and again in 1894, the Forestry Commission submitted a bill proposing the acquisition of land in the Catskill Mountains. In 1895 the state legislature responded by providing $600,000.00 for land acquisition purposes in both the Adirondacks and Catskills.

In 1893, the Forest Preserve and Park laws of 1885 and 1892 were repealed as separate entities and reenacted as Siamese twins. In 1894 a decisive campaign waged by the advocates of the park idea
resulted in the adoption of Article VII, Section 7, of the New York State Constitution. This article, which became effective on January 1, 1895, read "the lands of the State now owned or hereafter acquired constituting the Forest Preserve as now fixed by law, shall be forever kept as wild forest land. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."\(^1\)

By this law the public park ideal, with recreation as the primary purpose, prevailed, and all lumbering was banished from the Adirondack and Catskill preserves. In explaining this change in public opinion, Gurth Whipple suggests that public confidence in the state administration of the Forest Preserve as a source of timber had been shaken by the abuses perpetuated by the lumbermen and by weaknesses displayed by the State Forestry Commission in yielding to commercial and political pressures. In the opinion of conservationists and the public, the public park idea appeared to offer the best plan to preserve the forests in New York State.\(^2\)

4. **Pinchot, the First Professional American Forester, 1892-1896**

Gifford Pinchot (1865-1947), the son of a wealthy merchant and the first American to become a professional forester, was born

\(^1\)Cited Gurth Whipple, *Fifty Years of Conservation in New York State*, 68.

at Simsbury, Connecticut, in 1865. He graduated from Yale in 1889 and, encouraged by his father to take an interest in scientific forestry, turned for advice to Dr. Bernhard E. Fernow and Dr. Charles S. Sargent. Both men encouraged his interest, advised him to go to Europe to obtain his education in forestry, and warned him that it would probably be 20 years before commercial interests in the United States would be ready to accept sustained-yield principles for the management of forests.

In October, 1889, Pinchot went to Germany, where he put himself under the guidance of Dr. Detrich Brandis, one of the outstanding foresters of the era. On Dr. Brandis' advice, Pinchot entered the French Forest School at Nancy. After six months at this institution, he then accompanied Dr. Brandis on a tour of German and Swiss managed forests. Having completed a total of 13 months intensive study, Pinchot decided it was time to go home. Pinchot arrived in America in December, 1890, with an offer from Dr. Fernow of a position as Assistant Chief of the Forestry Division in the United States Department of Agriculture at a salary of $1,600.00 a year, and the suggestion that Pinchot would probably succeed Fernow in the position of Chief. Pinchot tentatively accepted this offer but delayed making his final decision for two years. When he finally turned down the position in January, 1892, Fernow was deeply offended. The break between the two men was complete, and mutual jealousy was henceforth intense.¹

¹M. Nelson McGeary, Gifford Pinchot: Forester - Politician, 19-28. A personality clash had developed between the two foresters when Pinchot accompanied Fernow on a field trip in 1891.
In 1891, while still undecided about accepting the government position, Pinchot obtained two assignments from the Phelps, Dodge Company. These involved examining and making recommendations for company-owned timber lands situated in Pennsylvania and in Arizona. Although his expenses were paid, Pinchot received no salary for this work. In the summer of 1891 Professor Charles S. Sargent introduced Pinchot to the landscape architect Frederick Law Olmsted, who had been working since 1888 on plans to develop George W. Vanderbilt's 7,000 acre Biltmore Estate, near Asheville, North Carolina, into one of the finest country estates in the nation. At Olmsted's suggestion, Vanderbilt hired Pinchot to supervise about 5,000 acres of Biltmore land as a demonstration area for practical forestry management; the estate also included a large arboretum and a game preserve. Pinchot's salary was set at $2,500 per year, plus subsistence and traveling expenses.

The young forester assumed his new duties with great enthusiasm in January, 1892, and for the next two years managed and enlarged the Vanderbilt forests to the satisfaction of both the owner and himself. In 1893 the Biltmore Forest put on an exhibit, prepared by Pinchot, at the Chicago World's Fair, showing by means of photographs the improvements of its forests and indicating that a profit had also been realized from these scientific operations. These duties did not take all of young Pinchot's time, and in December, 1893, he opened an office in New York City as "Consulting Forester," taking into partnership Henry S. Graves, a Yale graduate who was soon to become the second American-born trained forester.
By 1894 the operations on the Biltmore estate had become so large that Pinchot believed a resident forester was necessary; after consulting with Dr. Brandis, and because Graves had not yet completed his forestry studies in Europe, Pinchot imported Carl Alvin Schenck, a German professional forester, for this position. Schenck, aged 27, arrived in the United States on April 15, 1895, and took charge of the Biltmore forest operations.

Between 1892 and 1895 Pinchot became the first American-born professional forester, and launched the first scientific forest operations undertaken in the United States.¹

5. A Federal Forest Management Act, 1893-1897

As the year 1893 dawned, the future of conservation appeared bright: Grover Cleveland, the President-elect, and Boke Smith of Georgia, slated to be Secretary of the Interior, both informed Robert Underwood Johnson of their intention to support conservation causes. Johnson decided to marshal the forces and as the first step invited John Muir to visit the East. Muir made the journey in May, 1893, and guided by Johnson, met for the first time John Burroughs, Charles S. Sargent, the father of Gifford Pinchot, and many other Eastern celebrities. Johnson next led Muir to Washington, D. C., where the naturalist talked with Secretary Smith, Edward A. Bowers, and Dr. Bernhard E. Fernow about forest affairs in the West.²

In December, 1894, Charles S. Sargent called a meeting to which he invited Johnson, Gifford Pinchot, and Walter H. Page, editor of the Atlantic Monthly. Sargent suggested utilizing the plan that had worked successfully in 1890-91, namely that the President should appoint a commission to advise on the control and administration of public forests.\(^1\) In June, 1895, Sargent made a report to the National Academy of Sciences strongly recommending that many additional federal forest reserves should be established. For a while it appeared that Congress might appoint such a forest commission, but when the legislature failed to act, Sargent altered his tactics. The charter of the National Academy required that body to undertake the investigation of any subject in science or in the applied arts when so requested by the head of a federal department. After ascertaining that other members of the Academy were not averse to such an investigation, Sargent had Johnson intercede with the Secretary of the Interior to obtain the necessary request. Secretary Smith issued the desired letter on February 15, 1896, thereby creating a National Forest Commission, with Sargent as chairman and Pinchot (the only nonmember of the Academy) as Secretary. The other members included General Henry L. Abbot, of the U. S. Army Corps of Engineers; Alexander Agassiz; Dr. William H. Brewer of Yale; Arnold Hague of the U.S. Geological Survey; and Wolcott Gibbs, the president of the Academy.\(^2\)

\(^1\)M. Nelson McGeeary, Gifford Pinchot, 37; Robert Underwood Johnson, op. cit., 296-297.

\(^2\)M. Nelson McGeeary, op. cit., 38; Robert Underwood Johnson, op. cit., 297.
The Forest Commission served without compensation, but appropriations were needed to pay the expenses of necessary travel. Johnson was able to obtain $25,000 for this purpose from a hostile Congress. In the summer of 1896 the commission set out on its trip to examine the forests located on the public lands in the West. John Muir, at Sargent's request, joined the group at Chicago, in July, and the commission then made a thorough personal investigation of the forests of the Pacific Northwest and of the Pacific slope.¹

Returning to the East, Chairman Sargent assembled into a report the commission's findings and recommendations that had been worked out at many campfires; rough drafts were then sent to Muir for "ideas and inspiration."

As strong differences of opinion appeared among the members of the commission over how the forest preserves could best be administered and protected, a compromise had to be hammered out. Sargent, Muir, and Abbot favored army guardianship, as was used in the National Parks, as being more practical, efficient, and free from shifting political pressures. Pinchot, however, violently opposed this plan and urged the adoption of a civilian guard system, similar to that utilized in Germany. Pinchot also felt that the commissioners were "indifferent" if not "hostile" to the methods of practical forestry, even though the commission did not propose to

"lock up" the government forests from commercial use. In the interest of harmony the committee recommended military control only until such time as a duly authorized and organized forest bureau could be established in the U. S. Department of the Interior, with officers and men adequately trained, and subject to civil service regulation, to protect the reserves. Pinchot signed this compromise report only after the greatest hesitation. The other committee recommendations were as follows:

1. The creation of 13 new forest reservations distributed in eight western states.

2. The repeal or modification of timber and mining laws leading to fraud and robbery on the public forest lands.

3. The adoption of scientific management of federal forests to maintain a permanent timber supply.

4. The creation of two new national parks: the Grand Canyon in Arizona (this area had been set aside as a National Forest Reserve in 1893), and Mount Rainier in Washington, with adjacent areas.¹

President Cleveland was so favorably impressed by these recommendations, presented in an interim report, that on February 27, 1897 -- just 10 days before leaving office -- he created by presidential proclamation the 13 recommended forest reserves,

thereby withdrawing from the public domain 21,379,840 acres.
This action brought the total number of National Forest reserves
created since 1891 to 29, containing a total of 38,897,840 acres.¹

Western Congressmen, particularly those from the Pacific Northwest, rose in outrage at Cleveland’s action. There was much talk of inserting an amendment to the Sundry Civil Bill to nullify the President’s proclamation. President Cleveland stopped such plans by stating, "Well, if they do, I will veto the whole damned bill."²

The Forest Commission’s final report, presented to Congress and the new McKinley administration on May 1, 1897, pointed out that, under existing conditions, the United States was unable to protect its timber lands "because the sentiment of a majority of the people in the public land States with regard to the public domain, which they consider the exclusive property of the people of those States and Territories, does not sustain the Government in its efforts to protect its own property; juries, when rare indictments can be obtained, almost invariably failing to convict depredators."³


²Robert Underwood Johnson, Remembered Yesterday, 299-300.

³Forest Policy for the Forested Lands of the United States, 55th Congress, 1st Session (1897), Senate Document 105, 33-34.
They further reported, "Civil employees often selected for political reasons and retained in office by political favor, insufficiently paid and without security in their tenure of office, have proven unable to cope with the difficulties of protecting timber. . ." 1

Finally, the commission noted that "a study of the forest reserves in their relation to the general development and welfare of the country, shows that the segregations of these great bodies of reserved lands cannot be withdrawn from all occupation and use, and that they must be made to perform their part in the economy of the nation." 2

Congress, torn between a militant and well organized sentiment in the East in favor of forest reservation and an irate West fighting against every withdrawal, was divided on the forestry question. These conflicting views were reflected in the Sundry Civil Appropriation Act of June 4, 1897.

This, also known as the Forest Management Act, reaffirmed the power of the President to create reserves, confirmed all the reservations made prior to the year 1897, but limited the type of lands to be reserved in the future, stating: "No public forest reservation shall be established except to improve and protect the forests within the reservations, or for the purpose of securing

1 Ibid., 23.
2 Ibid., 22.
"favorable conditions of water flow, and to furnish a con-
tinuous supply of timber for the use and necessity of the United
States, but it is not the purpose or intent of this provision, or
of the act providing for such reservation, to authorize the inclu-
sion therein of lands more valuable for the mineral therein, or for
agricultural purposes, than for forests."

The law granted the basic authority necessary for the federal
government to administer the timber and other resources on these
reservations. Included were the power to regulate the occupancy
and use of the forests as well as for the protection and sale of
timber under proper restrictions.¹

In an effort to appease the West, however, the same law also
suspended the effect of Cleveland's Executive Order of February 22,
1897, until March 1, 1898. This meant that the 13 large forest
reservations established by Cleveland were unprotected until 1898.
Secretary of the Interior C. N. Bliss immediately declared all of
the new reservations, except those located in California, as open
to "settlement." This order was followed by a Western stampede to
file claims upon forest reserve land.

In the open battle now joined between the forces of conservation
and exploitation, John Muir probably found his greatest opportunity
for public service. The Atlantic Monthly and Harper's Weekly now
joined the Century in the fight for conservation, and at Sargent's

¹U. S. Statutes at Large XXX, 11, 34-36, Samuel P. Hays, Conserv-
vation and the Gospel of Efficiency, 44.
suggestion, the newcomers turned to Muir for ammunition in the struggle. In two brilliant articles, one in Harper's Weekly (June 5, 1897), entitled "Forest Reservations and the National Parks," and the other in Atlantic Monthly (August, 1897), entitled "The American Forests," Muir went over the heads of Congress and directly to the people. In impassioned oratory the naturalist preached the sacred duty of so using the country that present generations would not leave it ravished by greed and ignorance to those who follow, but would pass it on undiminished in richness and beauty. His two articles probably turned the tide of public sentiment.¹

Pinchot also entered into the battle to save the 13 reservations. In June, 1897, after the Forest Management Act had been passed, Pinchot accepted the position of "special forest agent" in the U. S. Department of the Interior and traveled widely during the summer and fall of 1897, urging the preservation of the 13 forest preserves and also surveying the existing reserves.

Professor Sargent, however, chose to interpret Pinchot's acceptance of an official position in the U. S. Government at this particular time as an expression of bad faith, stating that Pinchot was utilizing his new job to urge his own ideas on forestry rather than those presented in the National Forest Commission Report.

Both men referred their quarrel to Dr. Brandis. The German forester pleaded with Pinchot to patch up the break, stressing that Sargent had "fought the battle of Forestry" in America for over 20 years. Assuring Pinchot that he believed Sargent to be wrong in his interpretation of Pinchot's action, Brandis nevertheless informed the young forester that "the appearances ... are against you."

When Pinchot then made a slight gesture of reconciliation, Sargent curtly replied that as their standards of conduct were so different, it was useless to discuss the subject further. The breach between these two proud men was final.¹

On arriving in Seattle in August, 1897, John Muir learned that Special Forestry Agent Pinchot had just informed the stockmen of Washington that sheep grazing in forest reserves did little damage. Muir immediately confronted Pinchot with the newspaper account of the forester's speech, and Pinchot conceded that he was correctly quoted. Muir then replied, "I don't want anything more to do with you. When we were in the Cascades last summer you yourself stated that the sheep did a great deal of harm." Pinchot's public statement was apparently made in an effort to reduce the hostility of powerful western livestock interests to the reserves.²

¹M. Nelson McGeary, Gifford Pinchot, 41-43.

²Linnie M. Wolfe, op. cit., 275-77. In Muir's second Atlantic article, "Wild Parks and Forest Reservations of the West," published in January, 1898, he publicly attacked what he regarded to be the purely utilitarian concept of conservation held by Pinchot.
These quarrels did not reach the public, but by the end of 1897 young Pinchot had broken completely with the three men of the older generation who had done the most to advance and establish the principles of forestry in the United States.

The fight to preserve the 13 forest reserves continued, and the margin of victory was to be close. In March, 1898, the Senate actually passed an amendment to the Sundry Civil Bill to abolish all forest reserves, but the struggle in the House was another matter. Here the campaign against the Senate amendment was directed by Representative John Fletcher Lacey,¹ Chairman of the Public Lands Commission; and the Senate proposal was rejected by a vote of 100 to 39. The National forest reservations system was thereby saved, and the Cleveland reservations were again closed to settlement.²

6. National Forests Reservations and National Parks, 1898-1900

The National Forest Commission had recommended the establishment of a bureau of forestry in the Department of the Interior.

¹John Fletcher Lacey (1841-1913), soldier, lawyer, Congressman, and conservationist, was born in 1841 in a one-room log cabin on the Ohio River near New Martinsville in what is now West Virginia. At the age of 14 his family moved to a farm near Oskaloosa, Iowa, where he lived for six years. After serving in the Union Army during the Civil War, he studied law and was admitted to the bar in Iowa. He began his public career in the Iowa General Assembly in 1869. From 1889 to 1907, with the exception of the years 1891-93, he was a member of the U.S. House of Representatives. An ardent student of Indian affairs, public lands, and forestry, he was one of the early conservationists, and as the powerful chairman of the House Committee on forests and public lands, Lacey was to frame much of the legislation of this period on the preservation of forests and wildlife. Dictionary of American Biography, X, 519-520.

and the law of 1897 gave the Secretary of the Interior broad powers to administer the forests. At Secretary Bliss' request, Special Forestry Agent Pinchot prepared a plan for the organization of such a forestry bureau in the Interior Department.\(^1\) Pinchot was also under the impression that if Congress appropriated the necessary funds for the new bureau, Secretary of Interior Bliss would place him in charge of this work. Congress, however, failed to vote money for this purpose, and the national forest reserves were left, as in the past, in the charge of the General Land Office, an agency that had no trained foresters on its staff.\(^2\)

President McKinley further increased the national forest reserves by setting aside an additional 7,050,089 acres.\(^3\)

On March 2, 1899, the fifth national park, "dedicated and set apart as a public park, to be known and designated as the 'Mount Rainier National Park,' for the benefit and enjoyment of the people" was established.\(^4\) Congress, however, refused to make any direct appropriation for the park until 1906 and also prohibited the Secretary of the Interior from using Army troops to patrol it.\(^5\)

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\(^1\) The report is included in Senate Document 189, 55th Congress, 2d Sess.

\(^2\) M. Nelson McGeary, Gifford Pinchot, 43-44.

\(^3\) Benjamin H. Hibbard, History of the Public Land Policies, 531.

\(^4\) Laws Relating to the National Park Service, 102.

\(^5\) John Ise, Our National Park Policy, 120-123
Dr. Bernhard E. Fernow resigned as Chief of the Division of Forestry in the United States Department of Agriculture in 1898, and on July 1 of that year Gifford Pinchot, at the age of 32, succeeded him with the special title of "Forester." Pinchot threw himself into his new responsibility with great energy and enthusiasm. His staff of 11 in 1898 was increased to 115 by 1901; so many of his men were drawn from Yale University that this division was often referred to as the "Yale Club." Although his agency did not control any government forests, his division, at the request of the Secretary of the Interior, provided technical advice to the Department of the Interior for the management of the national forest reserves. Pinchot radically changed his division's emphasis from scientific studies of forests to a campaign designed to educate the private forest industry and the public in general about the practical benefits that could be realized from scientific forest management. He offered the services of federal foresters to help owners draw up management plans for private forest lands. In this program he was eminently successful; large timber companies soon swamped the Division of Forestry with requests for aid.\(^1\)

\(^1\)The first example in the United States, where the practice of forestry was put into effect on privately owned forest lands under a forest management plan prepared by technically trained federal foresters, was the work inaugurated at Ne-ha-sa-nee, on the property of W. Seward Webb, in New York State. Gurth Whipple, Fifty Years of Conservation in New York State, 82. This initial plan was prepared by Henry S. Graves.
By 1905 owners of some three million acres, including the largest timber owners in the country, had applied for federal assistance. Reflecting the success and importance of Pinchot's work, his division was promoted to the Bureau of Forestry on July 1, 1900.  

8. The First American Forestry Schools, 1898-1913

Dr. Bernhard E. Fernow, having resigned as head of the U. S. Forestry Division, proceeded to organize the first collegiate school of forestry in the United States at Cornell University in 1898. The New York State legislature, on March 26, 1898, authorized the establishment of a four-year undergraduate course at Cornell and appropriated $10,000.00 for this purpose. Actual instruction began on September 28, 1898, with four students in attendance the first year and 15 the second. The faculty was comprised of two men, Dr. Fernow and Mr. Filbert. Roth. The Cornell school was endowed with 30,000 acres of state forest land located in the vicinity of Axton, New York (immediately south of Upper Saranac Lake). The school built its first forest tree nurseries at Axton in 1898 and the following year set out its first tree plantations.

In 1903 a small but highly influential group of adjoining property owners violently opposed the timber cutting practices used on the college forest. Claiming that their forest properties were being greatly depreciated, these wealthy men used their

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influence to have the governor veto the college's appropriation for the 1903-04 fiscal year. This one blow compelled the young, vigorous, and promising College of Forestry at Cornell to close its doors after only five years of operation.

The tree nurseries were taken over by the State Forestry Commission, and the Axton Forest became a part of the Adirondack State Park. New York State resumed its forestry education in 1910 with the establishment of the Department of Forestry at the State College of Agriculture at Ithaca, and in 1911 the College of Forestry was organized at Syracuse University.

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1 With the closing of the Cornell School, Dr. Fernow engaged in a private forest consulting practice and also gave lecture courses at the Yale School of Forestry in 1904. In 1906 he inaugurated the work of forestry at Pennsylvania State College. In 1907 he organized and administered until his retirement in 1919, a department of forestry at the University of Toronto, Canada. In 1902 Dr. Fernow was responsible for the establishment of the Forestry Quarterly, the organ of the Society of American Foresters, and was editor of that publication and its successor, the Journal of Forestry, until 1922. He died in 1923. Dictionary of American Biography, VI, 336-337; Andrew Denny Rogers, Bernhard Eduard Fernow: a Story of North American Forestry (Princeton, 1951).

On September 1, 1898, Dr. Carl Alvin Schenck, a professionally trained German forester, opened the Biltmore Forest School on the Vanderbilt estate near Asheville, North Carolina. This school, the first private forest school in the United States, offered a 12-month course in forestry. The annual enrollment reached its peak in 1910, with 60 students in attendance. In the fall of 1913, after 15 years of extremely successful work, Dr. Schenck closed his school.¹

The Yale Forest School, established under the sponsorship of Gifford Pinchot, opened its doors at Yale University in the fall of 1900. This school was the first in the United States to offer graduate work in forestry. The Pinchot family contributed some $150,000 towards the development of this school. Henry Solon Graves resigned from the U. S. Bureau of Forestry to become the first dean of the Yale Forestry School. The student body increased from seven in 1900, to 44 in 1902, and to 85 by 1910.²

By 1914 a total of 24 schools of forestry had been established in 19 states.³

9. **Wild Life and Conservation Groups, 1890-1900**

This period saw the formation of the following groups that were to play an important role in the field of conservations: The Adirondack


³Armstrong and Kranz, *op. cit.*, 328-330, has a list of the early forestry schools.
Park Association in New York, formed in 1890; Trustees for Public Reservations in Massachusetts, 1891; the Sierra Club, the first western conservation group, organized by John Muir in California in 1892 at the suggestion of the editor Robert Underwood Johnson; the American Scenic and Historic Preservation Society, 1895; The New York Zoological Society, 1895; the American Park and Outdoor Arts Society, 1897; the League of North American Sportmen, 1898; the North American Fish and Game Protective Association, 1900; the Association for the Protection of the Adirondacks, in New York, 1900; the Society for the Preservation of Historical and Scenic Spots, 1900; and the Society of American Foresters, organized by Gifford Pinchot in 1900.¹

Secretary of the Interior Carl Schurz, alarmed over the hunters' decimation of many large animals in Yellowstone National Park, prohibited the killing of all game in the park in 1880, but the lack of Congressional appropriations for the park prevented the effective enforcement of these regulations. In 1886, Secretary of the Interior L. Q. C. Lamar, acting under authority granted by Congress in 1883, placed troops in Yellowstone National Park for the purpose of protecting it, and the soldiers remained to carry out this duty until 1918.

The flagrant slaughter of buffalo in Yellowstone, however, continued and public indignation was aroused only after several such incidents were written up by Emerson Hough and published by George Bird Grinnell in his *Forest and Stream* in March, 1894. Representative John F. Lacey of Iowa at once introduced a bill in the House that was quickly passed and signed into law by President Cleveland on May 7, 1894.1

Entitled "An Act to protect the Birds and Animals in Yellowstone National Park", this statute made the federal park a part of the United States judicial district of Wyoming, and the laws of Wyoming were to govern except where the laws of the United States were applicable. The 1894 act established a complete schedule of punishments for various offenses, and stated, "all hunting, or the killing, wounding or capturing at any time of any bird or wild animal, except dangerous animals, when it is necessary to prevent them from destroying human life . . . , is prohibited within the limits of said park." Fishing was also restricted to hook and line, and only at such season and time and manner as was to be directed by the Secretary of the Interior.2 The Yellowstone Act of 1894 was the first federal legislation passed to protect wildlife.3

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2 Laws Relating to the National Park Service (1933), 30-31.

The ineffectiveness of state legislation in preventing market hunting and the interstate transportation and sale of game became fully apparent in this period. Conservationists and hunters alike united to support federal legislation intended to correct abuses that threatened the extinction of all game. Here again, Representative John F. Lacey introduced the desired bill. The Lacey Act of May 15, 1900, was the first general federal game law. The statute prohibited the shipment by common carrier, from one state to another, of the dead bodies of wild animals or birds that had been illegally killed in a state, or that were shipped from a state contrary to state law. The Lacey act gave the U. S. Biological Survey of the Department of Agriculture jurisdiction over the matters relating to game and also over the importation of wild animals and birds from other countries. Under the provisions of the Lacey act, the Biological Survey, led by its director, C. Hart Merriam, was able to accomplish much in stopping the illicit interstate traffic in wild animals and birds.¹

10. Irrigation and Reclamation, 1890-1900

In 1888 Congress had authorized the first water resources investigation of the arid lands of the west. These studies were made for the purpose of determining which were capable of irrigation and for the segregation from sale and settlement of the land judged

¹Van Rise and Havemeyer, Conservation of our Natural Resources, 397, 451-452; Samuel P. Hays, Conservation and the Gospel of Efficiency, 189.
to be irrigable. This work, since 1888, had been headed by Frederick Haynes Newell, the chief hydrographer of the U. S. Geological Survey.

