Highlights in the History of Forest Conservation

U.S. Department of Agriculture Forest Service AIB-83

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CONTENTS

INTRODUCTION

Forestry in the United States was still in a "misty dawn" at the beginning of the current century. However, it was inevitable from the beginning that forest conservation should play a major role in the development of this country. Here was a land singularly rich in natural resources, of which our forests were dominant. Trees grew in all parts of this land except in grasslands, the desert regions of the Great Plains, and the arid basins of the West. The original timberland was estimated at 950 million acres. Forests extended almost unbroken from the Atlantic Coast to the Great Plains, and began again to the west where they ranged in increasing numbers to climax in the giants of the Pacific Coast.

It is generally accepted today that there still remains about two-thirds of the original forest lands. This, despite the fact that as early as 1865 a timber famine was predicted within 30 years. Differences of opinion and conflict have marked the course of conservation throughout our Nation's history.

The majority of the people, particularly during the country's formative years, regarded the forests as an inexhaustible resource. Land had to be cleared of trees to make it suitable for (1) agricultural purposes, (2) roads, and (3) settlements. To pioneers the forest seemed an obstacle to progress and safety. Wood was an essential ingredient to pioneer livelihood, but it was overabundant and free for the taking. Also, the forests added to the dangers, for they harbored Indians and wild animals.

Still, there were those settlers in America who, coming from lands where forests had been depleted, brought with them the conviction that the forest was a valuable resource and should not be wasted. Restrictions on cutting and burning forest land appeared early in the Colonies. These laws were aimed mostly at protecting the property of others and reserving large white pines as masts for the British Royal Navy. Soon after the Colonies gained their independence, special reserves of live oak trees were set aside along the southern coasts to provide timbers for naval vessels.

So, there appeared two sides to the conservation coin early in our history. These will appear and re-

Figure 1.—Mt. Shuksan, Wash. F-385266

appear as we focus on the several distinct periods of development of forest conservation in America. Sometimes these will appear as merely differences of opinion, while at other times they present themselves as confrontations and even conflict.

In colonial days, naturally being highlighted first in our chronology, two important facts stand out: the settlers were energetic, intelligent, independent, and ambitious people and gradually came to need the help of the mother country less and less; and, to the west was a great land with very few inhabitants. America was largely a wilderness, with an abundance of fertile soil, most of the minerals required by modern industry, vast forests, and water for crops, power, and other uses. These resources greatly influenced the development of the country and the lives of its people, and helped make the country rich. Sheer abundance, however, often led early Americans into wasteful habits, such as farming fields continuously until the land began to wear out, needlessly destroying wide forest areas by poor logging methods, and recklessly slaughtering wildlife, such as the buffalo. A few farsighted and public-spirited people tried from time to time to arouse realization of the dangers that lay ahead if wasteful destruction of forests were not checked, but they were as voices crying in the wilderness. To most people it seemed the forests would last forever.

The next highlight covers a period to be characterized by one word—exploitation. The restrictions imposed by a foreign sovereignty were thrown off. Although the British trade restrictions had been much lighter than those imposed by other countries on their colonies, the Americans had become such strong individualists that they resented any controls. Now the pendulum swung the other way—expansion which knew no bounds was the order of the day.

A census of 1790 showed that about 4 million persons lived in the United States. Most of them lived along the Atlantic seacoast, either in villages or on farms. Only about 100,000 hardy settlers had ventured west of the Allegheny Mountains. But the country grew rapidly. People thought little of hardships so long as they could get ahead in the world. Prosperity grew mainly because land cost so little, and the forests seemed to be everywhere. This resulted in as

many trees being burned to clear the land as were used for building, furniture, utensils, tools, railroad ties, or firewood. The 19th century saw lumbering develop and spread on a colossal scale until nearly all the original forests were cut over, from the Atlantic Ocean to the Great Plains. This cutting was often followed by severe fires, which frequently prevented the forests from renewing themselves.

Jefferson's promotion of agriculture and the Louisiana Purchase were most important in this period of national growth. The United States had grown amazingly in the years after Jefferson took office. Settlement had reached as far west as the Missouri River, and the population had passed 17 million.

Exploitation of the forests was gradual at first, before the days of power equipment, but the forests of New England had been mostly cut over by 1830, those of New York State by 1850, and Pennsylvania's forests shortly after the Civil War.