By 1890, however, Congress had lost interest in this project, largely because western opinion itself was divided on the best means to secure irrigation. Three competing camps had formed: those favoring irrigation by private enterprise, those supporting state sponsored projects, and those urging federally supported programs.

In the irrigation congress held at Salt Lake City in 1891 a majority of the delegates voted in favor of the federal government ceding the irrigable public land to the states for the settlers to irrigate. The second irrigation congress, held in 1893, reaffirmed this position. Congress also ordered an investigation of the irrigation question. The fullest report, made by Richard J. Hinton for the Department of Agriculture, supported the majority view of the two irrigation congresses.¹

In response to this concensus of western opinion, Congress passed the Carey act of August 18, 1894, so named in honor of Senator Joseph M. Carey of Wyoming, the chairman of the Senate Public Lands Committee.² Under this law the federal government agreed to donate to certain western states a quantity of arid


²Benjamin H. Hibbard, History of the Public Land Policies, 434-436.
public land -- not to exceed 1,000,000 acres to each state, if
the states would cause this land to be settled, irrigated, and,
至少 in part, cultivated. To states successfully complying
with these terms the federal government was to grant patents for
the land either to the state or directly to the assignees of the
state. The law did not specify whether the state was expected to
do the work of installing irrigation systems or whether they should
contract with private parties for this work, but the privilege of
the latter plan was conferred, and often followed in many cases.
States were forbidden to lease these lands or dispose of them in
any way, except so as to secure their reclamation, cultivation,
and settlement. States could also sell only 160 acres to any one
person.

The Carey Act was accepted by 12 of the Western states, and
work was energetically begun, particularly in Wyoming. Most of
these enterprises, however, resulted in disappointment, losses,
and even suffering to the purchasers of the land. One primary
reason for this situation was that the state officials, elected
solely for political reasons and not required to possess the
necessary ability or interest in reclamation, generally could not
take the time nor display the farsighted business ability needed
to make a success of this difficult engineering operation. Second,
the private corporations formed to irrigate and sell the arid lands
were usually speculative in their real aim; there was no difficulty
in selling the land, but when it came to financing, planning, and building the large scale works required, the corporation leaders also usually lacked the necessary training and knowledge, and were unable to deliver the water to the land. Many of these deficiencies were not realized until after large investments in time and money had already been made in improvements, houses, and farm buildings.

By 1901, seven years later, not all of the eligible states had taken advantage of the Carey Act. Applications had been made for only 950,000 acres out of a total of 12,000,000 available, and only 7,640 acres had been patented out of the 241,251 acres for which applications had been approved.

Even before the failure of the Carey act was fully demonstrated, advocates of federally sponsored irrigation, led by Frederick Newell and the young California lawyer, George H. Maxwell, were spearheading a new campaign to achieve this end.

Maxwell led the supporters of federally supported projects to victory in the 1896 convention of the national irrigation congress. Early in 1898, to gain the necessary nation-wide support, he set out to convince the eastern commercial and industrial interests that they should also back federally sponsored irrigation in the West.

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2 George H. Maxwell was a native of Sonoma, California. He was admitted to the bar in 1882 and became a specialist in California water law.
As a part of the campaign to obtain eastern support, Newell and Maxwell joined the forest conservation movement that was so powerful in the Atlantic States.\(^1\) By the end of 1898 Maxwell had obtained the endorsement of the National Board of Trade, the National Business Men's League, and the National Association of Manufacturers. In 1899 he organized the National Irrigation Association, with headquarters located at Chicago, and here he conducted an intensive educational campaign, distributing "literature" to the newspapers and publishing his own periodical, Maxwell's Talisman. By 1900 Maxwell and Newell had convinced the National Irrigation Congress and the West generally that if it were to have successful irrigation, the federal government would have to sponsor it.\(^2\) So successful were their efforts that both major political parties adopted planks in favor of federal irrigation in their presidential campaign platforms for 1900.\(^3\) Federal reclamation appeared to be finally poised on the verge of success.

\(^1\) Newell had been a member of the American Forestry Association since 1889 and in 1897 became corresponding secretary of the Association, see Samuel E. Hays, Conservation and the Gospel of Efficiency, 22-26 and E. Louise Peffer, The Closing of the Public Domain, 21.

\(^2\) Samuel P. Hays, op. cit., 10-11.

\(^3\) E. Louise Peffer, op. cit., 22.
Chapter VII

The Roosevelt-Pinchot Era, 1901-1909

1. Inception and Philosophy of the Roosevelt Conservation Movement

On September 6, 1901, President William McKinley was fatally wounded by an assassin; eight days later Vice-President Theodore Roosevelt assumed the Presidency. Immediately after the new President's arrival in Washington, Frederick Baynes Newell and Gifford Pinchot called upon Roosevelt and laid before him "their plans for national irrigation of the arid lands of the West, and for the consolidation of the forest work of the government in the Bureau of Forestry."\(^1\)

Newell and Pinchot were to become the chief advisers of the President in matters of conservation; indeed, although technically only the chief of a bureau, Pinchot, through his strong personal friendship with the President and as a member of Roosevelt's intimate circle of advisors known as the "Tennis Cabinet", was in reality to combine many of the functions and powers of the Secretary of the Interior and the Secretary of Agriculture during the next eight-year period.\(^2\) A brief glance at the philosophy held by this


\(^2\) This was particularly true of the period 1907-1909, when James R. Garfield, who agreed completely with Pinchot's views on conservation, served as Secretary of the Interior. Ethan Allen Hitchcock, Secretary of the Interior, 1901-1907, refused to support all aspects of Pinchot's program. James Wilson, who served as Secretary of Agriculture from 1901 to 1909, gave Pinchot wide authority and a free hand. See Samuel P. Hayes, Conservation and the Gospel of Efficiency, 40, 56-57, 61, 72-73, 76, 192.
new generation of conservationists that came to power in 1901 is therefore pertinent.

Thoreau, Marsh, and Olmsted, the early philosophers of Conservation, and their disciples, Fernow, Muir and Sargent, had advocated a broad program that included both the humanitarian (recreation, health, preservation of beauty and scenic splendor) and the utilitarian (sustained-yield forest management and protection of water supplies) points of view. When conflicts of interest occurred over whether humanitarian or utilitarian programs of conservation were to prevail in the use of a particular area, this early generation had generally given humanitarian values the first priority.

In contrast to this view, Newell and Pinchot were devotees of what Samuel P. Hays had aptly called the "gospel of efficiency." The use of land and natural resources was important only in so far as it served the needs of machine, industry and the production of commercial wealth, i.e., conversion into money. Use of land and resources for the direct benefit of mankind as human beings, they believed, must take second priority to utilitarian purposes. As Hays has expressed it, "the apostles of the gospel of efficiency subordinated the aesthetic to the utilitarian. Preservation of natural scenery and historic sites, in their scheme of things, remained subordinate to increasing industrial productivity."¹

¹Samuel P. Hays, op. cit., 127; Hays has a brilliant chapter on this subject, see pages 123-133.
Newell and Pinchot never entertained any doubts, such as those expressed by Thoreau, of the social value of many products of this industrial process. Pinchot thus informed the Society of American Foresters in 1903: "The object of our forest policy is not to preserve forests because they are beautiful... or because they are refuges for the wild creatures of the wilderness... but... the making of prosperous homes... Every other consideration comes as secondary."¹

"Conservation," as defined by Pinchot in 1910, stood for three principles: (1) The "development of our natural resources and the fullest use of them for the present generation"; (2) the "prevention of waste"; and (3) the development and preservation of resources "for the benefit of the many, and not merely for the profit of a few."² In his crusading zeal for his own principles and his uncompromising attitude towards all contrary points of view, Gifford Pinchot was to finally split asunder the united front that had been formed by the older generation of conservationists.

While saying little publicly on the matter, as he needed their support for his policies, the great forester was to consistently use his far reaching power and influence privately within the government to oppose the plans of the preservationists, whom he derided as "nature lovers." Pinchot was thus the silent but


consistent foe of parks and wildlife, whenever, in his opinion, these preserves possessed a potential for "higher" industrial or commercial use.¹

As one corollary of their faith in industrial processes and scientific methods, both Newell and Pinchot were strong advocates of the use of experts to eliminate waste and inefficiency from government and the field of natural resources. In this they were paralleling the course that had already been adopted by the great industries of the United States, which were using scientific management to promote efficiency in their plant operations. President Roosevelt enthusiastically endorsed Newell and Pinchot's suggestions in this field. In the words of Hays: "Social and economic problems, Roosevelt believed, should be solved, not through power politics, but by experts who would undertake scientific investigations and devise workable solutions. He had an almost unlimited faith in applied science. During his presidency, he repeatedly sought the advice of expert commissions, especially in the field of resource policy, and he looked upon the conservation movement as an attempt to apply this knowledge."²

As a second corollary of their belief in the desirability of efficiency, Newell, Pinchot, and Secretary of Interior James R. Garfield gradually evolved a theory that the President of


²Samuel P. Hays, op. cit., 267.
the United States has a moral duty and responsibility to protect the public resources of the nation wherever possible. As accepted and exercised by President Theodore Roosevelt, the executive was considered generally to be dutybound to take positive steps for the public good, if not specifically prohibited by the Constitution or by law. Under the doctrine of moral stewardship, using the "supervisory power of the executive" as the legal justification, it was held that the President could withdraw public lands from entry to make certain that they would not be acquired wrongfully, and to give Congress time to pass protective laws. By exercising such broad executive powers Roosevelt endeavored to overcome what he believed to be Congress' inability to act efficiently on important public matters.\(^1\)

While much of the Roosevelt conservation program had highly utilitarian overtones, the President was not completely dominated by this point of view. Roosevelt was a competent naturalist in his own right, and also an enthusiastic sportsman. Thus the "preservationist" conservationists, in spite of Pinchot's opposition, were often able to make significant advances during the Roosevelt-Pinchot years.\(^2\) At Roosevelt's suggestion, in October 1901, C. Hart Merriam, Chief of the U. S. Biological Survey, informed his friend John Muir:


\(^2\)Samuel P. Hays, op. cit., 189-190; see Paul Russell Cutright, Theodore Roosevelt the Naturalist (New York, 1956).
"The President is heartily with us in the matter of preserving the forests and keeping out the sheep. He wants to know the facts . . . from men like yourself who are not connected with the government service and, at the same time, are known and esteemed by the people."¹ Muir replied at once, stating the situation as he had observed it and further urging that the management of the national forest reserves be vested in a Bureau of Forestry in the U. S. Department of Agriculture.²

In his first annual message, delivered to Congress on December 3, 1901, and written chiefly by Newell and Pinchot, President Roosevelt stated: "The wise administration of the forest reserves will be not less helpful to the interests which depend on wood and grass. The water supply itself depends upon the forest. In the arid region, it is water, not land, which measures production. The western half of the United States would sustain a population greater than that of our whole country today if the waters that now run to waste were saved and used for irrigation. The forest and water problems are perhaps the most vital internal questions of the United States." He called for the protection of the forest reserves against fire and livestock and recommended the creation of a Bureau of Forestry in the Department of Agriculture to manage the National Forest reserves.³

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²Ibid.
2. Federal Reclamation, 1902-1914

In his first annual message to Congress, President Theodore Roosevelt wrote: "The pioneer settlers on the arid public domain chose their homes along streams from which they could themselves divert the water to reclaim their holdings. Such opportunities are practically gone. There remain, however, vast areas of public land which can be made available for homestead settlement, but only by reservoirs and mainline canals impracticable for private enterprise. These irrigated works", the President recommended, "should be built by the National Government."

Several irrigation bills were introduced early in the first session of the 57th Congress. The one selected for serious consideration was that submitted late in the previous Congress by Representative Francis G. Newlands of Nevada.¹ The Newlands bill was supported by both major political parties and was signed into law by President Roosevelt on June 17, 1902.

¹Francis G. Newlands was born in Mississippi in 1848, graduated from Yale and Columbia, and went to California to practice law in 1870. In 1889 he moved to Nevada to manage the great silver mines of his late father-in-law, Senator William Sharon. From 1892 to 1903, Newlands served in the U. S. House of Representatives and from 1903 until his death in 1919, was a U. S. Senator from Nevada. Newlands had been a strong advocate of federal irrigation since 1891. Samuel P. Hays, Conservation and the Gospel of Efficiency, 11-14; see also A. B. Darling, editor, The Public Papers of Francis G. Newlands (2 vols., New York, 1932).
The Reclamation (or Newlands) Act provided that the federal
government would set aside a portion of the money received from
the sale of public land for a "reclamation fund," under the
administration of the Secretary of the Interior, to be used in
developing federal irrigation projects. The settler, to be
crivable, agreed to repay "the cost of construction of the project"
in 10 annual interest-free installments. The money so paid was to
remain a part of the "reclamation fund" and could be used to finance
new projects until Congress ordered otherwise. In order to receive
a patent, the law stated that the settler had to reclaim at least
one-half of the total irrigable area of his entry, and also meet
the requirements of the Homestead Act as to residence, which under
these circumstances was three years. In the event that water was
not made available as scheduled, the entryman could be granted a
leave of absence until such time as water could be provided. The
Reclamation Act permitted the sale of water rights to private land
owners, but in no case to non-residents or in amounts greater than
for 160 acres to an individual.¹

In order to expedite federal irrigation projects, Congress also
provided an initial sum of $20,000,000 for the reclamation fund, but
this working capital was not actually drawn on until 1907.

¹U. S. Statutes at Large XXXVII, 265; Van Hise and Havemeyer,
Conservation of Our Natural Resources, 156-157; Benjamin H. Hibbard,
History of the Public Land Policies, 442-443; E. Louise Peffer,
Closing the Public Domain, 33, 38-44.
President Roosevelt made the Reclamation Service, created as a new branch of the U. S. Geological Survey in the Department of the Interior, responsible for the administration of the Newlands Act, and appointed Frederick H. Newell as director of the Reclamation Service. In 1907 the Service was promoted to an independent bureau, directly under the Secretary of the Interior.\textsuperscript{1}

The concept contained in the Newlands Act, that the reclamation fund should be utilized only to bring water to land in federal ownership, was quickly abandoned, for it was soon discovered that although many millions of acres of arid land remained in the public domain, the most desirable areas had been picked over and selected, to such an extent that the remaining public acres which could be economically irrigated in compact bodies had virtually vanished. The utilitarian conservationists thereupon applied their doctrine of the broad interpretation of law for the first time, and discovered that the Reclamation Act was sufficiently "elastic" to permit the reclamation of privately owned lands situated within a federal project, even though only a small percentage of the federally owned lands was reclaimed.

As Frederick H. Newell expressed it at a later date: "Thus it happened that after the first few enterprises were undertaken, the majority of the lands included in the reclamation projects were those which had been occupied by settlers and which were not taken directly from the body of vacant public lands." "Unfortunately,"

\textsuperscript{1}Samuel P. Hays, \textit{op. cit.}, 14-15.
Newell continued, "due largely to the laxity in enforcement of the letter and spirit of the law, many of these lands passed into the hands of speculators. To put it another way, the owners found that they could make more money by raising the price of land than by raising crops."¹

The new interpretation of the Reclamation Law was applied to the five projects approved in 1903, including the first, the Truckee-Carson ditch in Nevada, and the second, the Roosevelt reservoir on the Salt River in Arizona.²

By 1914, when Newell retired as Director of the Reclamation Bureau, his agency had surveyed and started construction on 23 irrigation projects located in 18 different states. These projects involved an investment of nearly $100,000,000 in dams, reservoirs, tunnels, canals, and power and pumping plants. These and minor


²Samuel P. Hays, op. cit., 4; E. Louise Peffer, op. cit.
auxiliary works served about 1,500,000 acres of arid lands.\(^1\) By 1914 there were 11,000 families or between 50,000 to 60,000 people settled on Federal Reclamation projects, but by this date actual costs of water rights were shown to be twice the original estimates made in 1902, and Congress also found it necessary in 1914 to pass a relief bill for the benefit of settlers on federal reclamation project land, whereby the time of repayment to the reclamation fund was extended from 10 to 20 years.\(^2\)


From 1901 to 1905, the National Forest Reserves continued to be administered by the General Land Office of the Department of the Interior, with technical advice supplied by the Bureau of Forestry in the Department of Agriculture. Under Secretary of Interior Ethan Allen Hitchcock's administration, the forest reserves increased in number and size from 54 reserves with 60,175,765 acres in 1902, to 83 reserves with 85,618,472 acres by 1905.

In 1901 President Roosevelt and Secretary of the Interior Hitchcock had requested Congress for the authority to transfer the forest reserves to the Department of Agriculture, where they could be administered by the professionally trained foresters of the Bureau of Forestry. Pinchot launched large-scale and intensive publicity campaigns to promote the plan and also to educate the public regarding


the values to be gained by scientific forest management. "Practical
Forestry in the woods, through which alone the forests can be saved,"
was the slogan adopted. In these efforts, Pinchot and the Bureau
of Forestry pioneered and developed the technique of extensive
handouts of stories or "educational material" for use in newspapers
and periodicals. Gradually an extensive, classified mailing list of
organizations and persons was built up.

In the words of Pinchot's biographer, "By 1909 this list had
reached a total of 781,000 and was divided into such categories as:
engineers, 16,000; lumbermen, 56,000; newspaper men, 22,000; farmers,
321,000; educators, 111,000." Pinchot estimated that this unending
stream of news items was inserted in from 30 to 50 million copies of
newspapers every month.\(^1\)

A second technique perfected by Pinchot was the policy of having
representatives of the Bureau of Forestry attend conventions and
meetings held by Western interests and professional groups for the
purpose of securing resolutions and recommendations favorable to
Pinchot's policies.\(^2\)

In addition to the general public, Pinchot devoted special
efforts to winning over Western interests. The great lumber com-
panies, transcontinental railroads, and mining corporations of the

\(^1\)M. Nelson McGeary, Gifford Pinchot, 50-51, 88; E. Louise Peffer,
The Closing of the Public Domain, 66-67.

\(^2\)E. Louise Peffer, op. cit., 66-69; McGeary, op.cit., 89-90;
Samuel P. Hays, op.cit., 39.
West, which owned large tracts of valuable timber land, were already applying the techniques of efficiency to their industrial operations and hence readily accepted Pinchot's arguments for the need for sustained-yield forest management. Aside from the obvious benefit of such methods of operation, these land owners also realized that the "locking up" of all public forest land in national reserves also increased the value of their own land, and that Federal use of sustained-yield principles on Federal forests might be helpful in maintaining timber prices.

Thus, by 1901 the great Kirby Lumber Company of Texas, the Northern Pacific Railroad, and the Weyerhauser Lumber Company of the Pacific Northwest were supporting Pinchot's policies. Working through the American Forestry Association, these companies provided funds for a clerk in the office of the Bureau of Forestry, when Congress failed to appropriate money for this purpose, and also donated $125,000 to endow a chair at the Yale Forest School.1 By 1905 most of the Western railroads, lumber companies, and mining interests were actively supporting the project of transferring forest reserves to the Department of Agriculture.

Another powerful interest that had to be conciliated was the Western stockmen. In a report to the Commissioner of the General Land Office in 1900 on the question of grazing, Pinchot wrote, "as a practical matter this is at present the most important of

"the three (problems). Upon it more than upon any other, depends the support of the forest reserve policy by the people of the West."¹

In administering the National Forest Reserves prior to 1901, the General Land Office had held "that the only question was that of forest preservation, and that as cattle and horses worked no material injury they were not prohibited from grazing in the forest reserves), while sheep, often called hoofed locusts, in solid packs, as they travel, and feed and browse, do, in most cases incalculable injury."²

The effectiveness of this restricted grazing policy had been limited only by the fact that the Department of the Interior did not have sufficient employees to fully enforce the regulations. But, even so, the sheepmen charged discrimination against their interests in banning sheep from forest reserves. As it was politically inexpedient to ignore the demands of the powerful Western sheepmen, the General Land Office, on April 4, 1900, adopted a rule requiring applications for permits or leases from all grazing classes.³

¹Cited in E. Louise Peffer, Closing of the Public Domain, 74.
³E. Louise Peffer, Closing of the Public Domain, 73-74; Samuel P. Hays, op. cit., 55-57; Benjamin H. Hibbard, op. cit., 484.
In order to gain the stockmen's support for his forest policies, Pinchot, in the words of Samuel P. Hays, now "played a crucial role in preventing game organizations from transforming the reserves into parks and game preserves, a possibility which the stockmen greatly feared." He also "intervened to open the forest ranges to more livestock... As early as 1901 the Western cattlemen openly approved Pinchot's approach to the grazing problem, and contrasted it with past methods used by the Department of the Interior." In their convention of 1901 and following years, the American National Livestock Association (comprised of cattlemen) passed resolutions endorsing Pinchot's views and plans. By this skillfully conducted campaign Pinchot was able to win the support of the majority of Western cattlemen, but the sheepmen remained hostile to any form of range control on federal lands. (see Appendix VI for number of sheep grazing in National Forests. 1905-13).  

Pinchot's determined efforts culminated in success. On February 1, 1905, Congress finally authorized the transfer of the National Forest Reserves from the Department of the Interior to the Department of Agriculture, where they were placed under the full  

1 Samuel P. Hays, op. cit., 40.  
2 Ibid., 40-41.  
control of Gifford Pinchot as Forester and Chief. The name of the Bureau of Forestry was changed to the Forest Service, and in 1907 the term "National Forests" was adopted in place of "Forest Reserves" to emphasize the utilitarian purposes of the federal forests. The Forest Management Act of 1897 had granted the Secretary of the Interior the authority to "make such rules and regulations and establish such services as will insure the objects of reservations; namely, to regulate their occupancy and use and to preserve the forests thereon from destruction." This act, Pinchot held, conferred every necessary authority and power needed to administer the reorganized forest reserves. As Samuel Hays has noted: "This broad interpretation of the Act of 1897 played a crucial role in the new forest program by enabling the administration to justify many measures which Congress might not have sanctioned." George Woodruff, Pinchot's chief law officer, expressed it thus: "Progress came not through getting new powers (from Congress), but by using those we had."

Under Pinchot's vigorous leadership, an efficient system of administration was rapidly established in the National Forests in 1905-06. Trained foresters, selected and protected by Civil Service regulations, were placed in each reserve, whose duty it was to administer and protect the forests. They instituted precautionary

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1Samuel P. Hays, op. cit., 42-44; McGeary, op.cit., 59-61.
2Samuel P. Hays, op. cit., 44.
3Cited in Hays, op. cit., 44.
measures against fire, protected the forest growth, selected trees ready to be cut and sold, and also supervised grazing. An able and zealous corps of foresters was soon formed.

An act of February 6, 1905, gave the employees of forest reserves and of national parks the authority to make arrests for violations of laws and regulations governing these federal areas. The placing of foresters in each forest reserve resulted in a more stringent regulation of use and a stricter interpretation of existing laws. This increased protection, however, aroused considerable friction with local Western groups who had previously had almost free run in the forest reserves. This hostility was reflected in Congress on June 11, 1906, when a law was passed that permitted homestead entries to be filed within and on the large amount of non-forest land included within the forest reserve boundaries. However, as the authority was granted to the Secretary of Agriculture to designate what land should be classified as agricultural and thus open to entry, considerable protection was still afforded to the forest reserves by the 1906 act.¹

In addition to a firmer policy of administration, the total area of the reserves in the 1905-1906 fiscal year was expanded from 85,693,422 acres to 106,999,138 acres.² The storm of Western opposition that was to break over the Forest Service in 1907 is discussed in Section 7 of this chapter.


²E. Louise Peffer, op. cit., 66.
On May 22, 1902, President Roosevelt signed a law setting apart forever "as a public park or pleasure ground, for the benefit of the people" an area to be known as "Crater Lake National Park." The act, passed with little discussion in Congress, permitted mining in the park, but also authorized the Secretary of the Interior to establish rules and regulations to protect the natural objects, timber, fish, and game in the preserve. The law further established a schedule of penalties for violation of such rules. A few weeks later Congress also appropriated $2,000 for the protection of the Park, and a superintendent was appointed to patrol the area.

On January 9, 1903, Wind Cave, in South Dakota, sponsored by Senator Gamble of that state and Representative John F. Lacey of Iowa, was set aside as "a public park to be known as the Wind Cave National Park."