The Civil War and the Reconstruction put additional drains on the Nation's timber supplies. It was about this time that a conservation conscience began to awaken among the citizenry. The rapid pace of lumbering, then in the Lake States, the widespread destruction by forest fires, the growing realization of the relationship of forests to streamflow and water supplies—all caused people to think about future timber supplies and the importance of forest cover.

Scientists and other professional people took the lead in organizing the forest conservation movement. Demands began to be made that the Federal Government reserve large holdings of public domain land in the West before the forests there too were recklessly exploited. The movement had to overcome strong resistance from a population and legislators deeply dedicated to "rugged individualism" and the right to do with land as they pleased. Much timberland was acquired by fraud and there was widespread harvest-

Figure 2.—View of mountains in Gallatin National Forest, Mont.

Figure 3.—Sheep grazing in Midway Valley, Dixie National Forest, Utah. F-508830

ing of timber on public lands without authorization throughout the Midwest.

Several States started action to conserve forests in the 1860's and 1870's—first with special boards to study the forest situation, then with attempts to encourage tree planting bounties, neither of which was very successful.

The first survey of forest resources was included in the 1870 U.S. census. Lectures and courses in forestry began to be offered at several colleges and universities. The American Forestry Association was organized in 1875 to develop public support for forest conservation—especially reforestation.

In 1876 Congress appointed a special agent to gather information on the forest situation and on how forests could be managed. In 1881 this office was made a division of Forestry in the Department of Agriculture, and in 1886 a professional forester became head of the Division. In 1885, New York State became the first State to set up a State forest.

With this gradual awakening toward the end of the first 100 years of our country's existence we come into the next period to be highlighted. Far shorter in years than the previous period, this time gains its conservation stature from the fact that it marks the beginning of a conservation revolution—a revolution which progressed in three distinct waves and extends to the present.

Portentous of things soon to come, Congress, in 1891, authorized Federal forest reserves in the public domain, and the first reserves were created by President Benjamin Harrison. In 1897, Congress provided for organizing and managing the reserves and opening them up for public use.

By 1900, the United States had become one of the greatest economic powers in the world. Its population stood at more than 75 million. With all this growth, however, came the slow realization that the Nation's strength was based on its natural resources.

The Federal forest reserves remained under control of the Department of the Interior's General Land Office until 1905 when they were transferred to the Department of Agriculture's Bureau of Forestry, which was renamed Forest Service. Its Chief was Gifford Pinchot, America's first professional forester, who had become head of the Forestry Division in the Department of Agriculture in 1898. The name of the reserves was changed to National Forests in 1907. The establishment of the Forest Service, U.S. Department of Agriculture, in its present form marked the real beginning of a National Forest conservation and management policy.

President Theodore Roosevelt probably contributed more than any other individual to make the "first wave" of conservation a highlight in our history. He was an ardent conservationist and made large additions to the National Forest System during his term (1901–09). He and Pinchot became close friends and greatly advanced the cause of forest conservation. Pinchot and several of his associates founded the Society of American Foresters, a professional organization of technically trained foresters, in 1900.

Under the Weeks Law of 1911, National Forests were established in the East by purchase. This law also started a program of cooperation in fire control between the Federal Government and the State governments, which was much expanded under the Clarke-McNary Act of 1924 and extended to include private lands. The latter act also extended Federal-State cooperation in production and distribution of forest seedlings for farmlands, and in assistance in management of private forest lands. Forest Service cooperation with States and private forest landowners was extended over the years to include technical aid in harvesting, marketing, and processing forest products.

A third major area of Forest Service work is research in all phases of forestry and closely related fields, which is carried on at many locations all over the country—often in cooperation with State colleges and universities. The first of its forest experiment stations was established in Arizona in 1908. The world-famous Forest Products Laboratory was set up in 1910 at Madison, Wis., in cooperation with the University of Wisconsin.

As with most historical progressions, forest conservation did not maintain an equilibrium, but moved forward with distinct waves. We should point out, however, that each period of highlights could not have transpired without preceding events. One thing led to another, and all were influenced by outside events of the time—events which sometimes overshadowed and sometimes completely obscured conservation developments, i.e., World War I, and the Great Depression.

The "second wave" of conservation occurred during the Franklin D. Roosevelt administration. Chief among the conservation efforts at that time was the work of the Civilian Conservation Corps (CCC). During the operation of this program, more than 2 million young men participated, and a vast amount of forest protection, tree planting, watershed restoration, erosion control, recreation area development, and other improvement work was accomplished.