Early in 1903 Robert Underwood Johnson, editor of the Century, wrote to John Muir that President Roosevelt wished to have the great naturalist guide him through Yosemite. Muir replied, "Should the President invite me, I'll go and preach recession (a project to have the state-owned valley of Yosemite made a part of Yosemite National Park) and forestry like . . . a Century Editor." Arrangements

1. Laws Relating to the National Park Service, the National Parks and Monuments (1933), 111.
2. Ibid., 112; John Ise, Our National Park Policy, 129-133.
3. Laws Relating to the National Park Service, 123; John Ise, Our National Park Policy, 136-139.
completed, the President went west with his naturalist friend, John Burroughs, and in April, 1903, they explored Yellowstone National Park. On May 15, 1903, Muir met President Roosevelt at Raymond, California, and the two men disappeared into Yosemite on a four-day pack trip.

Muir reported: "I stuffed him pretty well regarding the timber thieves, and the destructive work of the lumbermen, and other spoilers of the forests." Roosevelt later commented that Muir's deep concern over the destruction of the forests and scenery had greatly impressed him and that he had come away "with a greatly quickened conviction that vigorous action must be taken speedily, or it should be too late."\(^1\)

On his return to Washington, Roosevelt said: "Surely our people do not understand even yet the rich heritage that is theirs. There is nothing in the world more beautiful than the Yosemite, the groves of giant Sequoias and redwoods, the Canyon of the Colorado, the Canyon of the Yellowstone, the Three Tetons; and the people should see to it that they are preserved for their children and their children's children forever, with their majestic beauty all unmarred."\(^2\)


On June 2, 1904, Sully Hill in North Dakota was established as a National Park, and in the fall of 1904 John Muir’s long campaign to have the state-owned Yosemite Valley park receded to the federal government as part of the surrounding National Park gained new momentum. William E. Colby, a young mining engineer and leader in the Sierra Club, drafted a bill to achieve this end, which was introduced in the California legislature in January, 1905. Supported by most of the California newspapers, the bill passed the assembly easily but the margin of victory in the senate was by only one vote. The governor signed the measure into law on March 3, 1905.¹

Obtaining the state’s consent, which set a specified time limit within which the Federal Government must accept the offer, was but half the battle. Utilitarian and preservation conservationists now clashed. Opposed were stockmen, lumbermen, and the San Francisco water and power interests that were trying to seize Hetch Hetchy Valley and Lake Eleanor for reservoir sites, assisted privately by Gifford Pinchot and publicly by "Uncle" Joe Cannon, the powerful Speaker of the U. S. House of Representatives. These forces succeeded in blocking congressional action on the bill for one year.

In the spring of 1906, as the state recession act neared expiration, John Muir called on his friend E. H. Harriman, the powerful head of a mighty railroad empire, for assistance.

¹John Ise, Our National Park Policy, 139-140. Laws Relating to The National Park Service, 277.
Harriman's letter to Speaker Cannon led this gentleman to see the
question in a new light. Harriman's influence in the House, and
particularly the Senate, together with the strong support afforded
by President Roosevelt, led Congress to accept California's offer.
On June 17, 1906, after a bitter 17-year struggle, Yosemite Valley
finally became a part of Yosemite National Park.¹

The year 1906 was to be the high water mark of Roosevelt's
legislative program for national parks. Platt in Oklahoma and
Mesa Verde in Colorado were both established by law as national
parks on June 29, 1906.² These, however, were the last national
parks to be authorized during the administration of Theodore
Roosevelt. Western hostility, aroused by his other conservation
policies, probably accounted for the failure of Congress to add
more national parks; but before this Congressional opposition had
crystallized, the Lacey Law or Act for the Preservation of Anti-
quities was signed into law on June 8, 1906.

The Bureau of American Ethnology of the Smithsonian Institution
and the Society for the Preservation of Historical and Scenic Spots
had long worked for a law that would authorize the President to set
aside areas containing archeological, historic, and scientific

¹ Linnie M. Wolfe, op. cit., 302-304; Samuel P. Hays, op. cit.,
192-193; Carl Russell, One Hundred Years in Yosemite, 156-157;
John Ise, Our National Park Policy, 68-75; Hans Huth, Nature and
the American, 182-183.

² John Ise, op. cit., 140-142, 164-165; Leaws Relating to the
National Park Service, 121-122, 125-127.

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features as permanent reserves. John F. Lacey of Iowa, Chairman of the House Public Land Committee, introduced the first such bill in 1900. Other scientific and educational associations, such as the Archeological Institute of America and the Colorado Cliff Dwellers, rallied to the proposal. President Roosevelt, Secretary of the Interior Ethan Allen Hitchcock, and the Commissioners of the General Land Office Binger Herman and, later, W. A. Richards also strongly endorsed the bill.

Success was finally achieved in 1906, and the Lacey Act provided penalties for appropriating, destroying, excavating, or injuring any historic or prehistoric ruin or monument located on federally owned or controlled lands. The law further authorized the President to withdraw from entry, to reserve and establish by proclamation as national monuments such federal public lands as contained historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest. When such objects were situated on privately claimed land, the Secretary of the Interior was authorized to accept such lands as a gift. Finally, the Secretaries of Interior, Agriculture, and War were empowered to grant permits for the examination, excavation, and gathering of objects of antiquity on federal lands under their jurisdiction to qualified persons, for the benefit of museums and educational institutions. The Secretaries were also directed to publish the rules and regulations established for the protection of these national monuments.¹

¹Laws Relating to the National Park Service (1933), 298-300; John Ise, Our National Park Policy, 143-153; Samuel P. Hays, op.cit.,189.
President Roosevelt used the Antiquities Act widely: the first national monument to be established was Devils Tower in Wyoming, on September 24, 1906; and between 1906 and 1909 he created a total of 18 national monuments (see appendix VIII). Ten of the new monuments were administered by the Secretary of the Interior and 8 by the Department of Agriculture. When it became apparent in 1907 that Congress would not create any more national parks, President Roosevelt then utilized the Antiquities Act to reserve and protect certain areas that otherwise probably would have been established at once as national parks. Two instances which illustrate this policy were the establishment of Grand Canyon in Arizona in 1908 and Mount Olympus in Washington in 1909, as National Monuments.\(^1\)

As early as April 26, 1900, Representative John F. Lacey had also introduced a bill to establish a bureau to "administer national parks" as a system. Similar proposals urging the creation of a National Park Bureau in the Department of the Interior were introduced in 1902 and 1905. Gifford Pinchot, however, was willing to accept such an agency only on the condition that the new bureau and individual parks would be transferred to the Forest Service, where they could be administered in accordance with his views. Representative Lacey stopped Pinchot’s plans for such a transfer in 1906 and 1907, but the forester, on his part, was able to block in

\(^1\)John Ise, op. cit., 156-157; Hans Ruth, Nature and the American, 181-182; Grand Canyon had been recommended as a National Park in the report of the National Forestry Commission in 1897.
Congress the proposed creation of a National Park Bureau.¹

5. **Wildlife Conservation, 1901-1913**

The ranks of conservation organizations were strengthened by the formation of the following influential associations:

The American League for Civic Improvement, 1901, which merged in 1904 with the American Park and Outdoor Art Society into American Civic Association; the National Association of Audubon Societies, formed in 1905; the American Bison Society, 1905; the National Conference on City Planning, 1909; and the American Game Protective Association, 1911.

These societies were primarily of the preservationist school of conservation, and their most powerful and able leader was probably J. Horace McFarland, president of the American Civic Association from 1904 to 1923 and newspaper editor from Harrisburg, Pennsylvania. The Women's Garden Club movement was also started in the early 1900's and soon took an interest in conservation matters.²

C. Hart Merriam, first director of the U.S. Biological Survey, and President Roosevelt induced Congress to raise that agency to bureau status in the Department of Agriculture in 1904 and to place the federal government firmly in the field of wildlife conservation.


In 1903, by executive order, President Roosevelt established Pelican Island at Indian River, on the east coast of Florida as the first federal wildlife refuge. This three-acre refuge, administered by the U. S. Biological Survey, represented the first national recognition of the desirability of establishing federal reserves to preserve wildlife, thus paralleling those reserves previously set aside to protect scenic values and forest resources. The second federal bird refuge was the Breton Island Reservation in Louisiana, established on October 4, 1904; and the third, the Stump Lake Reservation in North Dakota, was created on March 9, 1905. In all, President Roosevelt established by executive order a total of 51 national bird reservations located in 17 states and territories between 1903 and 1909.

On January 24, 1905, Congress passed an act authorizing the President to designate and reserve federal lands for the protection of game animals and birds and as breeding places for these creatures. Acting under this law for the first time, Roosevelt, on June 2, 1905, established a national game refuge in the Wichita Forest Reserve and placed it under the jurisdiction of the Forest Service. On June 29, 1906, a Grand Canyon game preserve was also created in Arizona.

In 1908 federal reclamation reservoirs and sumps were designated as wildlife refuges; and the first large areas, such as Lower Klamath Lake and Malheur Lake in Oregon, were reserved for wildlife protection.
On May 23, 1908, Congress voted the first funds to establish and fence a big-game animal preserve: 12,800 acres of land were acquired on the Flathead Indian Reservation in Montana for a national bison range. The fence around this area was completed and 37 bison were released on this range on October 17, 1909. On March 2, 1909, the Olympic National Monument was also set aside to provide special protection for the Roosevelt elk.

In 1909 the first federal wildlife refuges, totaling 50,519 acres, were established in Alaska. Included were Bogoslof, Saint Lazaria and Tuxedni Islands and the Bering Sea Reservation (St. Matthew and Hall Islands). In 1910 the U.S. Bureau of Fisheries took over charge of the great fur seal rookeries on the Pribilof Islands in Alaska, and also the management of Alaskan marine mammals such as walruses, seals, and sea otters.

Starting with three acres reserved in 1903, federal wildlife acreage increased in the continental United States to 21,504 acres by 1908, and to 383,774 acres by 1909, exclusive of the 50,519 acres reserved in Alaska for the same purposes (see Appendix IX).

In 1904 the first bill was introduced in Congress to authorize the federal government to regulate the hunting of wild duck, geese, and other migrating species. This proposal, in one form or another, was constantly before Congress, but was not to pass until 1913.

The wildlife refuge movement made similar progress on the state level in this same period. Indiana led the way, creating one such
refuge in 1903. Pennsylvania followed suit in 1905, Alabama in 1907, Massachusetts in 1908, Idaho in 1909, and Louisiana in 1911.¹


In 1902 President Roosevelt lashed out at the abuse of the federal land laws, stating: "In their actual use, the desertland law, the timber and stone law, and the commutation clause of the homestead law have been so perverted from the intention with which they were enacted as to permit the acquisition of large areas of public domain for other than actual settlers and consequent prevention of settlement."²

In addition to preventing fraud, Newell and Pinchot were also eager to apply the principles of scientific land management to the use of the public domain.³ Their plans were assisted by the uncovering of a gigantic land fraud ring, which involved the General Land Office of the Department of the Interior. On learning of the existence of such a ring, Secretary of Interior Hitchcock ordered an intensive investigation, and the results were made public in December, 1902.

¹Ira N. Gabrielson, Wildlife Refuges, 6-12; Van Hise and Havemeyer, Conservation of our National Resources, 397, 399-400, 428, 432; Samuel P. Hays, Conservation and the Gospel of Efficiency, 189.

²Congressional Record 57th Cong. 2nd Sess. (1902-03), XXXVI, 11, cited in E. Louise Peffer, op. cit., 42.

This instance of fraud came under the terms of the Forest Management Act of 1897. When a national forest reserve was created, it included all lands situated within its boundaries, regardless of private or public ownership. National forest reserves therefore often included many acres of privately owned land. In order to deal with this situation, the Forest Management Act of 1897, provided that owners of land situated within a forest reserve might, if they so desired, exchange such lands for a tract of vacant land open to settlement and not exceeding in area the tract covered by their claim or patent. A forest-lieu scrip was issued to authorize such an exchange, and the law did not stipulate that the public land selected should compare in value with that relinquished in the exchange.¹

Through bogus entries and bribery of local Land Office officials, a group of speculators in California and Oregon, led by two San Francisco financiers--John A. Benson and Frederick A. Hyde--obtained title to much worthless land located within school sections in Oregon. Then, acting through Senator John Mitchell of Oregon and Binger Herman, the Commissioner of the General Land Office, forest reserves were created to include the school sections in which the speculators' land was situated. Taking advantage of the forest-lieu land privilege, the speculators then selected, in lieu of their worthless lands, areas of the best remaining unreserved forested land in the public domain. The trial of the General Land Office

¹E. Louise Peffer, op. cit., 43.
officials and the speculators, held in Portland, Oregon, rocked the West.\textsuperscript{1}

With Congress' consent, President Roosevelt, on October 22, 1903, appointed a "Commission of experts" to "report at the earliest practicable moment upon the condition, operation and effect of the present land laws, and on the use, condition, disposal, and settlement of the public lands."\textsuperscript{2}

The members of the Public Land Commission were Pinchot, Newell, and W. A. Richards, the new Commissioner of the General Land Office. After extensive investigation and travel in the West, the Commission made the six following recommendations: (1) that the remaining public lands should be scientifically classified as to their agricultural possibilities, and that until this was done they should be retained under government control and not open to settlement; (2) the right to exchange lands in forest reserves for lands outside should be repealed; (3) the timber and stone act should be repealed; (4) the commutation privilege of the Homestead Act should be withheld until after three years of actual residence; (5) the area subject to entry under the Desert Land Law should be reduced to 160 acres.


\textsuperscript{2}Cited in Samuel P. Hays, op.cit., 67; also E. Louise Peffer, The Closing of the Public Domain, 45; M. Nelson McGeeary, Gifford Pinchot, 58; Pinchot drafted the order which Roosevelt signed, creating the Public Land Commission.
because the larger area allowed under the existing law was found to contribute to monopoly; and (6) a flexible plan of administration should be provided for the grazing lands of the public domain.\(^1\)

In essence, the Public Land Commission of 1903 had repeated the recommendations made in 1879, and a large documentary appendix to the 1903 report also brought the facts on federal lands up-to-date. As in 1879, Congress in 1905 chose to ignore all but one of the Public Land Commission's recommendations: the lieu-land provisions of the Forest Management Act of 1897 were repealed by Congress on March 3, 1905.\(^2\) In 1905 and 1906 President Roosevelt repeatedly called upon Congress to enact remedial land law legislation, but powerful hostile Western interests blocked all congressional action on Roosevelt's legislative conservation program. The focus of western hostility was not directed primarily against the public land reform program, but rather at the forest policy of the administration; this latter program had created such an animosity that almost any suggestion President Roosevelt might make was automatically opposed by the West.\(^3\)


7. Explosion 1907; The Opposition Rallies

In 1907, for the first time since 1901, the opponents of the Roosevelt-Pinchot conservation program were able to launch a counter-offensive; the battle in Congress revolved about the 1907 appropriation bill for the Department of Agriculture.

The law of 1905, transferring the forest reserves to the Department of Agriculture and establishing the Forest Service, had created a special forestry fund, which Pinchot had modeled after the "Reclamation Fund" created in 1902. The law directed that all proceeds from sale of forest products and use of the forest preserves were to be deposited in the "forestry fund" and that the Secretary of Agriculture and the Chief Forester could use these proceeds for "the protection, administration, improvement, and extension of the forest reserves."

The act of 1905 also provided for the termination of the special forestry fund five years after the date of the passage of the law. In establishing this special fund, Congress apparently had not anticipated that the revenues from the use of federal forest reserves would ever be large. The course of events 1905-1906, however, proved to be otherwise (see Appendix VI).

For the period February to June 30, 1905, only $14,732.87, the receipts from timber sales and grazing fees, had been deposited in the forestry fund, but in the next fiscal year these revenues leaped to nearly $800,000, only about $75,000 less than the Congressional appropriation for the Forest Service. Furthermore, the Forest Service estimated its revenue for the 1907 fiscal year would amount
to some $1,250,000. Pinchot, endeavoring to create a favorable case for the large appropriations requested for the Forest Service in the 1907 appropriation bill, submitted figures for future anticipated revenues as well as a schedule of future appropriations that would be required. According to his calculations, 1907 would be the last year that large Congressional appropriations would be needed, and after 1911 the Forest Service would be self-supporting and would no longer require any Congressional funds. The 1907 appropriation bill also included a provision to repeal the five-year limitation on the forestry fund and proposed to replace the termination clause with a statement that the fund should "continue until otherwise provided by law." After June 30, 1908, it was proposed that expenditures from the forestry fund would be guided only by preliminary estimates made each year by the Secretary of Agriculture.

This plan, indicating that after 1911 Congress would have little or no direction over the operations of the Forest Service and the expenditure of large sums of money from the forestry fund, aroused strong opposition in both the East and the West and among the friends and enemies of conservation.¹

In addition to the fiscal features of the 1907 appropriation bill, which were intended to make the Forest Service independent of the "inefficient" operations of Congress, the bill included another proposal that aroused the hostility of special interests in the West.

¹ E. Louise Peffer, op.cit., 91-93; Samuel P. Hays, op.cit., 46, 136-137.
In January, 1906, acting under a broad interpretation of the Forest Management Act of 1897, Pinchot had imposed the first grazing fee in his newly acquired national forest reserves. In the 1907 appropriation bill, the President and Chief Forester now proposed to extend an effective grazing control program to all the lands of the public domain. This provision aroused the intense opposition of both cattlemen and sheepmen.¹

Other policies instituted by Pinchot in the National Forest Reserves had the effect of rousing additional enemies. In 1906, acting on the theory that a reasonable fee should be made whenever permission was granted for the exclusive use of any resource located in a forest reserve, Pinchot had initiated the practice of charging fees for use of sites granted to companies engaged in the development of hydroelectric power. Heretofore, private power companies had received unlimited grants of such sites free of charge. Pinchot's innovation aroused the wrath of powerful Eastern and Western private power corporations.²

Western land speculators and "pioneers" were alarmed by the Roosevelt-Pinchot program of apparently closing the remaining choice portions of the public domain to exploitation, and also of instituting a stricter interpretation and enforcement of existing land laws.


²Samuel P. Hays, op.cit., 74-75; E.Louise Peffer, op.cit., 94; M. Nelson McGeary, op.cit., 74-78.
To back their case, the speculators pointed to rapid expansion of
the national forest reserves from some 86,000,000 acres in June,
1905, to 107,000,000 a year later, and to President Roosevelt's
withdrawal from agricultural entry of some 66,000,000 acres of coal
land in 1906. The Forest Service's strict interpretation of the
terms of the 1906 Forest Homestead Act, and the intensity of the
Department of the Interior's investigations of the land frauds,
with the resulting strict enforcement of land laws, were regarded
by many Westerners as barriers to settlement.¹

Thus, in early 1907, many and diverse interests united in their
common dislike of Pinchot and fear of his plans--"Pinchotism" as
they called it--when his program was becoming more clearly revealed
in the provisions of the 1907 appropriation bill for the Department
of Agriculture. In passing this bill, the opponents scored three
major victories: First, they abolished the special forestry fund,
thereby making Pinchot wholly dependent upon Congress for funds;
second, they eliminated the plan for instituting grazing controls
for the general public domain; and third, they included a clause
that deprived the President of the authority to create national
forest reserves in the states of Oregon, Washington, Idaho, Montana,
Colorado, and Wyoming, the six states in which the sheepmen were
most powerful.

¹E. Louise Peffer, op.cit., 66, 69, 95-98; Samuel P. Hays,
op.cit., 82-83; M. Nelson McGeary, op.cit., 79.
Jubilant in their victory, the opponents of "Pinchotism" had failed to estimate fully the audacity of the President and his Chief Forester. Even before the bill was presented to Roosevelt for signature, Pinchot had suggested that the President, prior to signing the law that would restrict his authority to create new forest reserves, should withdraw all the remaining lands which were conceivably of value for forestry purposes in the six states where his power would be curtailed. Roosevelt endorsed this idea enthusiastically, and just before signing the appropriation bill, on March 4, 1907, he issued proclamations creating a whole series of "midnight forests," containing some 16,000,000 acres, in six states. As Roosevelt expressed it: "The opponents of the Forest Service turned handsprings in their wrath" at this last minute action.\(^1\)

In 1907, when the Roosevelt-Pinchot conservation legislative program became blocked in Congress, the President decided to take his case to the people, and the program known as the "Conservation Movement" was born. What had actually been an executive policy, progressively developed from 1901 to 1906, was in 1907 elevated to the level of a national crusade and dramatized by masterly showmanship of Roosevelt and Pinchot.\(^2\)


8. "The Conservation Movement" and the Public, 1907-1909

At the urging of Pinchot and W. J. McGee (1853-1912), geologist, anthropologist, and philosopher, then in charge of the St. Louis Museum, President Roosevelt appointed the Inland Waterways Commission on March 14, 1907. The commission was composed of Representative Theodore E. Burton of Ohio as Chairman; Senator Francis G. Newlands of Nevada as Vice-Chairman; W. J. McGee, Secretary (recently appointed to a post in the Bureau of Soils); Senator William Warner of Kansas; Representative John H. Bankhead of Alabama; Brigadier General Alexander MacKenzie, Chief of the Corps of Army Engineers; Frederick H. Newell, Chief of the Reclamation Service; Gifford Pinchot, Chief of the Forest Service, and Herbert Knox Smith, Commissioner of Corporations. They were instructed to investigate and recommend a comprehensive plan of development and use for all the rivers and streams in such a manner as to benefit the entire country. Previous federally sponsored projects, which had been undertaken generally for a single purpose, such as improvement of navigation, the development of electric power, the irrigation of arid lands, the protection of lowlands from floods, or the protection of watersheds to insure a supply of water for domestic and manufacturing uses, were now to be merged in a multiple-purpose and scientifically designed plan for the coordinated development of the nation's rivers.¹

In its final report submitted to the President on February 3, 1908, the Inland Waterways Commission recommended that "Hereafter plans for the improvement of navigation in inland waterways . . . should take account of the purification of the waters, the development of power, the control of floods, the reclamation of lands by irrigation and drainage, and all other uses of the waters or benefits to be derived from their control." To coordinate all water resource administration, the Commission recommended the establishment of a single executive agency. These proposals, however, met with little favor from the Corps of Army Engineers or Congress; and Congress refused to act upon them.1

The Inland Waterway Commission also stressed the overall interlocking character of the problem of natural resources, pointing out that the control of water would also conserve coal and iron and the soil, as well as make necessary the preservation of forests. Earlier, in May, 1907, the Commission had also suggested that a national conference should be held the following year to consider the general problem of the conservation of natural resources.2

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2M. Nelson McGeary, op.cit., 95-96; Samuel P. Hays, op.cit., 128-129. In 1906 and 1907, Robert Underwood Johnson, editor of The Century, several times suggested to both Roosevelt and Pinchot that a national conference of governors should be called to make decisions about protecting the watersheds of the Appalachian Mountains, see Robert Underwood Johnson, Remembered Yesterday, 300-301; and Hans Huth, Nature and the American, 186.
During the summer of 1907 this latter idea was elaborated and expanded by Newell, Pinchot, McGee, and Senator Newlands into a plan for a gigantic conference on conservation to be staged in Washington, D. C. In November, 1907, with President Roosevelt's endorsement, Pinchot issued the invitations for a Conference of Governors to be held at the White House for the purpose of arousing public support and interest in a nationwide conservation program.¹

There thus assembled, May 13 to 15, 1908, in the East Room of the White House, the President of the United States, the Vice-President, seven members of the Cabinet, nine justices of the Supreme Court, many members of Congress, the governors of 34 states, the representatives of the governors of the other 12 states, the governors of all the territories, the President of the Board of Commissioners of the District of Columbia, representatives of 68 national societies, 48 general guests, and the members of the Inland Waterways Commission. Five men: William Jennings Bryan, steel magnate Andrew Carnegie, railroad king James J. Hill, labor leader John Mitchell, and ex-President Grover Cleveland (who was unable to attend because of ill-health) were invited to represent the general public.

The uninvited included: Dr. Bernhard E. Fernow, former Secretary of the Interior John W. Noble, John Muir, Charles S. Sargent, Edward A. Bowers, and Robert Underwood Johnson.²

¹M. Nelson Geary, op. cit., 95-97; Samuel P. Hays, op. cit., 128-129.
The Governors Conference was well controlled by administration leaders. McGee, Newell and Pinchot drew up its agenda, wrote most of the speeches, and planned and directed the action of the meeting. Following a solemn opening address by President Roosevelt, which demonstrated his broad understanding of the scope of the problem, there were three days of speeches by governors, scientific men, and eminent citizens. Utilitarian conservation and the gospel of efficiency were the doctrines preached. The ultimate goal, McGee stated, was absolute efficiency: "The perfect machine", he said, "is the fruit of the ages." Roosevelt declared, "let us remember that the conservation of natural resources... is yet but part of another and greater problem... the problem of national efficiency, the patriotic duty of insuring the safety and continuance of the Nation." Minerals, forests, soils, and water were to be conserved and developed primarily as a source of raw materials for the industrial machine.

Opposition governors from the West were given time to reply, but their protests were quietly and "efficiently" shelved.

1 Samuel P. Hays, op.cit., 140; M. Nelson McGeary, op.cit., 98-100.

Pinchot's careful issuance of invitations succeeded in eliminating nearly, but not quite, all expression of the preservationist conservation viewpoint from the conference. Three speakers only, Governor Charles Evans Hughes of New York, George F. Kunz, president of the American Scenic and Historic Preservation Society, and J. Horace McFarland, president of the American Civic Association, arose to challenge the utilitarian concepts and to urge the conservation of scenic beauty for the benefit, health, and recreation of humanity, as opposed to the utilitarians' doctrines of sacrificing all to the interests of the machine and industry. 1

Following Pinchot's suggestions, the governors finally issued a statement at the end of the conference recommending the protection of the source waters of navigable streams, the adoption of effective means for checking forest fires, the regulation of timber cutting on public and private lands, the granting of separate titles to the surface of public lands and the sub-surface minerals, and the retention by the federal government of title to all public lands in which there were phosphate rock, coal, oil, and natural gas. They also recommended that the President should appoint a national conservation commission to undertake a national inventory of all natural resources and that the states should establish similar conservation commissions. 2


In June, 1908, President Roosevelt appointed the National Conservation Commission, with Pinchot as chairman, and consisting of 49 well-known men, of whom one-third were politicians, one-third were industrialists, and the remainder were scientific men. The secretaries of the Commission's four sections, the men who carried the brunt of the work, were: W. J. McGee, Overton W. Price of the Forest Service, George Woodruff of the Department of the Interior, and Joseph A. Holmes of the Geological Survey. Congress, however, refused to vote funds for the new commission and also for the Inland Waterways Commission. The National Conservation Commission was therefore unable to undertake new investigations, but President Roosevelt ordered the heads of federal scientific bureaus to furnish such information as the commission requested, and the bureau experts were also detailed to compile the desired data. The Commission completed its three-volume report on December 1, 1908, and this was accepted by a second meeting of the governors on December 8.

The National Conservation Commission report contained the most extensive inventory of the nation's natural resources available. Each section reported on the supply of resources, their rate of use, and the probable date of their exhaustion. Congress, still unimpressed, continued to deny repeated requests for funds, and the National Conservation Commission then passed quietly out of existence.

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On the state level, the "Conservation Movement" well fulfilled a portion of Roosevelt and Pinchot's expectations. By 1909, 41 states had organized state commissions to investigate their natural resources, and conservation commissions representing 51 national organizations had been formed. "Conservation" became a great fad; newspapers, magazines, and clubs all worked to spread and support the program as part of a moral crusade. In observing this enthusiasm, Sir Horace Plunkett, Roosevelt's conservationist friend, noted, "seldom do we find such a combination of emotionalism with sanity."¹

Having conquered the nation, President Roosevelt and Pinchot next extended their idea to the continent. At President Roosevelt's invitation, the North American Conservation Conference met in Washington, D. C., on February 18, 1909, with 10 representatives of the governors of Canada, Newfoundland, and the President of Mexico in attendance. After meeting for one week, these delegates issued a broad statement urging that the principles of conservation be applied in each of their respective countries.²

On February 19, 1909, as Roosevelt's term of office neared its end, he issued invitation to 58 nations of the world to meet at The Hague in September, 1909, for a World Conservation Convention, to

¹Cited in E. Louise Peffer, op.cit., 103; Samuel P. Hays, op.cit., 132, 141-146; M. Nelson McGeary, op.cit., 100.

consider the conservation of natural resources of the entire earth. The proposed meeting, however, failed to materialize when Congress refused to appropriate funds for this purpose.  

9. Roosevelt and Congress, 1907-1909

If President Roosevelt had hoped to use the public enthusiasm for the "Conservation Movement" as a "big stick" on Congress, his strategy did not succeed; for the national legislature, certain that Roosevelt would not again run for the Presidency, made only a few slight moves to implement his conservation program by legislation.

On March 28, 1908, Congress finally acted to correct abuses in the Desert Land Act of 1877; all entry was henceforth restricted to surveyed land and the right of assignment, except to those "qualified to make entry", was withdrawn; assignment to or for the benefit of any corporation or association of people was specifically prohibited.

A second land reform bill was passed on March 3, 1909. This act granted entrymen who had made location on lands later found to be coal lands, the right to receive a patent for the areas covered by their entries, subject, however, to the reservation to the United States of all coal which might be contained in the land. The effect of this law was limited to entries made prior to March 3, 1909.

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1 Ibid.
2 Benjamin E. Hibbard, History of the Public Land Policies, 434; E. Louise Peffer, Closing of the Public Domain, 104.
On the negative side, Congress, vastly irritated by the assistance rendered Roosevelt by the numerous and active "commissions of experts," made sure that future Presidents could not utilize such devices without their consent. The Tawney Amendment to the Sundry Civil Bill, passed in February 1909, provided that no public money should henceforth be used for the compensation or expenses of any commission, unless so authorized by Congress. The law further prohibited the detailing of any employee of an executive department of the government to work with such a commission without first obtaining the approval of Congress.¹

Unable to make much headway in Congress in the program of land reform, the President relied heavily on a broad interpretation of existing laws as a means to achieve the same end. Thus, in 1906, the Roosevelt administration began a more systematic program of scientific classification for all public domain resources, including water power sites, and coal, oil, and phosphate lands. To guard against entry and fraud during the period of study, the Secretary of the Interior would temporarily withdraw the land under investigation from private sale. The Geological Survey would then examine the withdrawn area and submit its findings to the General Land Office of the Department of the Interior. On the basis of this data the General Land Office then proceeded to classify each area as most valuable for a particular use, and those agricultural lands not

containing other valuable resources were restored to the public domain as available for entry. Administrative authority for this change in procedure was based on a re-examination and re-interpretation of basic law that had established the U. S. Geological Survey in 1879.¹

In line with this new policy, Secretary of Interior Ethan Allen Hitchcock, between June 29 and November 12, 1906, withdrew from agricultural entry 66,000,000 acres of public land in the West and Alaska as probably containing workable deposits of coal. The Geological Survey at once began to examine, classify and establish an appraised value for the withdrawn land. By March, 1907, 28,000,000 acres had been found to contain no coal of sufficient value for permanent classification as coal land and had been restored for agricultural entry.²

In December 1906, and again in February 1907, President Roosevelt urged Congress to enact laws to permit the federal government to "retain its title to its fuel resources, and its right to supervise their development in the interest of the public as a whole." He further proposed that the government should lease the public coal lands for a per-ton royalty, and apply such regulations as were necessary to protect the public interest. When Congress refused to

¹Samuel P. Hays, op.cit., 70-73; Benjamin H. Hibbard, op.cit., 504-506.
²Samuel P. Hays, op.cit., 83; E. Louise Peffer, op.cit., 69; Benjamin H. Hibbard, op.cit., 520.
endorse these recommendations, the administration then re-
examined the legislation already on the books. It was discovered
that the Coal Land Act of 1873 had set prices of "not less than"
$10.00 to $20.00 an acre, the price depending on nearness to a
railroad. In the past this phase had been interpreted to mean
"not more than." On April 12, 1907, however, the administration
ruled that these were to be the minimum prices and thereafter the
coal lands would be sold only at an appraised value that would be
established by actual study of the land by the Geological Survey. 1

This decision led to a similar application in another area.
When Congress refused to correct the abuses of the Timber and Stone
Act of 1878, the clause of this law reading that land should be sold
"at a minimum price of $2.50 per acre" was restudied. On December
30, 1908, the Department of the Interior ruled that in the future
the lands to which this law applied would first have to be studied
by the Geological Survey and then could only be sold at their ap-
praised prices. Thereafter $2.50 per acre became the lowest rather
than the highest price paid for such land. 2

Valuable deposits of phosphate rock were found on public lands
in Idaho, Utah, and Wyoming. At the suggestion of Charles Van Hise,

1Samuel P. Hays, op.cit., 82-87; E. Louise Peffer, op.cit., 69-70,
104-105; Benjamin H. Hibbard, op.cit., 520-522.

2E. Louise Peffer, op.cit., 104-105; Benjamin H. Hibbard, op.cit.,
465, 467.
President of the University of Wisconsin, who argued that the shipment of this valuable fertilizer abroad was seriously depleting the country's future supplies of this resource, President Roosevelt, on December 10, 1908, had Secretary of Interior Garfield withdraw 4,699,160 acres of public land that were suspected of containing phosphate deposits in those three states.¹

Roosevelt also made a start in developing a federal policy for public oil lands. This came about at the request of the oil prospectors themselves. Congress had not yet passed laws specifically dealing with oil lands. As a result, prospectors had to file entries for oil deposits under the placer laws, which required that they had actually discovered oil before the land claim was filed. In practice, this permitted land speculators to file claim to land suspected of having oil under the agricultural entry laws and then holding such lands for resale at high speculative prices. In response to prospectors' complaints, the General Land Office, in 1900 had withdrawn lands temporarily from agricultural entry in California and Wyoming, until prospectors could drill to see if they contained oil. In August 1907, Secretary of Interior James R. Garfield withdrew from agricultural entry 2,270,144 acres of oil land in California. After the Geological Survey had examined and classified the area, the Secretary then reopened much of the area to agricultural entry, but the classified oil land could only be entered under the terms of the

¹E. Louise Peffer, op.cit., 106-107; Samuel P. Hays, op.cit., 87-88; Benjamin H. Hibbard, op.cit., 525-526.
mining laws.

In February, 1908, George Otis Smith, Director of the Geological Survey, recommended to Secretary Garfield that public oil lands should be withdrawn from mineral as well as agricultural entry, in order to reserve a future fuel supply for the Navy. Garfield, however, rejected this suggestion.¹

In January, 1906, Pinchot, acting under a broad interpretation of the Forest Management Act of 1897, had imposed the first grazing fee in a national forest. The permit, charging a fee for exclusive use over a fixed period of time, was useful as a means of promoting range conservation as well as of protecting the forest. By 1907, Roosevelt and the Chief Forester were advocating legislation that would extend a similar leasing system to all the lands of the public domain. As has been noted, this proposed legislation, with the forest service appropriation bill of 1907, were defeated in Congress and favorable action on general grazing control was not to be secured until 1934.²

In 1906, Pinchot, again acting under a broad interpretation of the administrative powers granted by the 1897 Forest Management Act, first applied a system of leasing to water power sites situated on national forest reserve lands. In the summer of 1908 he learned that


some private power corporations had evaded this leasing system by entering power sites under the terms of the mineral laws, a procedure permitted by the Forest Management Act of 1897. Secretary of Interior Garfield, on Pinchot's advice, immediately withdrew from all forms of entry 100 to 150 acres at each water power site in the national forests on the grounds that these areas were needed for use as ranger station sites.\(^1\)

Pinchot and Garfield next decided to extend the system of administrative leasing of power sites to all hydroelectric sites located on public lands. Between December 4, 1908 and February 27, 1909, Garfield, aided in the selection by the Forest Service and the Reclamation Service, withdrew as power sites 3,928,780 acres of public land. The principle of federal regulation of hydroelectric power on public land, however, was not to be established by legislation until 1920.\(^2\)

In 1906 Congress authorized the Reclamation Service to develop and sell hydroelectric power at the Service's first reservoir project, at Salt River, Arizona.\(^3\) This initial federal start in the production of electric power was developed by Newell, Pinchot, and McGee, and emerged as a part of the multiple-purpose water program.

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\(^1\)Samuel P. Hays, op.cit., 74-75; E. Louise Peffer, op.cit., 94; M. Nelson McGeary, op.cit., 76.


\(^3\)Samuel P. Hays, op.cit., 100.
recommended the Inland Waterways Commission. In December 1907, Senator Francis G. Newlands of Nevada introduced into Congress a bill presenting the Commission's multiple-purpose program. His measure called for the establishment of a permanent body of experts, to be appointed by the President. This new commission would continue to investigate water problems and would authorize projects, supervise their construction, and coordinate the activities of all federal water resource agencies. To finance this broad program, it was proposed that an Inland Waterway Fund of $50,000,000 would be established and that the commission should be allowed to draw upon this fund without the annual authorization from Congress.1 Secretary of War William Howard Taft and the U. S. Corps of Army Engineers violently opposed this bill because the new commission would have ended their previous autonomy in the fields of river navigation and flood control. At President Roosevelt's orders, Secretary Taft's hostile report was submitted to Pinchot for review and editing. Taft's final report, revised to support the multiple-purpose plan, was then submitted to Congress. The Newlands bill, however, was defeated in Congress in May, 1908.2

This was not to be the end of the struggle between Pinchot and the War Department. In 1906 Congress passed a General Dam Act which established in detail the conditions under which hydroelectric dams

1Samuel P. Hays, op. cit., 109.

could be erected on navigable streams. Acting under this law, President Roosevelt signed 25 special acts that permitted private power companies to erect dams in navigable streams to generate power. These permits required only that the dams must be erected in such a manner as not to interfere with river navigation. By February 1908, however, President Roosevelt changed his views on this subject and notified Congress that he would sign no more bills that provided for the perpetual grant of dam sites built to generate hydroelectric power. In the future, the President declared, such acts must contain a definite limitation in time as to the rights granted, and also a rental for the monopoly given. This view, heartily supported by Pinchot, Newell, and McGee, conflicted with the interpretation of the General Dam Act held by Secretary of War Taft and the Corps of Engineers. The Taft group argued that the 1906 act granted authority over dams only for the purpose of regulating navigation, while the Roosevelt-Pinchot school believed that a broad interpretation of law justified the inclusion of the right to make reasonable charges for the special privileges granted. Here again, in April, 1908, President Roosevelt intervened and forced Secretary Taft and the War Department to endorse Pinchot's position in drafting water power bills for Congress. In 1908 and 1909 Roosevelt vetoed two water power bills that lacked time limits and rental clauses, but he was unable to persuade Congress to accept his point of view.1

In forestry policy, the President, utilizing the authority specifically granted under the Act of 1891, reserved between 1907 and 1909 an additional 75,000,000 acres of forest lands, increasing the total to 150,832,665 acres situated in 159 national forests.¹

In 1906, after having first endeavored to discourage such proposals, Roosevelt and Pinchot finally joined the movement to create national forests in the Appalachian Mountains of the East. Bills were introduced providing for the federal purchase of the necessary land to create such forests. These proposals were based on the constitutional power of the federal government to regulate navigable streams. The administration argued that the protection of the timber in the proposed national forests situated at the headwater of streams would improve the navigability of the Eastern rivers. The bill began to make headway in Congress in 1908, but was not to be passed until three years later.²

¹E. Louise Peffer, op. cit., 108.
²Samuel P. Hays, op.cit., 47-48; Charles D. Smith, "Gentlemen You Have My Scalp," in American Forests (February, 1962), 16-19. Pinchot had favored the creation of a Southern Appalachian National Forest since 1899, but opposed the White Mountain forest plan until 1905, when he finally agreed to the merger of the Northern and Southern movements, sponsored by the American Forestry Congress, into a single one. Carl A. Schenck of Biltmore Forest was a strong supporter of the Southern Forest plan; Philip Ayres of the Society for the Protection of New Hampshire Forests, and Edwin Stuart of the Massachusetts Forestry Association, were ardent backers of the White Mountain Plan.
Theodore Roosevelt's policies of reserving public land for public purposes may be summarized as follows: Between September 14, 1901, and March 4, 1909, he withdrew 141,267,530 acres as additions to national forests; five new national parks with 213,886 acres were created; Yosemite National Park was completed by the inclusion of the State-owned valley floor; 18 new national monuments, with some 1,449,000 acres, were established; and 434,293 acres were set aside as national wildlife refuges.¹

By 1909 there were also 23 federal irrigation projects, located in 18 states, and serving some 1,500,000 acres of land, in operation or in process of construction.

The withdrawal of land for national forests, national parks, national monuments, and national wildlife refuges, as well as the creation of the federal reclamation program, had all been made under specific authority granted for these purposes by Congress. But under the doctrine of moral stewardship, as evolved by Roosevelt and Pinchot, the President also withdrew public land for purposes for which no specific authority existed in the form of federal laws. In this latter category were his withdrawal of 4,699,160 acres of phosphate lands and 3,928,780 acres of water power sites for the purpose of preventing monopolistic acquisition. In like manner he also temporarily withdrew 79,650,002 acres of coal land to permit scientific classification and sale at appraised prices, and some 4,000,000 acres of oil land to prevent fraudulent entry and to permit accurate classification.²

²E.Louise Peffer, op.cit.,107-108,115. The oil land was located in California, Louisiana, and Wyoming.
Chapter VIII
The Taft Era -- 1909-1913

1. Changes in Personnel and Philosophy

On March 4, 1909, William Howard Taft became President of the United States. Although Taft had been handpicked by Roosevelt and endorsed by Pinchot to carry out Roosevelt's conservation program, there were several signs apparent early in 1909 to indicate that storms might lie not far ahead. First of all, although Taft agreed with many of the goals that Roosevelt had set in the field of conservation, there already had been considerable differences of opinion between the two men over the proper means to be utilized in obtaining these ends. Thus Roosevelt, in developing the doctrine of executive stewardship, had relied heavily on a broad exercise of the executive powers; Taft, on the other hand, as a lawyer, believed in a strict interpretation of the executive authority and held that while many of President Roosevelt's actions may have been within the letter of the law, they exceeded the spirit or intent of the law.¹

Second, Taft decided to have his own Secretary of the Interior. Pinchot's close friend, James R. Garfield, was therefore asked to resign, and Taft chose Richard A. Ballinger of Seattle, Washington, as the new Secretary. Ballinger had been a college friend of the

President and had served as Commissioner of the General Land Office, under Garfield, from 1907 to 1909. Although Pinchot was retained by Taft as Chief of the Forest Service, the change in Secretaries of the Interior meant that Pinchot would no longer coordinate the activities of the Departments of Agriculture and Interior as he had under Roosevelt. In essence, then, Pinchot was reduced in power to the status of a bureau chief, and this alteration also forecast possible changes in the emphasis of the new administration's conservation program.¹

2. The Ballinger-Pinchot Controversy, 1909-1910

The storm was not long in breaking. Shortly after entering office as Secretary of the Interior, Ballinger launched a campaign to curtail federal reclamation work in favor of private irrigation development. He attacked reclamation policies and reclamation officials in an effort to discredit them. He modified the Bureau of Reclamation policy through legal decisions and administrative orders, and stated publicly that Frederick H. Newell had established practices not authorized by the Reclamation Act.² By August 1909 Ballinger had instituted a second change in policy; he ended the close cooperation between the Departments of Interior and Agriculture on forestry matters that had existed under the Roosevelt administration. When Pinchot attempted to continue this advice, Ballinger


reported to the President that the Chief Forester was meddling in
the affairs of the Interior Department, and Taft supported his
Secretary's position.¹

The change in policy, however, that aroused Pinchot to action
had to do with the waterpower sites, the 3,928,780 acres withdrawn
by Secretary Garfield in 1908-09. Ballinger was of the opinion that
these mass withdrawals were not justified by any existing law and,
in March 1909, began restoring these reserved sites to entry.

On learning of the Secretary's action, Pinchot hastened to the
President and received Taft's assurance of his continued and active
support of the conservation program. On Taft's direct orders,
Ballinger again withdrew the power sites, but with two modifications
in the original situation. First, on the basis of accurate informa-
tion provided by the Geological Survey, only public land with actual
power sites were withdrawn a second time, thus reducing the reserved
land to 421,129 acres. Second, Ballinger closed this reserved land
to all types of entry. This latter action, in effect, "locked up"
these sites and halted any possible progress towards developing a
leasing policy for waterpower sites located on public land, a pro-
gram favored heartily by both Roosevelt and Pinchot, but opposed by
Taft.²

² Samuel P. Hays, op.cit., 160-163; M. Nelson McGeary, op.cit., 121-
122; E. Louise Peffer, op.cit., 111-113.
Ballinger's closing of power sites to use, combined with his hostility to reclamation policy, and the end of Departmental cooperation in forestry matters, left Pinchot still highly suspicious of the Secretary's views on conservation.

In July 1909 there then began a chain of events that was to trigger a public explosion between the two men. Louis R. Glavis, a subordinate in the General Land Office of the Department of the Interior, brought to Pinchot's attention what the Chief Forester interpreted to be evidence of collusion between Ballinger and the Morgan-Guggenheim Syndicate in claiming public coal-land in Alaska. In September, 1909, Pinchot launched an aggressive campaign, both within the government and in the nation's press, against Ballinger, forcing President Taft to take a stand on the question.

After investigating the matter, Taft decided that there was nothing against Ballinger and dismissed Glavis. Pinchot, however, refused to accept the President's decision and his efforts at compromise, and decided to "make the boss fire him." A letter of the Chief Forester to the Senate, violating a rule prohibiting executive subordinates from corresponding directly with Congress, left Taft little choice, and Pinchot was fired on January 7, 1910. The Ballinger-Pinchot controversy was now before the nation.¹

From January to April 1910, a Joint Committee of the Senate and the House investigated the activities of both the Department of the Interior and the Forest Service. The policies and viewpoints of Pinchot and Ballinger on conservation issues were thoroughly aired in a strongly political atmosphere. Ballinger struggled to defend his personal integrity, while Pinchot, attacking the administration's conservation policies, aimed his blasts over the investigating committee's head to the press and the public at large.

"Although not formally charging corruption, Pinchot gave at least some of his friends the impression that he considered the Secretary dishonest," and this was the aspect of the controversy that was stressed in the nation's newspapers.¹ Pinchot's actual charge was that Ballinger was not sympathetic to conservation and that the Secretary had deceived the President.² As Pinchot put it: "It is not enough that a man who is charged with the responsibilities of the Secretary of the Interior toward Conservation can not be proved to be actually hostile. Unless it can be proved that he is actively friendly it goes without saying that he is unfit for the place."³


Pinchot also informed the Commission: "The imperative duty before this country is not merely to get rid of an unfaithful and public servant. A far more important duty is to bring about a fundamental change in the law and the practice toward conservation, to prevent for the future what has been in the past, the useless sacrifice of the public welfare, and to make possible hereafter the utilization of the natural resources and the natural advantages for the benefit of all the people instead of merely for the profit of a few."¹

The evidence submitted in Congressional investigation as to Ballinger's complicity in the Alaska coal land deal was inconclusive. The majority report of the Congressional investigating committee found him innocent of the charge. Two minority reports dissented. The case as tried in the nation's press found Ballinger guilty. His usefulness ended, Ballinger resigned in March, 1911, and he lived out the remainder of his life under a cloud.²

In an effort to heal the wide breach that appeared in the Republican Party as a result of the bitter Ballinger-Pinchot controversy, Taft appointed to the cabinet two men favorable to the Pinchot point of view: Walter L. Fisher as Secretary of the Interior and Henry L. Stinson as Secretary of War. Taft also chose Henry Solon Graves, Dean of the Yale Forestry School and a close friend of


Pinchot, to replace Pinchot as Chief of the Forest Service. The immediate results of Pinchot's crusade were therefore favorable to the continued prosecution of the Roosevelt-Pinchot conservation program, but the Ballinger-Pinchot controversy also left deep wounds and a bitterness that were to linger on for many years.³

3. The Conservation Movement Legitimatized, 1909-1913

Prior to the Pinchot-Ballinger controversy becoming a public matter, Taft and his Secretary of the Interior continued many of the policies established by Roosevelt. Up to July 1, 1909, the Geological Survey had appraised 742,573 acres of withdrawn coal land and valued it at a total of $30,488,351, which was twice the amount that would have been received under the minimum prices previously charged under the Act of 1873. When valuation had been completed the Department of the Interior reopened this appraised land to sale at the new prices.² In some areas Taft and Ballinger went far beyond anything Roosevelt had done. Thus in September, 1909, when George Otis Smith, Director of the Geological Survey, suggested for a second time the urgent need of making withdrawal of oil lands to conserve petroleum resources for the Navy, Taft and Ballinger agreed and withdrew from all forms of entry 2,871,000 acres of petroleum land in California and 170,000 acres of oil land in Wyoming. Between


²Samuel P. Hays, op.cit., 86-87.
that time and June 30, 1910, they established new oil reserves with 2.7 million acres. In this same period 2.2 million acres were restored to entry after investigation by the Geological Survey revealed that they were not likely to contain oil.¹

As has been noted, Taft was seriously concerned by Roosevelt's withdrawal of public land as waterpower sites and phosphate land. These reservations had been made without specific authority granted by Congress and were based only on court decisions concerning the general power of the executive branch.

At Taft's urging, Representative Charles E. Pickett of Iowa, on April 5, 1910, introduced a bill to remedy this situation. As finally passed on June 25, 1910, the Withdrawal or Pickett Act gave the President the authority to make "temporary" withdrawals of public lands from all forms of sale or entry for any public purpose; the purpose was to be specified in the orders of withdrawals. The force of the word "temporary" was nullified by a concluding clause, which read "and such withdrawals or reservations shall remain in force until revoked by him [the President] or by an act of Congress."