Periodic disastrous forest fires had early convinced Federal, State, and private forest landowners and managers that the development of effective fire control organizations, trained manpower, and good equipment was of highest priority. Through much trial and error over many years, and with close cooperation, this was accomplished, and soon wildfires were burning only a fraction of the area they devastated early in the century. Similar cooperation developd in insect and disease research and control, and in many other fields.

The bottom of the trough before the next conservation wave was marked by World War II. Not that this period was sterile, for in 1934 the Taylor Grazing Act ended the unregulated grazing of public grazing lands. Congress established the Tennessee Valley Authority and the Flood Control Act of 1936 established the first national policy on flood control. By the time the United States entered World War II, the conservation movement included many efforts to preserve the country's natural resources.

The "third wave" of national conservation had its beginning during the Kennedy administration and was expanded during the Johnson administration. Unprecedented events preceded this period, for we had entered the Space Age. Man had been to the moon and back, had controlled atomic power, and had perfected the transfer of vital organs in humans. Man now had it in his power to destroy humanity, or develop a utopia far beyond the most fantastic dreams.

The 89th Congress (1965–66) was called the "Conservation Congress" because of its extraordinary achievements in that field. A dominant note in that Congress was the increasing awareness of man's contamination of his environment. The 89th Congress passed a total of 51 conservation measures. Water pollution, air pollution, the acquisition and designation of lands for recreation purposes, urban sprawl, and the continuing withdrawal of land from productive uses were the leading conservation problems of the day. The third wave of conservation merged with the broader natural beauty and environmental movements, which brought public and private forests and their management into acute public consciousness.

The first half of the decade of the 1970's saw conservation controversies assume a new dimension, for the general public became involved in decisionmaking as never before. Such issues as clearcutting, strip-mining, and the classification and setting aside of wilderness areas were among the dominant ones. The Forest Service prepared a new proposed 10-year plan for managing the National Forests, called "Environmental Program For the Future," offering three alternative levels of operation, and invited public comment.

The Resources Planning Act (RPA) of 1974 directed that long-range plans be developed to ensure that the United States has an adequate future supply of renewable resources from the Nation's 1.5 billion acres of public and private forest lands and rangelands.

As the Nation enters its bicentennial year, one of the major economic problems is that of putting to the best use, for human welfare, the 664 million acres of land most suitable for forest and related purposes.

Man has made spectacular gains in the methods for producing the needs and luxuries of life. But technological advances are being bought at the cost of increasing deterioration of the environment, pollution of air and water, crowding and congestion, loss of living space, and of wild nature. There is worry that even if man's material needs can be satisfied, the world he lives in will be less suited to maintaining those human qualities that make men fit company for one another. A concern for keeping the world a fit place for people is the basis for the social movement known as conservation.

The following pages give, in chronological order, positive actions as well as reverses which significantly influenced the movement of forest conservation and wise management for the general public welfare in the United States of America. Particular emphasis is given to the major role of the Forest Service, U.S. Department of Agriculture, which, together with its predecessor agencies, the Bureau of Forestry and the Division of Forestry, has led this movement for the past century.

In Colonial Days
1607–1782

When the earliest settlers landed on American shores, forests covered nearly all the land from the eastern seaboard to the Great Plains. Wood was abundant and free for the taking. The colonial period was characterized by a gradual pushing back of the forests to make room for settlement. Because transportation facilities were poor, local wood shortages sometimes arose near the larger towns, and these occasionally led to restrictions on cutting. But most people felt, in the words of Gifford Pinchot, that "the thing to do with the forest was to get rid of it."

1626 Plymouth Colony passed an ordinance prohibiting cutting timber on colony lands without official consent.

1681 William Penn's ordinance for the Pennsylvania colony required that, in clearing land, settlers leave 1 acre in trees for every 5 acres cleared. This provision was not long enforced.

1691 Massachusetts colony charter reserved to the King, to provide masts for the British Navy, all white pine trees 2 feet thick or more (at one foot above the ground) growing on land not previously granted to a private person. Later similar provisions applied from Maine to New Jersey. Violators were tried in admiralty courts.