To make certain that the Pickett Act could not be interpreted as a repeal of the 1907 law restricting the power of the President to create forest reserves in the six Northwestern states, this prohibition was repeated in the Withdrawal Act.²

¹E. Louise Peffer, op.cit., 114-115; Samuel P. Hays, op.cit., 89-90.
²E. Louise Peffer, op.cit., 115-117; Samuel P. Hays, op.cit., 163-164.
The Pickett law thus accepted the previous withdrawals made by President Roosevelt, while at the same time establishing certain restrictions on the President's use of this power. But like the Forest Reserve Act of 1891, the Withdrawal Act of 1910 failed to make any provision for the use of the withdrawn land. The use problem was not to be resolved until 1920.¹

On the question of hydroelectric development in navigable streams, Taft believed that the federal government could constitutionally charge a rental for power produced at dams constructed by the federal government to improve navigation, but that the government could not do so at privately constructed dams. As Secretary of War, Taft had been forced by Roosevelt and Pinchot to suppress these opinions, but as President Taft proceeded to sign a number of bills granting perpetual and unlimited franchises for the construction of private hydroelectric dams in navigable streams. The General Dam Act of June 23, 1910 provided authority for charging fees of power corporations to defray the cost of federal public improvements, if federal reservoirs and national forests improved the navigability and water supplies at the power company constructed dams. But as interpreted by Taft and the Corps of Engineers, such charges were not actually imposed.²

¹E. Louise Peffer, op.cit., 118; Samuel P. Hays, op.cit., 164.
²Samuel P. Hays, op.cit., 164-165.
Under Taft's direction, and partly as a result of the Ballinger-Pinchot controversy, relationships between the executive departments, in regard to control of natural resources, were redefined. Steps instituted by Roosevelt to coordinate the activities of all water and land resource agencies in the administration of public lands were halted. With Pinchot gone, Taft more firmly intrenched the Corps of Engineers and the Department of the Interior in their respective spheres, and thereby dealt a blow to plans and hopes for a more comprehensive resource management program.¹

Under the direction of Pinchot's friend and successor, Henry S. Graves, the Forest Service continued to administer the national forests along the lines laid down by the Roosevelt administration.²

On March 1, 1911, Taft signed into law the Weeks Act, so named after Representative John W. Weeks of Massachusetts, who introduced the bill. The Weeks Act was a landmark in national forestry legislation on three counts. First, it extended the national forest system to the East, thus for the first time embracing the entire country. Second, it authorized the first large-scale acquisition by the federal government of privately owned land to be added to the public domain for public purposes, in this case to form eastern national forests. Third, the Weeks Law provided the first federal financial aid to states that would take up a program to protect from

¹Samuel P. Hays, op. cit., 172.

²M. Nelson McGeary, Gifford Pinchot, 186.
fire their timberlands situated at the headwaters of navigable streams, thus stimulating a rapid expansion of fire prevention activities throughout the nation on the state level.

The Weeks Act authorized the federal purchase of some 287,000 acres of private forest land located in the Southern Appalachian Mountains and the White Mountains of New Hampshire, and an initial appropriation of $11,000,000 was made for this purpose. Also appropriated for fire prevention was $200,000; eleven states were able to qualify for federal assistance in this new activity in 1911.1

The program of federal wildlife refuges was continued by Taft. On March 4, 1913, he signed into law the Migratory Bird Act, which gave the federal government the authority to regulate the hunting of wild ducks, geese, and other migratory birds. The law defined the meaning of migratory species and gave the U. S. Department of Agriculture the authority to establish closed seasons during which hunting was to be prohibited.2

In September 1909, President Taft invited John Muir to accompany him on a trip to Yosemite. In October the two men visited the national park, and Muir grasped the opportunity to show the President the beautiful Hetch Hetchy Valley. Secretary of Interior James R. Garfield had signed a permit on May 11, 1908, granting Hetch Hetchy

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2 Samuel P. Hays, op. cit., 190; Van Hise and Havemeyer, op. cit., 453.
and Lake Eleanor to the city of San Francisco, but in 1909 the agreement had not yet been approved by a vote of the people of that city. In October, 1909, after having also visited the valley with Muir, Secretary of Interior Richard A. Ballinger ordered that another study of the question be made; and in February, 1911, he issued a citation to the city of San Francisco to show cause why the Hetch Hetchy valley and reservoir should not be removed from the permit. His successor, Walter L. Fisher, also refused to proceed with the permit, on the grounds that he had no authority to do so.  

Squarely opposed to each other on the Hetch Hetchy issue were the utilitarian conservationists, led by Gifford Pinchot, Frederick H. Newell, and the National Conservation Association (founded by the Chief Forester in the summer of 1909), and the preservationist conservationists, represented by J. Horace McFarland, president of the American Civic Association, John Muir, the *Century* Magazine editor Robert Underwood Johnson, Frederick Law Olmsted, Jr., son of the late great landscape architect, the American Forestry Association, the Sierra Club, the American Scenic and Historic Society, the Appalachian Club, and many women's clubs.

In November, 1909, Pinchot informed McFarland that the preservation of scenery in Hetch Hetchy could not "at this stage of the

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"game . . . go ahead of the economic and moral aspects of the case."\(^1\)

McFarland replied, "I feel that the conservation movement is now weak, because it has failed to join hands with the preservation of scenery . . . . Somehow we must get you to see that the man whose efforts we want to conserve produces the best effort and more effort in agreeable surroundings; that the preservation of forests, waterpowers, minerals and the other items of national prosperity in a sane way must be associated with the pleasure to the eye and the mind and the regeneration of the spirit of man."\(^2\) So bitter did the feelings of the two leaders become over the Hetch Hetchy question that they severed all personal relationships with each other in 1912.\(^3\) The fate of Hetch Hetchy was decided in Congress, and on December 13, 1913, President Woodrow Wilson signed a bill finally giving that valley to the city of San Francisco.\(^4\)

Under Taft's administration, Glacier in Montana, which had been set aside as a forest reserve in 1897, was established on May 10, 1910, as a national park.\(^5\) Taft used the Lacey or Antiquities Act of 1906 to create 11 new national monuments.\(^6\)

\(^1\) Cited in Samuel P. Hays, \textit{op.cit.}, 194.
\(^2\) Cited in Samuel P. Hays, \textit{op. cit.}, 194-195.
\(^3\) Samuel P. Hays, \textit{op.cit.}, 194.
\(^4\) Samuel P. Hays, \textit{op.cit.}, 193; John Ise, \textit{op.cit.}, 89-91.
\(^5\) \textit{Jaws Relating to the National Park Service}, 138; John Ise, \textit{op.cit.}, 170-176.
\(^6\) John Ise, \textit{op.cit.}, 157-159; Also see Appendix VIII.
The final bitter clash between the two schools of conservationists occurred over the question of creating a national park service bureau to administer the individual parks. J. Horace McFarland, Frederick Law Olmsted, Jr., and the preservationist associations renewed this proposal in 1910. Their plan was endorsed by Secretary of Interior Richard A. Ballinger in 1910 by Secretary of Interior Walter L. Fisher in 1911, and by President Taft in 1911 and 1912. The first annual national park conferences were held in 1911, 1912, and 1913 to rally public support for the proposal.\(^1\)

Pinchot and the Forest Service, on the other hand, in 1910, vigorously opposed the creation of new national parks that did not provide for economic development, arguing that national parks in general should be opened for such resource development as grazing, lumbering, and for water power.\(^2\) In 1911, Pinchot also privately attacked proposals to create a National Park Bureau, writing that such an agency was "no more needed than two tails to a cat."\(^3\)

When Chief Forester Henry S. Graves publicly suggested in 1911 that national parks should be administrated by the U. S. Forest Service,\(^4\)


\(^2\)Samuel P. Hays, *op. cit.*, 195; The Forest Service took this position on the proposals to create Glacier National Park.

\(^3\)Cited in Samuel P. Hays, *op. cit.*, 196; E. Louise Peffer, *op. cit.*, 176; John Ise, *op. cit.*, 188.

Secretary of Interior Walter L. Fisher countered by proposing that the Forest Service be transferred to the Department of the Interior.¹

The opposition of Pinchot and the Forest Service, however, was powerful enough to prevent Congress from passing a National Park Service Act until August 25, 1916.²

The key phrase of the 1916 Act, "to conserve the scenery and the natural and historic objects and wild life therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations," was written, perhaps with some degree of poetic justice, by Frederick Law Olmsted, Jr.³

¹E. Louise Peffer, op. cit., 176.
³Hans Huth, Nature and the American, 190-191; Citation from Laws Relating to the National Park Service, 10.
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PART II

SURVEY OF SITES AND BUILDINGS

General Discussion

The distribution of sites in this theme reflects the fact that the Conservation Movement originated largely in the East. It should also be noted that professional historians have devoted relatively little attention to a careful study of the rise of Conservation. This neglect has had its effect in the lack of interpretation on the subject afforded at existing sites.

A considerable number of important sites have been preserved by federal, state, and local governments, but they have survived mainly because these areas have possessed some special scenic, recreational, or utilitarian values, and they have not been particularly utilized to tell the story of Conservation. The National Park Service does not own or administer any area set aside particularly to illustrate or commemorate this part of our intellectual and cultural history. There are, however, five areas in the System which have associations with certain aspects of this theme. These sites are noted elsewhere in the study.
1. **FUR SEAL Rookeries (St. Paul Island), Pribilof Islands, Alaska**

The greatest single source of furs in the world, the Pribilof Islands, exhibit in living form today the fur resource that lured Russian, British, French, Spanish, and American fur hunters from the 18th century down to the present. The existing flourishing seal herds serve as an outstanding example of the international application of conservation principles, as embodied in the Convention of July 7, 1911, for their protection. The herds have several times been threatened with extinction due to indiscriminate hunting. The islands are owned by the United States Government and administered by the Fish and Wildlife Service of the Department of the Interior.

\[\text{This site was declared to possess exceptional value by the Secretary of the Interior on June 13, 1962, under Theme XXI-Political and Military Affairs: Special Study - Alaska History.}\]
2. HOHOKAM-PIMA IRRIGATION SITES, ARIZONA

Location: In the Gila River Indian Reservation, along the Gila River, Arizona, above the junction of that stream with the Salt River, in the vicinities of Sacaton, Coolidge, and Casa Grande National Monument.

Ownership: Various Indian farms on the Reservation.

Significance

When Father Eusebio Francisco Kino in 1687 made his first explorations of Pimeria Alta, he found the Pima Indians on the Gila River irrigating their crops from canals and ditches. Later travelers through this area never failed to remark upon the complexity of these irrigation projects and the skillful engineering that went into their construction.

Later archeological evidence proves that the irrigation works in the Gila and Salt River valleys antedate the historical period by hundreds of years, that the ancient people--the Hohokam--were the original builders, and that the Pimas were using the same basic systems of the ancients, though on a smaller scale. Likewise, modern agriculture in these valleys, whether Indian or Anglo, has tied the ancient systems in with modern reclamation projects.

Excavations have revealed that canals such as the Snaketown canal near Sacaton--though 10 miles long, were not unusual in size. In the Gila-Salt Valleys, canals 75 feet across the top, 40 feet

1These sites will be treated in Theme III, "Indian Villages and Communities".
at the base and 3 to 12 feet deep have been recorded. The average is perhaps 10 feet deep at diversion dams and 4 to 6 feet wide, forming great networks over the thousands of acres of irrigated land. Many of these magnificent structures, built as communal efforts with hand tools, have been leveled by modern agricultural and real estate developments. But many others remain—a large percentage of them still in use.

The Hohokam-Pima irrigation sites are the finest remaining examples of the ancient Indian science of reclamation. Modern reclamation systems in this area are not only theoretically related, but actually make use of the ancient canal complexes. This provides a striking and significant continuum, illustrating the similar environmental responses demanded of both ancient and modern man by the arid Southwest.

**Condition of the Site**

That these canals are on Indian farms and are still in use provides a species of integrity unusual, perhaps unique, in archeological or historical sites of such ancient lineage.

It is reasonable to suppose that the Tribal Council of the Maricopa Indians on the Gila River Reservation would be proud to exhibit selected sections of their canal systems—those that would most effectively illustrate the ancient-modern continuum mentioned above. These sites are readily accessible from Phoenix.

ROOSEVELT DAM, SALT RIVER PROJECT, ARIZONA

Location: In Tonto National Forest, Arizona, on the Salt River—some 80 miles east of Phoenix and 45 miles northwest of Globe via State Route 88, the Apache Trail.


Significance

The Phoenix of ancient mythology periodically rose from its own ashes to a revived and beautiful youth. In Arizona is a city of this name that has risen from the ashes of an extinct civilization. For moderns have used the same irrigation canals that the ancients used. And they have used essentially the same water conservation techniques—though expanding upon them with great water storage projects.

The modern Salt River Irrigation Project is a direct descendant of the ancient Hohokam projects on this river, of the historic Pima Indian projects noted by Father Kino, and finally, of the first modern projects beginning in 1867.

Pioneer Jack Swilling, noting the Army's demand for mule forage, first cleared an ancient ditch and opened the modern irrigation era in the Salt River country. He named the town that grew there Phoenix, for he saw the ancient analogy of regeneration. Swilling's Town Ditch reclaimed some 4,000 acres. In succeeding decades, one water company after another followed suit. Soon this land of perpetual
sunshine, of silted desert soil as rich as that of the Nile, was a
garden spot.

Population increased, but the waters of Salt River did not.
The limits of private reclamation enterprise had been reached. It
was time for a new force to enter.

As early as 1891, at the Irrigation Congress held in Salt Lake
City, Francis G. Newlands had advocated active Federal participation
in the reclamation field. In 1897, in the Chittenden Report, came the
first official advocacy of Federal participation in irrigation pro-
jects. And by the time Newland's Reclamation Act of 1902 was framed,
the Government's role was seen to extend beyond the impounding of
water to its distribution.

Roosevelt Dam, the world's highest masonry dam, was built to
provide adequate water storage for the Salt River irrigation complex.
A secondary purpose was to provide power facilities to assist in dis-
tributing the water through pumping stations. Later the power
potential of the project was expanded to encompass regular power
distribution to the Phoenix-Globe area via high voltage trans-
mission lines. Begun in 1906, Roosevelt Dam was completed by 1911,
though water distribution had begun the year before.

The story of Roosevelt Dam's construction is a saga in itself:
60 miles of wagon road had to be cut through precipitous mountains
to transport materials by mule team. Another road, reaching high
into the Sierra Ancha, tapped lumber sources. A specially constructed
13-mile canal provided temporary power for placing the giant rocks
and concrete in the dam, and a cement mill operated nearby.
Roosevelt Dam, Salt River Project, Arizona.

Courtesy U.S. Bureau of Reclamation
The rock-made dam is 284 feet high, 184 feet thick at the base, and 16 feet thick at the top. Its 1,125-foot length welds Salt River Canyon together at the confluence of Salt River and Tonto Creek, backing up a 23-mile-long reservoir covering 17,800 acres. Roosevelt Lake watered a quarter-million acres, an area now substantially increased by later dams and reservoirs built on the Salt and Verde Rivers, parts of the same massive project.

Describing Roosevelt Dam in 1932, Secretary of the Interior Ray Lyman Wilbur said:

The Government, 25 years ago, began its first great demonstration of welding mountains together, impounding flood waters, distributing them as needed, stabilizing the behavior of torrents, setting them to spinning turbines, developing communities under this new influence.

The enterprise has transformed this cactus-studded desert solitude into an intensively farmed, unbelievably productive cosmopolitan community....Phoenix, the metropolis of the Colorado Basin.¹

Condition of the Site

Roosevelt Dam is located in the canyon and mountain country of south central Arizona. It is a land of great beauty, centered in Tonto National Forest and retaining a high degree of integrity and wilderness atmosphere. On the shores of Roosevelt Lake is the Salt

¹Ray Lyman Wilbur, Conservation in the Department of the Interior (Washington, 1932), pp. 6, 7.
River National Wildlife Refuge. The dam and lake are part of an operating reclamation project, the Salt River Irrigation Project.

References: Herbert Eugene Bolton, ed., Kino's Historical Memoir of Pimeria Alta (Berkeley, 1948); Thomas Edwin Farish, History of Arizona, 4 vols. (Phoenix, 1915); George Wharton James, Arizona the Wonderland (Boston, 1917); Lynn I. Perrigo, Our Spanish Southwest (Dallas, 1960); Guy-Harold Smith, Conservation of Natural Resources (New York, 1950); Ray Lyman Wilbur, Conservation in the Department of the Interior (Washington, 1932); WPA Guide, Arizona (New York, 1940).
4. **LAKE MERRITT WILD DUCK REFUGE, CALIFORNIA**

**Location:** In Lake Merritt City Park, off Grand Ave. at Bellevue Ave., Oakland

**Ownership:** Owned and administered by the City of Oakland.

**Significance**

Lake Merritt Wild Duck Refuge is the oldest legally-established, public wildlife sanctuary in the United States. It has attained fame as a wintering grounds for wild ducks and is probably the most noted of the small wildlife sanctuaries maintained by local governments.

In 1852 Dr. Samuel B. Merritt purchased the land where Lake Merritt is now located; the property was then a slough. In 1869, acting as Mayor of Oakland, Dr. Merritt had a dam constructed that converted the slough into the body of water now known as Lake Merritt.

The bill that established Lake Merritt as America's first official wildlife refuge was introduced in the 1869-1870 meeting of the state legislature by Senator Edward Thompson and became law on March 18, 1870.

**Condition of the Site**

Lake Merritt, containing some 160 acres of water, is a salt-water lake with a broad causeway, and a movable floodgate. Located in what is now the heart of the business district of Oakland, Lake Merritt is an outstanding example of the attraction of migrating birds under somewhat adverse conditions. Thousands of ducks, principally pintails and canvas-backs, spend the winter here, attracted by the sanctuary, the food, and the resting grounds provided for them.
Hundreds of persons gather in the park to watch the behavior of the flocks of waterfowl that move in and out. An excellent Natural Science Center, with exhibits, is maintained to interpret the wildlife story for the visitors.

Lake Merritt Wild Duck Refuge, Oakland, California.
The ranch at Martinez was John Muir’s home from 1880 until his death in 1914, the period during which he emerged as one of the most important national leaders in the Conservation Movement.

From 1889 to 1914, John Muir played a critical and vital role in the drive to establish national parks, national forests, and to apply scientific methods of sustained-yield management to the federal forests. As a recognized and leading authority on the glaciers, mountains and forests of West, and as an able and popular writer on Nature, John Muir devoted his talents and nationwide prestige to forwarding the cause of National Conservation. In this task he served as an important, although unofficial, adviser to Presidents Grover Cleveland, Theodore Roosevelt, and William Howard Taft. Specific conservation achievements with which Muir was closely associated include: the creation of Yosemite National Park, General Grant National Park, and the enlargement of Sequoia National Park in 1890; he gave advice on the establishment of the first national forest reserves in 1891; he played a leading role, working with the National Forest Commission, 1896-97, in securing the National Forest Management Act of 1897, and defending the 13 new forest reservations established by President Cleveland, 1897-98; he was adviser to President Roosevelt 1901-1909.
supporting the establishment of the U. S. Forest Service and the transfer of National Forest Reserves to that agency, 1901-1905; securing the completion of Yosemite National Park, 1903-1906; and defending the Hetch Hetchy Valley section of Yosemite National Park from 1901 to 1913.

Condition of the Site

This site includes the Martinez adobe, a two-story adobe built about 1851, which served John Muir's residence from 1880 to 1890; the "Manor", a large two-story frame house built in 1881, which served as Muir's residence from 1890 until his death in 1914; and about five acres of the original 800-acre ranch. The two houses are both in excellent condition and have been little altered since Muir's day. They are used as private residences. Although now set in the midst of intense urban development, the topography has fortunately preserved to a remarkable degree the rural ranch setting of the remaining original five acres. These grounds contain many of the trees and plants set out by Muir himself.

John Muir House, Martinez, California.

N.P.S. Photo, 1961
6. FREDERICK LAW OLMASTED HOUSE, MASSACHUSETTS

Location: 99 Warren Street, Brookline, Massachusetts


Significance

From 1883 until his death in 1903, Frederick Law Olmsted lived at 99 Warren Street, Brookline. Olmsted, a man of innate ability and diverse talents, contributed more to the development of the urban park movement in the United States than any other individual through the originality and beauty of his plans for innumerable city parks. All of us today who enjoy metropolitan parks are indebted to Olmsted, "one of the vital artists of the nineteenth century."1

Olmsted was born on April 26, 1822, of prosperous parents, in Hartford, Connecticut. Although he attended Yale in irregular fashion, his real education apparently came from travel. In his youth he made extensive trips with his parents throughout the northern United States; in 1843 he sailed to China; and in the 1850's he travelled widely in Europe and the Southern United States. These travels not only resulted in a series of interesting and still valuable books, but also in Olmsted's observation of parks and scenery in many different places. Such impressions, combined with what he learned from the brief operation of a farm on Staten Island and some landscape activities in conjunction with it, provided an admirable

1Lewis Mumford, The Culture of Cities (New York, 1938), 219.
basis for his great work, the creation of urban parks in America.

New York City had begun the development of a large park in 1851, and in 1857 Gotham appointed Olmsted superintendent of the undertaking. Early in 1858, Olmsted's design for the park, produced in conjunction with Calvert Vaux, won the competition for a park plan. Named "Greensward," the design called for the creation of a rural atmosphere in the park in order to give the urban population relief from the city's brick and stone, noise and dirt. In May, 1858, Olmsted became the chief architect of the project, and between that time and 1878, with various absences, he devoted much time and effort to the development of Central Park. When finally dismissed from his position by politicians in 1878, Olmsted bade farewell to the first great city park in the United States.

As early as 1865, Olmsted had begun to design other urban parks. As the years passed, city after city felt Olmsted's touch, and by the time of his death he and his associates had planned some 80 metropolitan parks. In so doing, Olmsted created the art of landscape architecture in the New World. Moreover, innumerable semipublic and private parks sprang into being under Olmsted's guiding hand.

It is not exaggerating to say that Olmsted played one of the leading roles in reawakening America's appreciation of nature. Olmsted desired to bring the rural scene to the city in his urban parks, and this aim dominated all of his park schemes. Moreover, he sought to use the landscape as he found it, being especially
anxious to depend on native shrubs and flowers in the planting.

By 1870, the great designer also realized the value of saving natural areas outside of the city and this view led to his creation of the total park system idea. Beyond a practical application of the preceding ideas, Olmsted used his pen to promote those concepts. In speeches, reports, articles and books, Olmsted spread the gospel of the park and the necessity for urban planning. He also vigorously supported drives to preserve beautiful scenic areas, such as at Niagara Falls.

Between his numerous practical accomplishments and his writing, Olmsted conveyed a highly significant idea to America—that man in an industrial society must not lose contact with nature. This concept remains alive and continues to animate our urban parks.

Condition of the Site

Built in 1810, Olmsted's house is a two-story, clapboard building, painted grey. Both Olmsted and his son, Frederick Junior, brought about changes in the interior, so much so that little of the original remains inside. With the addition of rooms on the west, the building became a sixteen-room house.

Attached to the residence is Olmsted's office. Originally smaller than it is at present, the office received its last enlargement about 1917, some years after Olmsted's death. The Olmsted Associates, a landscape architect firm, now occupies the office.

Frederick Law Olmsted House, Brookline, Massachusetts. The building to the right is Olmsted’s office.
Henry David Thoreau erected a cabin close to Walden Pond in 1845 and lived in it until 1847. His experiences at Walden eventually resulted in a classic of natural history, *Walden, or Life in the Woods* (1854), that has given to many readers a greater appreciation of nature. Other of Thoreau's writings have also awakened, or re-inforced, amongst readers a deeper awareness of the need to protect the natural landscape in order that we may continue to gain from it the bounties that undisturbed shores, fields and ponds offer. Because of this, Thoreau continues to inspire and stimulate the nation's conservation movement.
8. **ADIRONDACK FOREST PRESERVE, NEW YORK**

**Location:** Adirondack Mountains, northern New York

**Ownership-Administration:** Dr. Harold G. Wilcox, Commissioner, New York State Conservation Department, Division of Lands and Forests, Bureau of Forest Recreation, Albany 1, New York.

**Significance**

The Adirondack Forest Preserve became the first state forest preserve in the nation when New York established it as a wilderness area in 1885. Since that date, innumerable other state forest reserves have been created, following the precedent created by the Empire State over 77 years ago.