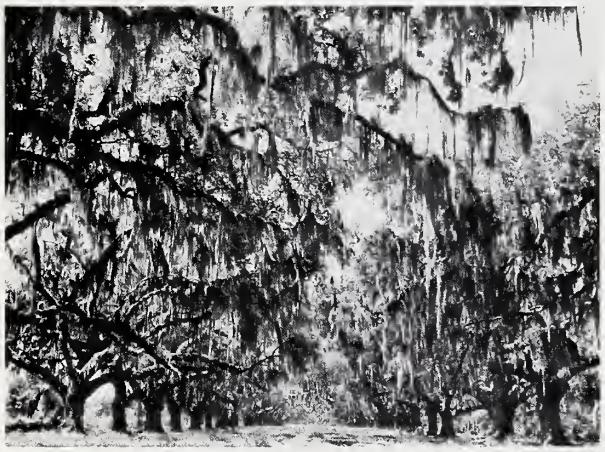
1710 The first community forest in the United States was established at Newington, N.H. A 110-acre forest owned by the town has yielded continuing benefits to the community for more than two centuries, helping to build the village church, parsonage, town hall, and library; furnishing planks for bridges; and fuel to heat public buildings.

1728 British Navigation Acts prohibited the colonies from shipping pitch, tar, and crude gum direct to foreign countries. Measures for the regulation of the naval stores industry and for the payment of bounties were introduced by the Royal Governor of North Carolina.

1760 Another of America's earliest community forests was established at Danville, N.H. A committee was appointed to manage the town's 75-acre woodland "to keep the parson warm." Over the years the forest has yielded some $10,000 worth of products.

1777 North Carolina law prohibited unlawful firing of woods and declared that forest fires are extremely destructive to the soil.

Figure 4.—Occasionally, Indian trail trees took root at their points of secondary contact with the ground. Indians bent the young saplings down to the ground to point out a trail. F–336329



F–464570

Figure 5.—The Packenham live oaks, Louisiana.

The Young Republic
1783–1875

In the first century of American independence, settlement spread over most of the country. The forests were drawn upon heavily to make new farms, to supply the growing industries, to extend the railroad lines, and to build the many new towns and cities that sprang up. This was a period of forest exploitation, gradual at first, but rapidly increasing after about 1850. Only a few concerned citizens were beginning to think about the future of the forests.

1799 The Federal Timber Purchases Act appropriated $200,000 to buy timber and timberland for naval purposes—early recognition of the need for husbanding timber supplies. Blackbeard's and Grover's Islands off the Georgia coast were purchased.

1822 An act for "the preservation of timber of the United States in Florida" was passed to prevent the destruction and theft of Government timber.

1827 The Federal Timber Reservation Act established the Santa Rosa live oak timber reserve in Florida for the Navy—the first reservation of public land for timber supplies.

1828 Santa Rosa, a peninsula jutting into the Bay of Pensacola, Fla., was intended to be our first forest experiment station. It contained 30,000 acres. Live oaks and live oak acorns were planted, brush was cleared, fire lanes were opened, selective cutting was done, and trespassers were kept out. Plans were made to make the forest pay for itself in forest products. Unfortunately the forest became a controversial political issue and work was ordered dropped after 2 years.

1830 Missouri's forest cultivation petition asked Congress for a township for experiments in raising forest timber.

1831 The Timber Trespass Act, related to live oak and other timber, became the basis for the present-day law for the prevention of timber trespass on Government land.

1837 The Massachusetts Legislature authorized a survey of forest conditions, with a view to inducing landowners to consider the importance of "continuing, improving, and enlarging the forests of the State."

Figure 6.—An old sod house near Halsey, Nebr. F–485084

F–353075

Figure 7.—Only the finest wood went into many early mansions.

1844 New York Association for the Protection of Game, one of the earliest wildlife conservation organizations, was founded.

1849 U.S. Department of the Interior was created.

1850 First Federal timber agents appointed by Secretary of Interior to protect public timberlands. (They were discontinued in 1855 and their duties added to the district land registers and receivers.)

1851 Utah law limited timber cutting in Great Salt Lake County, with $100 fine for anyone who wasted, burned, or otherwise destroyed timber.

1858 The southern pine petition, from the Georgia Legislature, asked Congress to appoint a Federal commission to inquire into the extent and duration of the southern pine belt.

1860 "Forest Trees of North America," a 30-page section of the annual report of the Agricultural Division of the Patent Office, was issued. It listed kinds of trees found here, and discussed effect of trees on soil, climate, and health.

Figure 8.—Lumbermen's Monument, Huron National Forest, Mich. F–502624

F–371360

Figure 9.—An old original witness tree marked by the Land Office in 1843.

F–479046

Figure 10.—Glenwood Furnace, Jefferson National Forest, Va.