Prior to 1885, private and commercial interests had made great and destructive inroads upon New York's timber lands. Lumbermen invaded the Adirondack region as early as 1813, and by the early 1860s vast areas in the Adirondack Mountains had been swept clean of trees. A protest against such wanton timbering appeared in the *New York Times* in 1864, plus a plea that a park be created in the Adirondacks. Further outcries against the despoliation of the mountainous area failed to halt the march of the axe. But some hope appeared on the horizon in 1872, when the state established a State Park Commission and authorized a survey of the lands in dispute. Verplanck Colvin, who had been among those calling for the protection of the Adirondack region, undertook the survey. In his reports, he never failed to advocate state action to preserve the lands he was surveying. As the years marched past, Colvin and other early participants in the struggle received increasing support in the fight to
save the Adirondacks.

By the early 1880's, many in New York favored measures to save the state's timber lands. The New York Chamber of Commerce joined the cause in 1883; much more significantly, the New York Board of Trade and Transportation also threw its influence behind the campaign in the same year. The latter body, unlike other groups, never gave up the fight, even when the cause seemed hopeless, and it played a major role in bringing about final success. The increasing clamor about the Adirondacks prompted some stirrings in the state legislature, but the legislators steadfastly ignored the reports of various committees appointed to investigate the matter. But in 1885, a major breakthrough occurred when the legislature enacted the "first comprehensive forest administrative act in America."¹

The act of 1885 created a vast state reserve of all publicly-owned forest lands in eleven counties in the Adirondacks, plus three counties in the Catskill Mountains. This landmark legislation stated that those lands were to be kept as a wilderness, never to be leased or sold. In addition, the act established a forest commission, the second in the country, to administer the reserve's lands. Although a gigantic step forward had been taken, loose administration by the forest commission aided and abetted further depredations of the Adirondack forests, so much so that great public resentment welled up in defense of the reserve. With the approach of a state constitutional

¹ Arthur B. Recknagel and Samuel N. Spring, Forestry (New York, 1929), 50.
convention in 1894, advocates of the wilderness area hit upon the scheme of bringing the new constitution to the defense of the state's forest areas. And the convention unanimously adopted a provision (Article VII, Sec. 7) that declared the state's present or future timber lands should always be kept as a wilderness, and that no timber should ever be sold from those lands. This provision has protected the Adirondack and Catskill Forest Preserves to this time.

**Condition of the Site**

Today, the Adirondack Forest Preserve, plus the Catskill timber lands, includes some 2,500,000 acres of state-owned land. In addition to providing for the continued protection of the forests, the preserve also serves as a vast recreational area. The state has developed 40 camping sites, plus many other opportunities for the enjoyment of the out-of-doors. Roads make many areas in the preserve accessible to the hiker and camper.

9. **CENTRAL PARK, NEW YORK**

**Location:** Bounded by Central Park South, Fifth Avenue, 110th Street, and Central Park West, in New York City.

**Ownership-Administration:** Newbold Morris, Commissioner, Department of Parks, Arsenal Building, Fifth Avenue at 64th Street.

**Significance**

Central Park occupies a unique position in the history of the park movement in America because it was the country's first urban park. Almost at the last possible moment, far-sighted individuals on Manhattan inspired the creation of a rural retreat for all the citizens, rich and poor, of the fast growing metropolis. And the park's subsequent overwhelming popularity impelled city after city to follow New York's lead.

At late as 1850, New York's 515,000 citizens possessed little opportunity to gain relief from the streets and buildings of their city. Gotham's most spacious open area, all of 20 acres, lay at the Battery. But some perceptive individuals, such as William Cullen Bryant in 1844 and Andrew Jackson Downing in 1848, had already proposed that New York develop a large park before the expanding city gobbled up all Manhattan. Bryant's paper, the *Evening Post*, repeatedly stressed the need for a park throughout the 1840's. Other voices also strengthened the call for a park, and during the mayoralty campaign of 1850 both candidates supported the idea. The winner of the election, Ambrose C. Kingsland, remembered his campaign promise and on April 5, 1851, sent a message to the Common Council proposing
the establishment of a park. By July, the state legislature had authorized the city to acquire a plot of ground known as Jones' Wood for park purposes, but by mid-summer strong opposition confronted that plan. Opponents of the Jones' Wood scheme involved numerous business men who scorned the need for a park, plus many others who desired a park but felt that a larger area would better serve the growing city. The latter group also sought what would become a central park as the metropolis grew; and it realized victory when the legislature authorized New York to purchase the land that now forms most of Central Park.

The northern boundary of New York rested on what is now 34th Street when the city began to acquire the land between present-day 59th and 106th Streets for Central Park. By 1856, some 7,500 lots in the area had been bought for $5,069,693, which sum included awards to owners of land bordering the park area, and a park commission had been created. But in the following year, the state took away city control of the park and created an independent park commission of eleven people. This new commission found park matters in great confusion, with the projected park swampy, littered with rubbish and swarming with goats.

The appointment of Frederick Law Olmsted as superintendent of Central Park in the fall of 1857 marked a turning point in the park's development. A dynamic and resourceful person, Olmsted, when he discovered his superior would not object, entered a plan called "Greensward," in conjunction with Calvert Vaux, in the
competition for a park design. In April, 1858, the commission declared Olmsted's plan, one of thirty-five, the winner, and shortly after being awarded the $2,000 prize, Olmsted became the park's Architect-in-Chief.

Olmsted's design decreed that the park should have a rural nature and that all architectural and engineering features should be subordinated to that premise. That fresh concept governed the development of Central Park, and the idea subsequently became basic in the growth of the urban park movement in the United States.

Under Olmsted's supervision, 2,500 men labored in the park by October, 1858. Paths, roads, bridges, lakes and planting were all well underway before winter slowed the work. During 1859, Olmsted greatly advanced the development of the park, so much so that the public became quickly enrapured with its new possession. Thousands of people began to enjoy the park's benefits—not only the rural atmosphere, but also the paths, bridle trails, band concerts, and in winter, ice skating. And in 1859 the park was extended to 110th Street, although the city did not acquire the land until 1863. By 1866, most of the park had been completed. Olmsted, who had already resigned from and then rejoined the park several times, remained associated with Central Park until 1878, when politicians brought an end to his long and beneficial influence upon the rural retreat.
Central Park, as events proved, did more than just provide a country-like area for New York's masses. Even before fully finished, the park stimulated in tremendous fashion outdoor recreation. Again, the park greatly increased land values in the area surrounding it. More importantly, the art of landscape architecture found its birth in Central Park. Finally, the park influenced many cities to create similar open and landscaped areas, and the great parks in Brooklyn, Boston, Chicago, and countless other urban centers, are descended from Central Park.

Condition of the Site

Central Park continues to reflect Olmsted's vision of a rural area in the city. Some buildings have intruded upon the park, notably the Metropolitan Museum of Art, and automobiles have replaced carriages on the roads, but the trees, paths and lakes still please a vastly increased city population. The pleasure Central Park brings to untold thousands is obvious to anyone who visits it on a pretty Sunday afternoon.

Central Park, New York, looking north.

Photo courtesy Lockwood, Kessler and Bartlett, Inc., New York
Dr. Franklin B. Hough, in the decade of the 1870's, impressed upon the public and the federal government, as no one else had managed to do, the rapid destruction of the nation's forests. His efforts to awaken the country to the terrible waste of its timber resources brought about his appointment as America's first federal forest official, and in that capacity he laid the basis for the development of the present United States Forest Service.

Throughout his life, Hough displayed a great variety of interests. Born on July 22, 1822, he entered Union College in 1840, was graduated in 1843, and then decided on a medical career. Admitted to Western Reserve Medical College, he received his M. D. degree in 1848, whereupon he established a practice in Somerville, New York. Greatly intrigued by local history, he collected and edited historical materials pertaining to the early history of the area. But Hough also displayed deep interest in geology and botany. All such interests had to be put aside with the outbreak of the Civil War, and until 1863 Hough served first as an inspector in the United States Sanitary Commission and then as a surgeon in the 97th New York Volunteers. Upon his return from the war, Hough established residence on Collins Street in Lowville.
Some years after settling in Lowville, Hough became alarmed at
the nation's reckless use of its forests. Oddly enough, his concern
about the accelerating devastation of timber lands stemmed from his
supervision of the New York state census in 1855 and 1865. In com-
paring the reports for the censuses, Hough observed that the produc-
tion of forest products had greatly fallen for certain areas in the
state between 1855 and 1865. As a result, Hough realized that our
forest resources were not limitless and that action should be taken
to protect the timber lands. But it was not until 1873, when he
spoke before a meeting of the American Association for the Advance-
ment of Science, that he elicited an effective response from an
audience. In his speech, entitled "On the Duty of the Government
in the Preservation of Forestry," Hough pointed out that as forests
extended from state to state, the problem of protecting them concerned
the nation. Moreover, he declared that training in forestry was
vital, and that forestry education should be developed in the United
States. Greatly impressed by the speech, the Association authorized
the drawing up of a memorial to be presented to Congress. Hough be-
came its main author. Once sent to Washington, the memorial failed
to receive immediate action. During the following two years, Hough
continued to press the case for forest preservation before the public,
presenting in one instance several talks on forestry at the Lowell
Institute, Harvard University. Finally in 1876, Congress, by an
amendment to the appropriations bill for the Department of Agriculture,
acted upon the dormant memorial.

Instead of creating a commission, as the memorial suggested, to study the nation's forests, Congress simply authorized the Department of Agriculture to investigate the forests and submit a report on timber lands and forestry practices. Subsequently, Hough received from the Department the appointment as the first federal forest official on August 30, 1765, at $2,000 a year. Hough quickly organized a small unit, which later grew into the Division of Forestry and subsequently became the Forest Service. In the following years, Hough studied forestry problems and practices in the United States and Europe, producing three bulky reports that became instrumental in the development of forest management in the United States. This work later received international recognition as the International Geographical Congress, when it met in Venice, presented a diploma of honor to Hough.

In addition to his work as a federal employee, Hough helped to promote the cause of forestry by other means. He initiated the publication of the American Journal of Forestry in September, 1882; and although the journal survived only until October, 1883, it has been "credited with laying the foundation on which a native forestry literature has been built."¹ And in 1885 Hough helped write the bill that created the vast Adirondack Forest Preserve in New York.

Hough died on June 11, 1885. Since that date, his work in behalf of forestry has gained increasing importance and influence. With no hesitation, we may rightfully call him the father of forestry in the United States.

Condition of the Site

Hough's three-story brick house sits well back from Collins Street. Inside, the rooms have the high ceilings and windows typical of the period when the house was built, about 1861. A spiral stairway dominates the entrance hall. Today, the building is largely the same as when Hough lived in it and is in good condition. A semi-circular drive is in front of the house and the spacious lawn has many tall trees on it. The house and its grounds form a private residence.

Franklin B. Hough House, Lowville, New York.
NIAGARA RESERVATION, NEW YORK

Location: Niagara Falls

Ownership-Administration: Joseph Davis, President, Niagara Frontier State Park Commission, Niagara Falls, New York.

Significance

Today's visitor can enjoy the beauty and might of Niagara Falls due to the far-sighted action of the state of New York in 1885 in establishing the Niagara Reservation. In creating the reservation and subsequently eliminating the numerous eyesores that had sprung up along the shore line near the falls, New York, for the first time, used a state's power of eminent domain to acquire land for esthetic purposes. A startling precedent in its day, New York's creation of the Niagara Reservation has been followed in principle by state after state since 1885.

A visitor to Niagara Falls in 1830 saw how easily man could desecrate a natural wonder. Ugly factories, cheap hotels, alien Chinese pagodas and a plethora of blazing signs all testified to man's ability to denigrate nature. The disappearance of the falls behind man's handiwork produced some protest; in 1834 it was suggested that the land near Niagara Falls be shorn of its shame. But for many years no rescuing hand appeared, and by 1871 the prominent American author, Henry James, had joined those who had complained about conditions around the falls. Frederick Law Olmsted, a growing force in park affairs, also took up the cause, supporting agitation in behalf of Niagara Falls during the 1870's.
By 1879, the drive to free Niagara Falls of man's distractions began to take effect. New York's governor suggested action concerning the falls in his annual message to the legislature in 1879. Responding in a mildly enthusiastic manner, the legislature authorized a survey of the situation around the falls. Olmsted was one of those who helped to draw up the report concerning the scenery around Niagara Falls, which was sent to the legislature in March, 1880. The report recommended that the state purchase the land around the American falls in order that visitors could view the majestic scene from a proper setting. A memorial signed by the Vice President of the United States, the Governor-General of Canada, the American Chief Justice and numerous other outstanding Americans, Canadians and Englishmen supported the report, but to no avail. A new governor showed no appreciation of the report's suggestion, and he repulsed all efforts to gain favorable legislative action on that document.

Stymied, but not defeated, the adherents of the Niagara Falls movement redoubled their attempts in behalf of their cause. A flood of articles and speeches poured forth, all of them being intended to galvanize public support. In 1883, the proponents of a park at the cataract formed a Niagara Falls Association, which quickly attracted members and created additional pressure upon the state government. Indeed, a bill sponsored by the Association was presented to the legislature in the same year, and by the end of April it had been passed and signed by Governor Grover Cleveland. The
act created a commission to choose the lands that should be preserved near the falls; in a relatively short time the commission had selected a narrow strip of land along the northeastern shore. Final success for the defenders of the falls came in 1885, when in April a bond issue of $1,000,000 was authorized to pay for the land. On July 15, the state dedicated the Niagara Reservation.

The formation of the Niagara Reservation stands as a tremendous victory in the struggle to save grand aspects of our natural scenery. Once the park had been created, the state removed about 150 buildings and eradicated all raceways and flumes from the area, certainly tangible proof of the triumph of public interest over private property. No one can doubt the value of New York's landmark action concerning Niagara Falls, or the worth of subsequent similar moves by other states.

**Condition of the Site**

Now surrounded by the bustling town of Niagara Falls, the Niagara Reservation enables the visitor to see the wonderful falls from an area free of tawdry commercial activities. When originally created, the Reservation consisted of 412 acres, including Goat Island and nearby islets; today, the Reservation includes 430 acres. A new 381-foot observation tower enables the visitor to gain a spectacular view of the American falls, while paths throughout the Reservation carry one close to the river and the falls. Parking lots are available near the observation tower and on Goat Island.
Niagara Falls. The Niagara Reservation includes the area just beyond the American Falls and Goat Island, in the center of the picture.

Courtesy Niagara Frontier State Park Commission
BILTMORE ESTATE, NORTH CAROLINA

Location: Asheville, North Carolina, on U.S. 25, South.

Ownership-Administration: Biltmore Estate is privately owned. The Estate office in which the Biltmore Forestry School was located, is owned by the City of Asheville.

Significance

Biltmore Estate has been called the "Home of Conservation" in the United States. In 1888 George W. Vanderbilt began the purchase of 125,000 acres of farms, woods and forested mountains where he proposed to build the finest country home in America. Frederick Law Olmsted, the great naturalistic landscape architect, assumed direction of the development of the estate. His plans included a large arboretum, a game preserve and a managed forest. The forest was expected to be not merely ornamental, but a demonstration of a paying business.

In 1890 Gifford Pinchot returned from studying forestry in European universities determined to convince the American people, especially the lumbering industry, that their forests were not inexhaustible and that their treatment of them was all wrong. Pinchot's European teachers of forestry had all emphasized the fact that no real progress could be made in America until someone had demonstrated that a scientifically managed forest would be commercially profitable.

Biltmore Estate provided Pinchot the opportunity to begin his successful experiment in scientific forest management -- a work and career from which much in the broader field of conservation has flowed. George W. Vanderbilt in December, 1891 appointed Pinchot his manager.
to plan and develop the rebuilding of the Estate woodlands lying east of the French Broad River. These were lands whose fertility had been depleted by primitive farming. They had then been allowed to grow up in scrub oak and sassafras -- truly a discouraging prospect for profitable forestry.

Not only was Pinchot’s work at Biltmore trail-blazing in its purpose, but also in many of his methods. On hundreds of points his European-learned forest science had to be adapted to American species of trees, types of soil and climate. After a day with such problems, Pinchot restudied his books at night and hoped for the best when he had to invent new answers. To the surprise of the many skeptics, the first year’s work showed a small profit, and the forest was much improved. Though many years of conservation effort lay ahead, with this first comprehensive and systematic forest plan, Pinchot had proved his basic point.

Pinchot very soon widened the theatre of his efforts to lay effective foundations for conservation. In 1896 he was made a member of the National Forest Commission that worked out the plan for the U. S. forest reserves. Two years later he was named head of the Forestry Division, later the Bureau of Forestry, in the Department of Agriculture. He continued his interest in Biltmore, and new ideas and innovations continued to be tested in the Biltmore forests.

Dr. C. A. Schenck of the University of Darmstadt was brought over from Germany to succeed Pinchot as Chief Forester at Biltmore. The need for men with technical forest training was becoming
increasingly apparent. In the last decade of the 19th century the country had less than half a dozen trained foresters, and they had all been educated in Europe. A new profession was in the making, and there were no sources of training in America. Recognizing this need, Dr. Schenck founded the Biltmore Forest School in 1898. Following the German precedents of technical forest education, young men simply gathered around a capable practitioner or "master" who supplemented experience in the forest with lectures. Biltmore later became a traveling school, the classes visiting different parts of the United States and Europe. With World War I the school was discontinued. By then it had trained many of the foresters who later dominated the field in this country for some years. The Biltmore Forest School was discontinued in 1912.

Other notable forestry experiments were conducted at Biltmore under Pinchot, Schenck and later successors. In 1894 Vanderbilt greatly enlarged the scope of operations by purchasing some 80,000 adjacent acres known as the Pisgah Forest. Pinchot initiated planned management in these woodlands. In the course of his work in this section of the Estate, Dr. Schenck developed the basis for the "land use" concept of forestry and conservation. Several of the early experimental plots are still being studied. Records of plant growth, results of thinning and other studies are being continued by the U. S. Forest Service. In 1915, following passage of the Weeks Act of 1911, the Federal government acquired nearly 87,000 acres around Mt. Pisgah from the Vanderbilt Estate. President Wilson the next year proclaimed this the Pisgah National Forest -- the first national forest to be created in the East.
Condition of the Site

Since 1930 the Biltmore House and Gardens have been open to the public. The house is designed in the manner of the French Renaissance chateaux of Blois and Chambord. The gardens are extensive and one of the horticultural show places of America.

Important from the standpoint of conservation is the fact that there are still several hundred acres of white pine which were planted by Pinchot and Schenck. Today the Biltmore Forests are being harvested on a sustained yield basis consistent with the best ideas of modern forestry.

The building in which the Biltmore Forest School was conducted is still actively used by the Estate. This large story-and-a-half white stucco building with brick and wood trim is substantially unchanged. It is located on the plaza of what was formerly Biltmore Village, but is now a part of Asheville. Today the city owns it and rents space to the Estate for use as its office. The upstairs area where the school was located is now occupied by a branch of the Asheville Fire Department.

Biltmore Estate once included about 145,000 acres; the present estate includes 12,000 acres.

13. **GIFFORD PINCHOT HOME, GREY TOWERS, PENNSYLVANIA**

**Location:** Milford, Pennsylvania.

**Ownership:** Dr. Gifford B. Pinchot, 9 Meadow Road, Baltimore 12, Maryland.

**Significance**

Chateau-like in appearance, Grey Towers was the home of Gifford Pinchot, the preeminent crusader in the conservation struggle at the turn of the nineteenth century. Pinchot, who inherited the estate from his father, never lost his love for Grey Towers, although often taken away from its beauty and peace because of his activities. Indeed, he returned to the family home whenever he could, and it was at Grey Towers that he died on October 4, 1946, at the age of 81.

The extensive forests around Grey Towers reflect Pinchot's love of America's timber lands. When he entered Yale in 1885, Pinchot had already decided to become a forester, a decision that amazed all but his forest-conscious father. Upon graduation in 1889, Pinchot's determination to follow forestry as his life's work even startled the foremost forestry students in the United States. Despite all warnings against pursuing forestry because of lack of opportunity in the profession, Pinchot sailed to Europe to study forest practices in the fall in 1889 and remained there until December, 1890. While abroad, he availed himself of every opportunity to learn about Continental forestry methods and the lessons he absorbed provided the basis for his future work. Two ideas above all others guided Pinchot after
his return to America; first, that scientific forestry practices had
to be applied to American forests; second, that governmental leader-
ship was necessary in the development of American forestry.

Shortly after returning from Europe, Pinchot began to impress
many people with his enthusiasm for the preservation of timber lands.
He became the manager of George W. Vanderbilt’s private Biltmore
Forest in North Carolina in December, 1891, and by the time he left
the job he had applied, or adapted to local conditions, much of what
he had learned abroad. But a greater opportunity to promote scientific
forestry came in July, 1898, when President William McKinley appointed
the 32-year-old forester the head of the Forestry Division in the
Department of Agriculture. From the moment Pinchot assumed his new
position, he determined to secure the transfer of the federal forests,
which the department of the Interior administered, to his division.
But until that could be done, Pinchot used his forest-less office to
flood the nation with material about scientific forestry practices.
Moreover, he spoke, travelled, and entertained Congressmen in behalf
of scientific forestry, with good results, for on July 1, 1901,
Pinchot’s division became the Bureau of Forestry, with a greatly
expanded budget. But the assassination of McKinley and the accession
of Theodore Roosevelt to the presidency, presented Pinchot with an
unexpected and unequalled chance to apply his ideas.

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granted his zealous bureau head carte blanche in the field of forest
preservation. Thus, between 1901 and the end of the Roosevelt
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Roosevelt, an enthusiastic naturalist and a friend of Pinchot's, granted his zealous bureau head carte blanche in the field of forest preservation. Thus, between 1901 and the end of the Roosevelt
administration in 1909, Pinchot obtained the transfer of federal forests to the Department of Agriculture and organized the present Forest Service out of his old bureau. Beginning with no timber lands under his authority at the start of his federal service, by 1909 Pinchot administered 150,000,000 acres of forests and guided an organization of some 1,500 people. Pinchot, during this period, also promoted federal forestry research, establishing several experimental timber stations. From his advantageous position, Pinchot also strongly supported non-federal preservation activities. By 1909, for example, the Forest Service sent literature to 731,000 people.

Because of the wide-spread ramifications of his job, Pinchot, by 1907, realized that all aspects of the growing preservation movement should be coordinated. He began to use the word "conservation" to indicate a consolidated approach to preservation work, a movement concerned with not only forests, but also with all other resources, such as land, water, and mineral wealth. Roosevelt quickly accepted Pinchot's concept, and a federally appointed Inland Waters Commission, created in March, 1907, applied the unified approach to a study of the nation's rivers. Even more striking was the famous conference on natural resources held at the White House in May, 1908. The 34 governors in attendance, for example, ended their notable declaration on conservation with a plea that the nation protect the basis of its wealth, its natural resources. Pinchot, who had done so much to
organize the preceding conference, was made chairman of one of the conference's significant products, the National Conservation Commission. And the commission produced the world's first national inventory of natural resources in 1909.

The departure of Roosevelt from Washington in March, 1909, ended Pinchot's career as the nation's leading conservationist. Roosevelt's successor, William Howard Taft, dismissed Pinchot on January 7, 1910 for political reasons, and in the following years Pinchot devoted himself to politics. He never completely forsook conservation, as certain of his actions as Governor of Pennsylvania (1923-27, 1931-35) prove, but his great contribution to conservation had been made.

Since his death in 1946, nothing has tarnished the value of Pinchot's work in behalf of conservation. As a forester, he fathered scientific forestry in America; as a conservationist, he created the conservation movement. Both of those products of his fertile mind and enthusiasm have benefited the nation tremendously.

**Condition of the Site**

Grey Towers, built around 1886 by Pinchot's father, is in excellent condition. Made of stone, the building is dominated by three towers, two at the main entrance at one end and a third at a corner of the opposite end. The long side between two of the towers faces a lovely lawn and looks across the countryside to the mountains in New Jersey. In addition to the main building, there are several
other interesting smaller structures nearby, and the grounds are excellently landscaped.

14. **THE WISSAHICKON VALLEY, PENNSYLVANIA**

**Location:** Fairmount Park, Philadelphia.

**Ownership-Administration:** Mr. Harold W. Saylor, Commissioner, Fairmount Park Commission, Philadelphia.

**Significance**

The section of the Wissahickon Valley that lies in Fairmount Park possesses a geological, botanical and historical quality that is unique for a park area that is situated within the boundaries of a major American city. A key section of Fairmount Park, the valley forms about a third of the park and extends from the confluence of Wissahickon River with the Schuylkill River to the Philadelphia County line, a distance of six and one-half miles. In the valley is some of the oldest rock formation in North America; numerous native and exotic trees, shrubs, flowers and mosses; and tangible and intangible remains of Pennsylvania's early history.

Although the Wissahickon River begins northwest of Philadelphia, it is the Fairmount section of the river and its valley that possess the greatest geological significance. Near Philadelphia, the stream, some million years old, is bordered by a rock formation known as Wissahickon Gneiss. This type of rock is between 400,000,000 - 450,000,000 years old, and is thought to have formed part of the base for the North American land mass. Wissahickon Gneiss is also found elsewhere in Pennsylvania, and in Maryland and other nearby areas, but the most excellent remains of the rock lie in the Fairmount section of the valley.
The Indians made the first human use of the valley. Indeed, the very name of Wissahickon is derived from the Delaware Indians, whose paths followed the creek. But it did not take the white man long to invade the valley after the founding of Pennsylvania, for around 1694 John Kelpius, a pietist, led a group into the area. Under Kelpius's leadership, the newcomers created a religious colony on the creek's north bank and only the death of Kelpius in 1708 caused the demise of the settlement. A reminder of this colony today is the Kelpius Spring in the valley.

In the years after 1706, more and more people moved into the Wissahickon Valley. Another religious group established a colony there around 1745, and a three-story, stone building, known as the "Monastery," is evidence of the long-dead settlement. Mill after mill also arose in the valley, and by 1793 24 mills stood along the creek's shores. Nearly sixty years later, sixty mills depended upon the Wissahickon River's waters for power. A reminder of this phase of the valley's history is the house of Thomas Livezey, the owner of the largest mill in the valley during the eighteenth century.

Although the valley contained numerous mills as late as 1850, people had already suggested that the valley's natural aspect was its greatest merit. The redoubtable Fanny Kemble, actress and journalist, spoke of the valley's beauty in her Journal. Edgar Allan Poe wrote a poem of praise, "Morning on the Wissahicon (sic)" in 1844 and John Greenleaf Whittier referred to the area in his poem, "The Pennsylvania Pilgrim." Public concern about the Wissahickon Valley
grew, so much so that in 1867 an act of the state legislature created a Fairmount Park Commission and authorized the commission to acquire the land bordering the creek near Philadelphia. Not only was the Commission charged with obtaining the land but also with preserving the beauty of the valley. In 1871 Frederick Law Olmsted submitted a preliminary plan for the proposed park. By 1873, the Commission had purchased the property along the creek; the Commissioners then ordered the removal of the mills on the Wissahickon. Moreover, the park Commissioners forced all but two of the inns and taverns in the valley to move. So rapidly and efficiently did the Commission do its work, that by 1876, the year of the Centennial Exposition, much of the naturalness of the area had been restored. Work continued after the great fair, with growing public support, and the valley's present appearance reflects the great accomplishment of the Fairmount Park Commission in recapturing the Wissahickon Valley for nature.

Condition of the Site

Fairmount Park's section of the Wissahickon Valley brings pleasure to millions yearly. The area is closed to automobiles, so individuals can hike along the valley's paths and trails, free of motor noise, engine fumes and the threat of sudden death. In 1925, an interested group formed The Friends of the Wissahickon in order to stimulate public support for the valley's protection. This group continues to exert a strong influence in shielding the valley from modern encroachments.

The Upper Wissahickon Dam, Wissahickon Valley, Fairmount Park, Philadelphia.
15. **WAPATI RANGER STATION, WYOMING**

Location: On U. S. Highways Nos. 14 and 20, some 30 miles west of Cody, Wyoming.

Ownership: United States Forest Service.

**Significance**

Wapati Ranger Station is the first ranger station in the United States built at Government expense. Erected as a supervisory ranger station for the Shoshone division of the Yellowstone Timberland Reserve in 1903, it was visited by Col. W. P. Cody, Chief of Foresters Gifford Pinchot, Secretary of the Interior James R. Garfield, Col. John Pitcher, Superintendent of Yellowstone National Park, and many others of prominence. Major Hiram Chittenden, well-known historian and engineer, made the ranger station his headquarters during his inspection trips as engineer during the construction of the Cody road.

The forest reserve in which the station is located, the first in the United States, was set aside by President Benjamin Harrison on March 30, 1891. In 1902, the original timberland reserve was enlarged by President Theodore Roosevelt and the new reservation was divided into four divisions, one of which is now the Shoshone National Forest and comprises 2,500,000 acres.

The original ranger station is now incorporated in the existing structure.

References: H. W. Thurston, former Forest Supervisor, Article, "The Oldest Ranger Station in the United States" (place of publication not stated).
Wapati Ranger Station, Wyoming.

N.P.S. Photo, 1961
Sites and Buildings in the National Park System Having Associations with Persons or Events Pertaining to this Theme.

1. Yosemite National Park, California.
Yosemite, world-famed for its scenic splendors, served as an important symbol and battleground in the cause of Conservation from 1864 to 1913.

Yosemite Valley and the Mariposa Grove of Big Trees, established as a state park on June 30, 1864 and April 2, 1866, was the first grant made by the federal government from the public domain of land for purposes of preservation and recreation. It was also the first state park to be established.

Yosemite was the training ground of John Muir, the great naturalist, from 1868 to 1874. It was the center of battle from 1890 to 1906 to complete the national park by re-including the original 1864 grant. Visited by President Roosevelt in 1903 and President Taft in 1909, Yosemite played an important role in the Roosevelt Conservation program. The park was also the scene of the famous battle and final defeat on the Hetch Hetchy Valley issue in 1913.

Established by Act of Congress, May 1, 1872, Yellowstone National Park was the first of the federal areas to be set aside and preserved by the U.S. Government for its scenic, scientific, and wildlife values. This Park contains the world's largest geyser area, spectacular falls of the Yellowstone River, and is one of the world's greatest wildlife sanctuaries. Its boundaries enlarged in 1926, 1929, 1930, and 1932, the Park contains over 2,221,000 acres.

The first of the National Monuments to be set aside by the Federal Government under the Antiquities Act, which authorized the President to preserve areas and public lands for their scientific or prehistoric interest, Devils Tower National Monument was established by Proclamation of President Theodore Roosevelt, September 24, 1906. There are now 83 National Monuments, comprising over 9,000,000 acres.

Although primary consideration will be given to Theodore Roosevelt under Theme XXI, Political and Military Affairs after 1865, it should be noted that he was a confirmed devotee of nature when he became president. As a result, he used his
position in the White House to advance the conservation of natural resources in every way that he could. Roosevelt translated the ideas of other conservationists into federal policy, supported non-federal conservation undertakings and personally galvanized widespread public support for conservation. It is not an exaggeration to say that without Roosevelt's enthusiastic support as president, the conservation movement would not have achieved a fraction of what it did between 1901-1909.

Established originally as Mount Olympus National Monument on March 2, 1909 with 636,600 acres, for the purpose of protecting and preserving the habitat of the rare Olympic or Roosevelt Elk, the Monument became a national park on June 29, 1938. Mount Olympus, together with the National Bison Range in Montana, was one of the first two large federal areas to be set aside to protect big-game animals.
OTHER SITES CONSIDERED

CALIFORNIA

1. Angeles National Forest:

Located in Los Angeles and San Bernardino Counties, in the
San Gabriel Mountains, the Angeles National Forest, es-
tablished December 20, 1892, was the second national forest
reserve to be created in the United States and the first to
be established in California. The National Forest, con-
taining 691,052 acres, still serves its original purpose
and is marked as California Registered State Historical
Landmark No. 717.

2. Big Basin Redwoods State Park:

Located in Santa Cruz County, 23 miles northwest of Santa Cruz.
The area, containing 11,043 acres, was established in 1902
as California’s first state park (after Yosemite). Originally
called California Redwood Park, the area was set aside to
preserve a virgin stand of redwood trees. Its formation
followed a long campaign carried on in the editorial columns
of the Redwood City Times and Gazette by Ralph Smith and
continued after his death in 1887 by Andrew P. Hill, early
photographer of the redwoods.

3. Golden Gate Park:

Located in the City of San Francisco, this great forest park
contains 1,013 acres and is a half a mile wide and more than
four miles in length. On March 31, 1866, Frederick Law
Olmsted, the great landscape architect and father of Central
Park in New York City, submitted his Preliminary Report in
Regards to a Plan of Public Pleasure Grounds for the City of
San Francisco (New York, 1866), which projected the beginnings
of a city park system, to the city fathers. Land for the
Golden Gate Park and other parks was set aside in 1873. A
start on the eastern end of Golden Gate Park and the Avenue,
or Panhandle as it is now known, containing 270 acres of good
arable land, was apparently made in 1873, under the direction
of William Hammond Hall, consulting engineer.
On September 30, 1886, Olmsted again visited San Francisco and consulted with the San Francisco Board of Park Commissioners and Superintendent of Parks Hall, who were then preparing a plan to complete the development of Golden Gate Park.

In 1887 John McLaren, a gardener from Scotland, was employed as superintendent of the project, and by 1900 he had converted the bare undeveloped sand dunes that formed the western portion (some 800 acres) of the Golden Gate Park, into a magnificent "public forest park", similar in spirit and intent, if not in detailed design, to the great New York City Central Park. Golden Gate Park still serves its original function and is owned by the City of San Francisco.

4. Mount Diablo:

Located in Contra Costa County, 26 miles east of Oakland, Mount Diablo was established as a wildlife refuge on March 23, 1878. It was the second such refuge to be established in California and the third in the United States. The area, containing 2,168 acres, became a State Park on April 26, 1931.

5. San Diego Mission Dam:

Located 13 miles northeast of Old Town, San Diego, in Mission Gorge, San Diego County, on the north side of U. S. Highway 80. The dam was constructed with Indian labor under the supervision of the Franciscan Fathers of the San Diego Mission sometime between 1800 and 1817; the exact date of building has not been established. The Mission Dam was one of the first irrigation projects built in Spanish California and is one of several examples of the white man's early efforts at irrigation in the West.

The dam was originally 220 feet long, 12 feet high and 13 feet thick, and constructed of native cobblestones placed in cement. The purpose of the dam was to control the flow of the water down the bed of the San Diego River, which was dry during the summer season. The dam formed a lake, and a gate in the dam permitted the water to escape during the dry period. Because a considerable amount of water was lost in river sands, between the dam and the mission, a flume or aqueduct of tile two feet wide and one foot deep, resting on a bed of cobblestones and cement, was constructed to convey water from the dam to the Mission.
By 1867 the dam and aqueduct were in ruins. In 1874, or shortly thereafter, the dam was repaired and put back into use. A considerable portion of the dam stands, and still backs up water in the valley. Nearly all traces of the aqueduct have vanished. The Mission Dam is marked as California Registered State Historical Landmark No. 52.

In the opinion of one authority on California history, the Spanish efforts at irrigation had "little significance on the wheat and barley ranches of the early American period." --such as the extensive irrigation undertaken by Edward Fitzgerald Beal on El Tejon Ranch in the San Joaquin Valley in 1851.¹

In comparing the San Diego Mission irrigation system with similar sites in California, it should be noted that the Santa Barbara Mission system, built in 1806-1807, comprised of a dam, two stone reservoirs, a filter system, aqueducts, and fountain, has survived to a remarkable degree. The original remains of the Santa Barbara irrigation system are most impressive and other portions have been restored.²

6. **Orland Reclamation Project:**

Located in Glenn County, on Stony Creek, about 22 miles southwest of Orland, or 20 miles northwest of Willows.

The Orland Irrigation Project was the first to be organized after the passage of the state's first irrigation law, the Wright Act of March 7, 1867. This law, introduced by C. C. Wright of Modesto, California, was designed to permit the taxpayers to create their own irrigation systems through organizing and bonding irrigation districts. The law served as the basic legislation on this subject in California. The early overlord of this region was Dr. Hugh J. Glenn of Missouri.


In 1867 he purchased 7,000 acres of Rancho Jacinto, settling at Jacinto in 1868, and by 1874 he had increased his holdings to 55,000 acres. From 1874 to his death in 1883, Glenn was leading grain farmer or "Wheat King" in the United States. Glenn's great holdings have now been broken up into many small farms.

The U.S. Reclamation Service began investigations in the Sacramento Valley in 1902, soon after the passage of the Reclamation Act. Included in the investigation was an area of from 40,000 to 50,000 acres located on Stony Creek on the west side of the Sacramento Valley close to the town of Orland.

Three reservoir sites for water storage were considered at that time, of which the East Park Site was considered as the most promising for development. The proposed dam was to be 115 feet high and capable of storing 26,000 acre feet of water.

The Orland Project was authorized by Secretary of Interior James R. Garfield on October 5, 1907, under the terms of the 1902 Act. Construction of the East Park Storage Dam was started in 1908 and completed in 1910. Also built during the same period were the Northside and Southside Diversion Dams. The Rainbow Diversion Dam and East Park Feed Canal were added in 1913-1914. The system now furnishes a full irrigation water supply for 19,811 acres of land.

7. Charles R. Rockwood Hall:

Formerly located in Calexico, Imperial County, on the international boundary, this adobe building was erected in 1905 by the California Development Company, a corporation organized by Charles R. Rockwood and his associates on April 26, 1896, for the purpose of developing the agricultural possibilities of the Imperial Valley through irrigation. The structure served as his office and headquarters of the irrigation district until 1924. Rockwood Hall was completely destroyed by fire in 1939; there are no remains.

Three pioneers, Dr. Oliver Meredith Wozencraft, Charles Robinson Rockwood, and George Chaffey, are associated with the idea of reclaiming the Colorado Desert in Imperial County, California. Dr. Wozencraft came to California in the gold rush of 1849 and in the same year conceived the idea of reclaiming the Colorado Desert. Finally obtaining favorable action from the state legislature in 1859, Wozencraft was given all state rights in the Salton Sink of California. His next step was to secure
a patent from the federal government for this land. In spite of repeated attempts, he died in 1886 without having obtained these rights. In 1882 Wozencraft also attempted unsuccessfully to interest George Chaffey in the project, but his appeal may have been a factor in leading Chaffey to undertake the effort in 1900.

In 1892, Charles Robinson Rockwood, a civil engineer, made a rediscovery of the agricultural possibilities of the Imperial Valley and renewed the development idea. Rockwood organized the California Development Company to accomplish the task in 1896, but was unable to obtain the necessary capital until 1900, when he formed an alliance with George Chaffey, a noted irrigation engineer and capitalist of Southern California. George Chaffey had made a career of founding agricultural colonies based on irrigation. He had thus created Etiwanda, with 2,500 acres of farm land in Southern California in 1881, and Ontario in 1882. In 1886 he went to Australia, where he began establishing colonies in that arid region with great success.

On joining Rockwood's California enterprise in 1900, Chaffey became the chief factor in the actual reclamation of the desert. He not only established but also named Imperial County. Water from the Colorado River was first turned through the intake gate at Pilot Knob on May 1st, 1901 and the following year the construction of the canals was completed. This feat transformed the valley; by 1905, when Chaffey sold out his interests, there were 14,000 people living on the former desert and 120,000 fertile acres were under cultivation.

In the spring and summer of 1906, the irrigation company engineers opened a new and dangerous intake for the canal at Hanlon Heading; at the next high water the mighty Colorado broke through and began to pour all its water into the Imperial Valley. Salton Sink changed into the Salton Sea and the Valley was threatened with complete inundation. Through a series of heroic efforts made by E. H. Harriman, president of the Southern Pacific Railroad, and his agents, the flow of the river was finally turned back into its normal channel on February 10, 1907, thus saving the valley for agricultural use.

Federal reclamation, conducted by the U. S. Reclamation Service, began in this area in 1905.
8. **Yuma Reclamation Project:**

Located in Yuma County, Arizona, and Imperial County, California, on the Colorado River.

Irrigation by private companies, headed by George Chaffey and Charles R. Rockwood, on the bottom lands of the Yuma Valley began in 1897, and the first water from the Colorado River was delivered to the Imperial Valley of California in 1901. (This phase of history will be treated in further detail in Theme XVIIa - Agriculture).

A survey of the Yuma Project was started by the Reclamation Service shortly after its organization in 1902. On August 31, 1903, President Theodore Roosevelt reserved and set aside the portion of the abandoned Fort Yuma Military Reservation located in Arizona, for federal reclamation use.

The Yuma project was authorized by Secretary of the Interior Ethan A. Hitchcock on May 10, 1904.

The U. S. Reclamation Service began construction on the Laguna Diversion Dam in 1905 and completed work in 1909. The federal government, in 1907 and 1908, also acquired the plants and facilities of several of the private irrigation companies and improved their facilities and added 61,25 miles of canals.

The Yuma Project provides water to irrigate 66,556 acres of land in the vicinity of the towns of Yuma, Somerton, and Gadsden in Arizona, and Bard and Winterhaven in California. The Reservation Division of 14,620 acres of the project is located in California and Valley Division of 51,926 acres is situated in Arizona.

9. **Yale Forest School:**

Located at Yale University, New Haven, Connecticut, the Yale Forest School is the oldest continuously operated forestry school in the United States. Founded with funds contributed by Gifford Pinchot and his family, Pinchot intended that the school meet the needs of American forestry. As a result, it was decided that the institution offer a two-year graduate
course, leading to a Master of Forestry degree. Seven
students formed the initial student body when the school
got underway in 1900, but by 1910 eighty-five men attended
the school. The school's graduates moved quickly into im-
portant positions in federal, state and private forest
activities. Over eighty per cent of the graduates, for
example, joined the United States Forest Service in 1902,
1903 and 1904. Throughout its existence, the Yale Forest
School has served American forestry very well and remains
a valuable product of the rise of interest in forestry in
the United States at the turn of the nineteenth century.

FLORIDA

10. Former Naval Live Oak Reservation, Santa Rosa Island, Pensacola Bay:

Early in his administration President John Quincy Adams
became alarmed over the dwindling supply of live oak
timbers. This concern arose from the fact that this wood
was considered the finest for use in the framework of ships.
Over-cutting of trees whose habitat was limited could
threaten the maintenance of the strong navy vital to national
defense. President Adams thus moved promptly to establish a
naval station in Pensacola, Florida in the live oak region.
At the same time he initiated a survey of live oak resources
along the coasts of Florida, Georgia and North Carolina.

When the survey indicated that Southern live oak forests were
indeed badly depleted, President Adams set aside on Santa
Rosa Island, across the bay from the new naval station,
30,000 acres containing large areas of thickly growing young
live oaks. In December 1828 Adams inaugurated a plan which
called for the thinning of existing stands so as to increase
tree growth, for the planting of young trees where needed,
and the experimental planting of live oak acorns on two
hundred acres to demonstrate the feasibility of this method
of tree propagation. A caretaker was appointed and twenty
slaves began work on this first federal effort at forest
management. In the administration of Andrew Jackson which
followed, this project was terminated almost before it was
well started.

The Reservation remained in government ownership until 1947,
but has not been managed under scientific conservation
principles. The Naval Live Oak Reservation thus represents
an interesting incipient national idea of conservation that
was too far ahead of its times. It has not made a signifi-
cant contribution to conservation progress.
11. Pelican Island National Wildlife Refuge, Sebastian:

President Theodore Roosevelt by Executive Order established Pelican Island as a sanctuary to protect Brown Pelicans on March 13, 1903. Pelican Island was the first sanctuary provided for the protection of wildlife. The refuge was originally placed under the administration of the Bureau of Biological Survey which was then in the Department of Agriculture. With the creation of the Fish and Wildlife Service in 1940, the Pelican Island Refuge came under its jurisdiction.

Since its origin, Pelican Island Refuge has provided nesting areas for the production of from 1,500 to 3,500 Brown Pelicans annually. The refuge is within the Indian River, offshore from the town of Sebastian, Florida. The land area is subject to daily inundation from the tides. The area is essentially a mass of mangrove and one large rookery. In view of the location and limited acreage, it has not been feasible to provide active management. Today aerial surveys made periodically and sign posting are the major measures for protection of the Refuge.

Pelican Island Refuge is of considerable interest as a first in the history of conservation. It does not represent an important person who was a force in the development of the conservation movement, nor have new conservation ideas emerged from its administration.

IDAHC

12. Arrowrock Dam, (Boise Reclamation Project):

Located on the Boise River, in Elmore County, on State Highway 21, 22 miles east of Boise. The Boise Project was the first large undertaking of the U. S. Reclamation Service in the Pacific Northwest.

The first right to divert water from the Boise River for irrigation purposes was granted in 1864 and the water was used to irrigate the townsites of Boise and Fort Boise. Agricultural activity in the Boise and Payette Valleys commenced in the early 1880's when settlers began filing on desert lands under private irrigation enterprises. By 1900, about 148,000 acres in this area had been placed under irrigation.
Arrowrock Dam, Completed in 1915, Boise Reclamation Project, Idaho.
Idaho was also the one state in which the Carey Act of 1894 was successful; three-fourths of all the land actually irrigated under the law was situated within the borders of this state. The Twin Falls South Side project, which was set up to include 240,000 acres, was highly successful and served as a model for a number of others. By 1917 Idaho’s Carey Act projects included 868,000 acres of which 456,000 acres were in productive use.

In spite of these successful private efforts, landowners petitioned for federal participation in 1902. Authorization for construction of the original Boise Project (now called the Arrowrock division) was granted by Secretary of Interior Ethan A. Hitchcock on March 27, 1905. The government undertook to construct reservoirs at Deer Flat (now called Lake Lowell) and at Arrowrock. Two earthen dams were completed in 1908 to divert water from the Boise River into the Deer Flat Reservoir and this reservoir, covering 9,335 acres, was completed in June, 1911.

In January 1911, construction began on the great Arrowrock Dam, a concrete thick arch structure, 334 feet high and 1,100 feet across at the top. This dam was completed in 1915 and was for several years the highest dam in the world. Its reservoir covers 3,100 acres and can store 286,500 acre feet of water.

A power plant was completed at the Boise River Diversion Dam in 1908 and placed in operation in 1912. Also constructed between 1906 and 1911 were 173.35 miles of canals.

13. **Minidoka Reclamation Project:**

Located eleven miles northeast of Rupert, in Minidoka County. This irrigation project differed from most of the early federal projects in that it actually represented a new venture on land that had not been previously developed by private irrigation efforts. In 1904 the area around the present cities of Burley and Rupert (on the Snake River) was nearly uninhabited sagebrush desert utilized only by a few scattered ranches. On November 17, 1902, acting on information provided by earlier U. S. Geological Survey studies, Secretary of Interior Ethan A. Hitchcock withdrew from public entry a large body of land embracing the proposed irrigable area of the Minidoka tract. The project was authorized by Secretary of Interior Hitchcock on April 23, 1904. Construction began on the Minidoka Dam in the same year and was finished in 1906.
Headwater storage began with the erection of the temporary Jackson Lake Dam in 1905.

Later major developments included the enlargement of Jackson Lake Dam in 1911 and 1916, and the construction of the American Falls Dam in 1925-27.

The Minidoka Project now irrigates more than a million acres of land.

14. Payette Game Preserve:

This game preserve, located in Boise National Forest, was the first wildlife refuge to be established by the state legislature in Idaho (1909).

IOWA

15. John F. Lacey Sites:

One of the principal early leaders in the Conservation movement, John F. Lacey (1841-1913) was born in Ohio. Moving to Oscaloosa, Iowa, at the age of 14, he became a lawyer. With the exception of two years, he served continuously in Congress from 1889 to 1907, where he served as Chairman of the Committee on Forests. As an ardent student of Indian affairs, forestry, and public lands, he was one of the earliest Conservationists. President Theodore Roosevelt said of Lacey that when there was "... a matter ... of consequence to the nation as a whole," Lacey could be relied upon to "... approach it simply from the standpoint of public service." There are no surviving historic sites closely associated with Lacey.

MASSACHUSETTS

16. Arnold Arboretum:

Located at Arbor Way, Jamaica Plain, Massachusetts, the Arnold Arboretum is the tree museum of Harvard University, founded as the result of a $100,000 bequest of James Arnold in 1868. Early in the 1870's, the university acquired land in West Roxbury for the arboretum, and in 1878 three eminent men,
Frederick Law Olmsted, Asa Gray and Charles Sprague Sargent created a plan for the tree farm. Following the planting of the first tree in 1886, Harvard attempted to find an example of every tree and shrub that could grow in eastern Massachusetts. Expeditions brought in specimens from numerous countries, with great benefit to the study of trees and shrubs. The arboretum's director, Charles Sprague Sargent, watched over the growth and development of the arboretum for 56 years, producing several basic works on trees during his directorship. Sargent's works made significant contributions to the growth of forestry preservation in the United States.

The establishment of the Arnold Arboretum reflected the rise of interest in America's forests in the latter half of the nineteenth century, but the arboretum played more of an indirect role than a direct one in halting our wasteful timber practices.

**MONTANA**

17. National Bison Range:

Located near Ravalli, Montana. Established on May 23, 1908, the National Bison Range was one of the early attempts of the Federal Government to preserve the bison from extinction. At the time of creation of this reserve, there were only two herds of bison under Government control: A small herd established in 1888 in the National Zoological Park in Washington, D.C., and the herd of 21 that had been installed at Yellowstone National Park. The two herds totaled 29 buffalo.

The creation of the National Bison Range, located on what was formerly the Flathead Indian Reservation, is regarded as one of the greatest achievements of the American Bison Society and its president, Dr. William T. Hornaday. The Society secured an appropriation of $30,000 for the purchase of the land and $10,000 for fencing it. Raising by national canvass the sum of $10,550, it purchased a nucleus herd of 3½ buffalo and presented it as a gift to the Government. Others were given, making a total of 40 buffalo. The Range contains some 18,500 acres of land. Now administered by the U. S. Fish & Wildlife Service, there are now 300-500 bison on the Range.
NEVADA

18. Senator Francis G. Newlands Home:

Located at 7 Elm Court, Reno, and owned by Mr. and Mrs. George Thacher, this was the former home of Senator Francis G. Newlands, father of the Reclamation (or Newlands) Act of 1902, which placed the federal government in the field of irrigation.

Newlands was born in Mississippi in 1848, graduated from Yale and Columbia, and went to California in 1870 to practice law. When his father-in-law William Sharon, wealthy silvermine owner and Senator from Nevada, died in 1889, Newlands moved to Nevada to manage the estate; from that time on he became deeply involved in the state's economic and political affairs. In 1892 he was elected to Congress, where he served in the House until 1903, and then in the Senate until his death in 1919. He played a leading role in Congress in the fight for federal irrigation, and, for over a decade (1907-1919), labored unsuccessfully to persuade Congress to adopt a multiple-purpose river development program for the entire nation.

Convinced that irrigation farming would provide the only remedy for Nevada's declining population, resulting from the working out of the mines, Newlands plunged into the task of promoting that cause soon after he moved into the state. At his own expense he investigated possible reservoir sites on Nevada rivers, and presented his findings to the public in a pamphlet published in 1891. Fearing that speculators might acquire these sites, he purchased several and offered to sell them to any water users' association for their original price plus interest charges. Newlands played a leading role in the first National Irrigation Congress in 1891.

In 1901 he proposed that the federal government finance irrigation through a Reclamation Fund composed of proceeds from the sale of Western public lands. His bill was selected from among several other irrigation bills for serious consideration, and, supported by both major political parties, the Newlands Bill was signed into law by President Theodore Roosevelt on June 17, 1902.

The Newlands home, a large two-story frame house, still stands in excellent condition, and has been little altered. The house is used as a residence. His office, located a short distance from the home also stands, but has been considerably remodeled and is now utilized as a residence.
Senator Francis G. Newlands Home, Reno, Nevada.
19. Newlands Reclamation Project:

Situated in Churchill, Lyon, Storey and Washoe Counties of western Nevada, the Newlands project (formerly known as the Truckee-Carson Project) was one of the first five Reclamation projects undertaken by the federal government and the first for the Far West. It conserves and diverts water from the Truckee and Carson Rivers and now irrigates 71,556 acres in Nevada.

The early settlers of this area irrigated their lands by simple diversions, relying on natural flow for their water supply. In 1903, 20,000 acres of privately owned land in the project area were irrigated and under cultivation by this method.

The first investigations in the Truckee and Carson River Basins were started by the U. S. Geological Survey in 1889 and were continued intermittently until the newly organized Reclamation Service commenced studies in the summer of 1902. The investigations consisted of surveys for storage reservoirs, including Lake Tahoe and the present Lahontan Reservoir on the Carson River, and a canal system.

The project was authorized by Secretary of Interior Ethan A. Hitchcock on March 14, 1903, as the Truckee-Carson Project, and was renamed February 27, 1919, as the Newlands Project, in honor of the late Senator Francis G. Newlands of Nevada, who had long worked for the passage of the Reclamation Act of 1902 and also for reclaiming the lower Carson Valley lands from recurring floods and drought.

Construction started in 1903. The Truckee River Diversion Dam (now called the Derby Diversion Dam) for diversion of water to the Carson River, and the Carson River Diversion Dam and main distributing canals (36 miles) for the Carson diversion, were finished in 1905. The 31-mile Truckee Canal was completed in November, 1906, and Truckee River water was diverted for use in the Carson division for the first time in 1907.

Construction began on the large Lahontan Dam on the Carson River in January 1911, and aided by the installation of the Lahontan Power Plant, finished in November 1911, was completed in June, 1915. The dam, 162 feet high, with a crest length of 5,400 feet, forms a reservoir with a capacity of 273,600 acre feet.

Construction of a dam for the control of storage on Lake Tahoe was finished in 1913. The Lake Tahoe dam is 16 feet high and has a crest length of 109 feet; its active reservoir capacity is 732,000 acre feet.
Lahontan Dam, Completed in 1915, Newlands Reclamation Project, Nevada.
NEW MEXICO

20. Galisteo Basin Sites and Zuni-Hopi Irrigation, New Mexico and Arizona.\(^1\)

These sites are tied together for they illustrate a different theory of reclamation from other Indian sites considered in this study. Irrigation in the Gila-Salt Valleys and in the Rio Grande Valley is based upon running water along major stream courses. The sites here considered are not located on major stream courses. Therefore reclamation is based on water storage.

At the abandoned Galisteo Basin sites 20 miles south of Santa Fe, the ancient Indians threw dams across arroyos and mountain canyons to form rainwater catch-basins; these reservoirs were then tapped as needed for irrigation purposes.

At the Zuni Pueblo south of Gallup, New Mexico, and the Hopi Pueblos in northeastern Arizona, a form of terrace irrigation is used. Sometimes called "waffle gardens," these terraces conserve rain-and handcarried-water by enforcing slow seepage from one terrace level to another.

Though these sites are interesting in showing sidelights of Indian irrigation methods, they are not of exceptional value when compared to the Gila-Salt River Valley sites.

21. Pueblos of the Rio Grande:\(^2\)

Indian irrigation in the Rio Grande Valley dates from about 1400. This agricultural technique came from the west, as did the Indians themselves following the long drought of the 13th century. The Pueblo irrigation canals were small, mere scratchings in the earth by comparison to the Hohokam systems. Without extensive archeological testing, it would be impossible to tie down original ditches, for continuous use in historical times has altered irrigation ditches and canals.

\(^1\) These sites treated in Themes II and III.

\(^2\) These sites to be treated in Theme II, "Early Indian Farmers."
22. **Acequia Madre, Santa Fe:**

This acequia or ditch is probably the best extant example of Spanish irrigation in the Southwest, excluding the California mission sites. A few city blocks of the stone-lined ditch remain in downtown Santa Fe south of the Santa Fe River. But historically, the Acequia Madre is overshadowed by the Acequia de la Muralla. The latter was pivotal during the Pueblo Revolt of 1680 and the reconquest by Don Diego de Vargas 13 years later, abandonment of the Governors Palace being dictated both times by cutting off this water supply. The Acequia de la Muralla is lost.

Spanish irrigation in the Rio Grande Valley was limited as compared to that practiced at the California Missions, and does not rate exceptional value classification.

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23. **John Burroughs Retreat, "Slabsides":**

Located at West Park, New York. John Burroughs (April 3, 1837—March 29, 1921) wrote his first nature essay in 1865, and by the time of his death his writings had given pleasure to innumerable Americans, from occupants of the White House to many of more humble position. Near his estate, Riverly, West Park, the naturalist built "Slabsides" in 1895 in order to have a retreat from the numerous visitors to Riverly. This two-story structure has walls made of slabs, a stone chimney and fireplace, and rough furniture constructed by the writer.

In the history of nature writing, Burroughs looms up as a most significant figure. But as his other famous retreat, Woodchuck Lodge, has already been accorded exceptional value under Theme XX, Arts and Sciences, Sub-theme of Literature, Drama and Music (47th meeting of Advisory Board, October, 1962), it is evident that suitable recognition has already been given the man.

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24. **New York State College of Forestry:**

Located at Cornell University, Ithaca, New York. The State of New York established the first four-year school of forestry in the United States in 1896. Dr. Bernhard E. Fernow, a
professional forester, became head of the undertaking and he inaugurated classes in a room in Morrill Hall at Cornell University in September, 1898. Five students formed the initial student body, but by 1903 seventy-three potential foresters studied scientific forestry under Dr. Fernow and two associates. In addition to attending classes at Cornell, the students also worked in a demonstration area in the Adirondack Mountains. Because of the rise of opposition to activities in the demonstration area, the forestry school became involved in a political battle and in 1903 the governor of New York vetoed the appropriation for the institution. This resulted in the closing of the school.

Even though the New York State College of Forestry had only a short life, it produced a number of men who became prominent in American forestry. But the school's early demise prevented the institution from developing true national significance.

NORTH CAROLINA

25. Home of T. Gilbert Pearson, and Guilford College, Greensboro:

Some of the most interesting as well as effective work for the protection of birds was accomplished by T. Gilbert Pearson. He was largely responsible for building the National Association of Audubon Societies into a large organization for the study and protection of birds. He also used the federated Societies as a great force in game bird and mammal protection. On occasion, he lent his enormous energy to the support of national park and forest movements.

After graduating from the University of North Carolina, Pearson became a teacher in what is now the Woman's College of the University, at Greensboro. He was a man of great charm and such obvious sincerity that people listened to him and supported him. The first Audubon Society in North Carolina grew out of his work at Greensboro. In 1903 he pushed through the legislature of the State a game law which was the first in any Southern or Gulf State.

Pearson then moved to New York to become secretary of the National Association of Audubon Societies and in 1920 became its president. His leadership was largely responsible for its great increase in membership and a very large endowment by 1932.
Pearson's greatest work was probably his leadership in obtaining Congressional action outlawing the use of feathers of non-game birds on millinery. The fight to stop this practice was begun in 1875, but took 35 years to accomplish.

The next triumph was his leadership in securing the adoption of the Migratory Bird Treaty with Canada, which was ratified in 1916. Finally, Pearson was tireless in pushing through Congress a bill for large and strategically located game refuges. These are still being established and are of much importance, especially as rest areas for birds in migration.

T. Gilbert Pearson added a strong emotional drive to the conservation movement that has made interest in wildlife a vital component of the movement in the United States ever since his time.

While Pearson's highly significant contribution is undeniable, we have thus far been unable to discover a site importantly associated with his work, his writings, or any significant aspect of his life.

The Pearson home at 1034 W. Market Street in Greensboro, North Carolina, though built by him, was the family home for a relatively short time. It does not seem to have much association with his writing, is not now owned by the family and has been somewhat altered in recent years.

Some of his earliest interest in bird life is associated with Guilford College in Greensboro. Pearson obtained two years' tuition and board at the college by selling them his extensive collection of mounted birds and promising to put in a reasonable amount of time in extending the collection. A large number of birds from this collection is still in the possession of the college, but they are presently poorly stored and maintained and are not an actively used and growing study collection. The college, however, does plan to allow a student group to re-do the birds, and the collection will then be kept in the Science Building. Pearson's associations with Guilford College do not at present appear to be strong enough to warrant an exceptional value designation.
26. Klamath Reclamation Project:

Located in Klamath County, Oregon, and Siskiyou and Modoc Counties, in California.

The irrigation of agricultural lands in the area now comprising the Klamath Project was initiated in 1882 by the Van Brimmer brothers. They built an irrigation ditch to their lands from White Lake, which joined Lower Klamath Lake in California. Private interests further developed the project by constructing the Adams Canal in 1886, which was also supplied from White Lake, and the Ankeny Canal in 1887, which diverted water from the Link River in Oregon. By 1903, approximately 13,000 acres were irrigated by private interests.

In 1903 the U.S. Reclamation Service made investigations which led to the first withdrawal of land by the Secretary of Interior Ethan A. Hitchcock in 1904 for developing a federal irrigation project. Early in 1905, California and Oregon ceded certain rights in Upper and Lower Klamath Lakes and Tule Lake to the United States.

Secretary of Interior Hitchcock authorized establishment of the Klamath Project on May 1, 1905; the Project called for the development of 236,401 acres of which 62% would be in Oregon and 38% in California.

Construction began on the project in 1906 with the building of the Main A Canal. Water was first made available on May 22, 1907. This initial construction was followed by the completion of the Clear Lake Storage Dam in California in 1910; the Lost River Diversion Dam in Oregon; and many of the distribution structures were finished in 1912.

Portions of the project were made a National Wildlife Refuge in 1908.

27. Malheur National Wildlife Refuge:

Located 26 miles south of Burns, in Harney County, on Malheur Lake. On August 8, 1908, for the first time since federal wildlife refuges had been established, large areas of public land were reserved by President Theodore Roosevelt for this purpose. Largely through the efforts of William L. Finley and a small band of supporters, Malheur Lake, Oregon,
and Lower Klamath Lake, California, were set aside as nesting grounds for migratory waterfowl. Once one of the biological wonders of the continent, the Malheur Refuge was gradually destroyed through diversion of water for irrigation. By 1930 the lake had dried up to such an extent that the colony-nesting birds were dispersed and the migratory waterfowl ceased to stop and nest. Only remnants existed of what had been one of the great wildlife spectacles of the country.

A small group in Oregon fought long and hard, first to save and then to restore the Malheur Refuge. Acquisition of the "P" and "Double O" Ranches, together with their water rights, in the 1930's permitted a successful restoration of the lake. Now containing some 174,161 acres, every species of waterfowl previously known to nest there have returned and the Malheur Refuge is probably the greatest single waterfowl nursery in the continental United States. More than 210 species of birds and 49 mammals have been found on the refuge. Located at the junction of two major flights to the Pacific flyway, the Malheur and Klamath Refuges attract hundreds of thousands and occasionally even millions of birds.

28. Lower Klamath Lake National Wildlife Refuge:

Located in the Klamath Basin in Siskiyou and Modoc Counties, California and Klamath County, Oregon.

This group of migratory waterfowl refuges is probably the most valuable of such refuges operated on areas used primarily for other purposes. Located at the junction of two major flights to the Pacific flyway, they at times attract hundreds of thousands and occasionally even millions of birds.

Lower Klamath Lake in California, already a federal reclamation project, was established by President Theodore Roosevelt on August 30, 1908, as a wildlife refuge. At that time it was a vast marshy lake, equal perhaps to Malheur Lake in Oregon as a biological wonderland. The Lower Klamath was then an overflow sump of more than 80,000 acres. The principal source of water for the lake was backwater from the Klamath River when in flood. The construction of a small diversion dam diverted this water for irrigation purposes and permitted the sump to evaporate until the only remaining marsh was that maintained by the flow of small streams.
In 1911 Clear Lake, California, the storage reservoir at the head of Lost River, also became a part of the Klamath Refuge (25,300 acres), as did Tule Lake (37,340 acres in California) in 1928, and Upper Klamath Lake (8,140 acres in Oregon) in 1928.

Much acrimonious debate occurred between the U.S. Reclamation Service and the U.S. Biological Survey over the diversion of water for irrigation, with the resulting decline of the area as a nesting ground for birds. A compromise was eventually reached and the area has gradually been restored to increase its value as nesting grounds.

29. Umatilla Reclamation Project:

Located in Morrow and Umatilla Counties, North-Central Oregon. In 1903-04 the U.S. Reclamation Service examined the Umatilla River and its tributaries and mapped the more feasible reservoir sites. A site was selected on irrigable lands east of the Umatilla River, near Hermiston. The Umatilla Project, consisting originally of only the present East and West divisions, was authorized by Secretary of the Interior Ethan A. Hitchcock on December 4, 1905.

Construction began on the project in 1906. The Cold Springs Storage Dam was completed in 1908 and the first water was available for irrigation in the same year.

The Umatilla Project is equipped to furnish a full supply of irrigation water for about 18,000 acres and a supplemental supply for about 13,000 acres.

30. Pioneer Post Office:

Located on SW Morrison Street, between 5th and 6th Avenues in Portland. In this building were held the great land fraud trials of 1904.

The Pioneer Post Office is also the earliest important public building still standing in Portland and it is probably the first really monumental building of any sort to be erected in the whole of the Pacific Northwest.
Pioneer Post Office, Constructed 1869-73, and scene of the federal land fraud trials, 1904, Portland, Oregon.
The cornerstone was laid in 1869 and it was completed about 1873, at a cost of $450,000, including the furniture. The design came from the office of the Supervisory Architect of the Treasury Department in Washington, D.C. The Supervisory Architect at that time was A.B. Mullet, whose best known monuments are in the heavy manner of the French Second Empire, sometimes referred to in this country as "General Grant Baroque." The Portland building is more conservative in style and like the San Francisco Old Mint, which it closely resembles, is done in a modified Classic Revival mode.

The building housed for many years the post office and the United States District Court. Many famous trials were held in this building. Important among them were the great land fraud trials, began in 1904 and continued for many years, that involved corruption in the General Land Office of the U.S. Department of the Interior, Senator John Mitchell of Oregon, and the San Francisco financiers John A. Benson and Frederick A. Hyde. These trials rocked the West and were utilized by the Theodore Roosevelt administration to urge reform of the federal land laws. (See pages 129-132 of text).

The building is in good condition and is still used as a post office.

PENNSYLVANIA

31. Joseph T. Rothrock House:

Located at the Northwest corner of Church and Lafayette Streets, West Chester, Pennsylvania.

Joseph T. Rothrock (April 9, 1838--June 2, 1922) occupied his home in West Chester from 1876 until his death in 1922. During these years he played a leading role in promoting scientific forestry practices in Pennsylvania. In his official position as head of the state's forestry program between 1895 and 1904, Rothrock introduced the creation of state tree nurseries, hired fire wardens, and began the State Forest School. On the state level, Rothrock is an outstanding figure in the rise of timber preservation activities in the United States.
32. Mormon Irrigation Sites:

Located in Salt Lake City. From the beginning of Mormon occupation in Utah, irrigation, based on communal effort and a completely new legal theory regarding water rights in arid lands, was the key to success. That the Mormons turned the desert into a garden in the first extensive irrigation project ever attempted by Anglo-Saxons is a miracle well known. Only the complete destruction of these original sites along City Creek in downtown Salt Lake City prevents exceptional value classification.

In the heart of the city, however, stands a monument that exemplifies this great Mormon achievement. It commemorates one of the best-known episodes in Mormon history. The meager crops planted in 1846 faced certain destruction by swarms of crickets when gulls from the islands of Great Salt Lake came to the rescue. They ate all the crickets and saved the crops. The Seagull Monument is a 16-foot column topped by a sphere on which are two gilded seagulls. Four high-relief bronzes on the sides of the base depict scenes during and after the cricket invasion.

33. George P. Marsh House Site:

Located at Church and Pearl Streets, Burlington, Vermont. 1864 is a landmark date in the history of conservation in America. George Perkins Marsh published in that year his famous book, The Earth as Modified by Human Action, in which he clearly cautioned man to safeguard his natural heritage. Marsh pointed to the rise of wastes and deserts in much of the classical Roman Empire, showing that man's destructive agricultural and mineral practices bore the blame for the disappearance of rich landscapes. But he

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1 These sites will be more fully discussed in Theme XVIIa, "Agriculture."
spoke more than just words of doom, as he suggested remedial steps to forestall the total destruction of our resources. Some of these called for the planting of windbreaks to help save the soil, the preservation of forests to aid in water conservation, the protection of trees for their own value and the abatement of the destruction of wildlife. In brief, as David C. Coyle says in his book, Conservation (New Brunswick, 1947, p. 123), Marsh's volume "gives a foretaste of practically all the modern ideas about conservation."

Unfortunately, Marsh's Burlington home fell victim to the wrecker's crowbar over a decade ago.

WASHINGTON

34. Yakima Reclamation Project:

Located at Sunnyside, and in Benton, Franklin, Yakima, and Kittitas Counties.

This project was the largest and most ambitious attempt at private irrigation undertaken in the Pacific Northwest. The first white settlers came to Yakima Valley about 1860. The first irrigation ditch of which there is authentic record, was constructed in 1864 and was built to bring water to a small garden near the Catholic Mission.

Individual, partnership, and co-operative enterprises began as early as 1867 to reclaim the Valley. Hops were first raised in 1872 and alfalfa was successfully grown in 1881. Construction of the Northern Pacific Railroad into the valley in 1886 gave greater impetus to agricultural and irrigation projects as products could then be shipped to outside markets.

In 1889, Walter N. Granger, a pioneering irrigation engineer and manager, organized the Yakima Canal and Land Company which, although not the first, was to be the largest and most ambitious attempt at private irrigation in the Pacific Northwest. His company was capitalized at one million dollars and acquired an option on 90,000 acres of Northern Pacific Railroad Company land at a price of $1.25 an acre.
Construction on the Sunnyside Canal began in 1891 and the first water was let into the canal on March 26, 1892. In spite of financial difficulties and several company reorganizations resulting from the Panic of 1893, Granger continued to extend his canal system.

In 1894 he founded and named the present city of Sunnyside. By 1900, Granger's company - now called the Washington Irrigation Company - and other private associations in the Yakima Valley had succeeded in irrigating 120,000 acres. Legal disputes over water rights, however, threatened to block further expansion.

As the result of a 1903 petition from the citizens of Yakima County to the Secretary of the Interior, the U.S. Reclamation Service began investigations that were to lead to a comprehensive plan for federal development of the many individual projects.

Secretary of Interior Ethan A. Hitchcock authorized the establishment of the Tieton and Sunnyside divisions of the Yakima Project on December 12, 1905. Funds were allotted for the purchase of the water rights and facilities owned by Granger's Washington Irrigation Company, and also for extending the Sunnyside Canal.

Federal construction began in 1906. The first water for irrigation on federal project lands was available for use in the season of 1907, and, in October, 1907, the Sunnyside Diversion Dam was completed. The development of the project progressed with the construction of the Tieton Diversion Dam in 1908, Bumping Lake Storage Dam in 1910, Kachess Lake Storage Dam in 1912, and Clear Lake Storage Dam in 1914. The canal system included 90.16 miles by 1913.

The Yakima Project provides irrigation water for a comparatively narrow strip of fertile land extending for 175 miles on both sides of the Yakima River in South-Central Washington. The irrigable lands total approximately 460,000 acres.

The small one-story frame headquarters building of the Sunnyside Valley Irrigation District, erected in 1910, stands at 9th and Franklin in Sunnyside and is still utilized for its original purpose.
35. **Okanogan Reclamation Project:**

Located in Okanogan County, 20 miles northwest of Omak.

In 1886 the lands west of the Okanogan River in Okanogan County, Washington, were separated from the Colville Indian Reservation and thrown open to settlement. Settlers began to arrive in the same year and commenced irrigating crops for winter stock feed.

In 1897, the Conconully Reservoir Company was organized to manage the storage of some 1,500 acres-feet of water in Salmon Lake for irrigation purposes. By 1902 about 1,500 acres of land had been irrigated with water from this source.

In 1902 and 1903 preliminary investigations were undertaken by the U.S. Reclamation Service. On December 2, 1905 Secretary of Interior Ethan A. Hitchcock authorized the construction of the Okanogan Project. The Salmon Creek Diversion Dam was completed in 1906 and the Conconully Dam in 1910. Twenty miles of canals were built between 1911 and 1917.

The project now serves 5,307 acres of irrigable land, which is devoted principally to fruit growing.

**WYOMING**

36. **Buffalo Bill Dam, Shoshone Reclamation Project:**

Buffalo Bill Dam, authorized on February 10, 1904 as a part of Shoshone Project, and completed in 1910, was one of the early reclamation dams erected by the Government. Located on the Shoshone River 7 miles west of Cody, it was the first of a series of dams constructed on this river and its tributaries.

37. **Pathfinder Dam, North Platte Project:**

One of the first five Government reclamation projects, authorized on March 14, 1903, Pathfinder Dam was completed on the North Platte River below its junction with the Sweetwater in 1909. This structure was the first of a series of dams erected on the North Platte River.
CRITERIA FOR THE EVALUATION OF HISTORIC SITES AND BUILDINGS

1. Structures or sites at which events occurred that have made an outstanding contribution to, and are identified prominently with, or which best represent, the broad cultural, political, economic, military, or social history of the Nation, and from which the visitor may grasp the larger patterns of our American heritage.

2. Structures or sites associated importantly with the lives of outstanding historic personages.

3. Structures or sites associated significantly with an important event that best represents some great idea or ideal of the American people.

4. Structures that embody the distinguishing characteristics of an architectural type specimen, exceptionally valuable for a study of a period style or method of construction; or a notable structure representing the work of a master builder, designer, or architect.

5. Archeological sites that have produced information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation over large areas of the United States. Such sites are those which have produced, or which may reasonably be expected to produce, data affecting theories, concepts, and ideas to a major degree.

6. Every historic and archeological site and structure should have integrity—that is, there should not be doubt as to whether it is the original site or structure, and in the case of a structure, that it represents original materials and craftsmanship. Intangible elements of feeling and association, although difficult to describe, may be factors in weighing the integrity of a site or structure.

7. Structures or sites which are primarily of significance in the field of religion or to religious bodies but are not of national importance in other fields of the history of the United States, such as, political, military, or architectural history, will not be eligible for consideration.

8. Structures or sites of recent historical importance, relating to events or persons within 50 years, will not, as a rule, be eligible for consideration.