1862 The Department of Agriculture was created. Homestead Act passed.

1861–70 Iowa, Kansas, Dakota Territory, Nebraska, Minnesota, and Missouri passed laws encouraging planting of forest trees.

1864 Publication of the classic scientific work, "Man and Nature; or Physical Geography as Modified by Human Action," by George Perkins Marsh. This book sounded a warning about man's waste of the land and helped lead to the establishment of the U.S. forest reserves.

1867 Michigan and Wisconsin Legislatures provided for inquiries into forest conditions and needs, and set up tree-growing bounties and tax exemptions.

1869 A forestry committee was appointed under the State board of agriculture in Maine to develop a State forest policy.

1870 U.S. Census included a survey of forest resources for the first time.

1871 A Federal act provided $5,000 for "protection of timberlands." Primarily this was intended for the protection of naval timber reservations.

F-88851
Figure 11.—The Joe Hendricks homestead in Oregon.

F-385446
Figure 12.—Miss Kate Suttin was born in this cabin in Ohio and lived there over 80 years.

It was the first appropriation made directly for the protection from spoilation of publicly owned timber in the United States. The next year, $10,000 was made available for the protection of public lands in general.

The great Peshtigo fire in Wisconsin was one of the most calamitous in American history. Homes, towns, and settlements were swept away by the flames, 1,500 persons lost their lives, and 1,280,000 acres were burned over.

1872 Arbor Day was instituted in Nebraska on April 10, to stimulate tree planting in the prairie country. The observance of Arbor Day has since spread to every State and to many foreign countries.

Yellowstone National Park was reserved as a "pleasuring ground," the beginning of the National Park system.

A tree-planting tax law in Maine provided for 20-year tax exemption for land planted to trees.

A wild land commission was created in New York to consider State ownership of wild lands lying north of the Mohawk River.

1873 Congress passed the first timber culture act, which granted a homesteader a patent to 160 acres of land in the Great Plains if he agreed to plant one-fourth of the land to trees. Later laws changed and finally eliminated the tree-planting provision; but many early-day tree groves and shelterbelts were established by homesteaders under this act.

The American Association for the Advancement of Science at its annual meeting at Portland, Maine, following an address by Dr. Franklin B. Hough entitled "On the Duty of Governments in the Preservation of Forests," appointed a committee "to memorialize Congress and the several State legislatures upon the importance of promoting the cultivation of timber and the preservation of forests and to recommend proper legislation for securing these objects."

Lectures on forestry were started at Yale University, perhaps the earliest offered by an American university. Courses of instruction in forestry were instituted in the following year (1874) at Cornell, and in 1881 at the University of Michigan. By 1887, according to the Annual Report of the Chief of the Division of Forestry, U.S. Department of Agriculture, instruction in forestry was being given at New Hampshire, Massachusetts, Michigan, Missouri, and Iowa Agricultural Colleges, the Universities of Pennsylvania and North Carolina, and Cornell and Yale. It was not until the late 1890's, however, that full professional training in forestry was offered by an American university.

1875 The American Forestry Association was organized September 10 in Chicago. Its objectives were "the protection of the existing forests of the country, and the promotion of the propagation and planting of useful trees."

Federal Forest Work Begins 1876–1897

The real beginning of forestry work by the Federal Government came just 100 years after the Declaration of Independence, when Congress in 1876 authorized the appointment of a special forestry agent. During the next quarter century, the forestry movement was mainly a campaign of public education. Toward the end of the period a forestry policy for Government timberlands was established. Meanwhile, large-scale exploitation of timber resources continued.

1876 A special agent, Dr. Franklin B. Hough, a physician, statistician, and naturalist of Lowville, N. Y., was appointed by Frederick Watts, U.S. Commissioner of Agriculture, to gather data on the supply and demand for timber and other forest products for the present and future; to report on means successfully used abroad to manage forests, and means that may be used in this country to preserve and renew forests; and to investigate the influence of forests on climate.

A bill was introduced in Congress to insure preservation of forests of the public domain adjacent to the sources of navigable rivers and other streams.

1877 Congress granted its first appropriation, $6,000, to obtain information before establishing a Division of Forestry in the Department of Agriculture. Carl Schurz, German immigrant, statesman, and student, who became Secretary of the Interior in 1877, was among the first to propose and urge the establishment of Federal forest reservations, and the scientific handling of forests. In his native Germany forests were managed so that there was always a supply of wood. Trees were regularly and constantly replaced. He believed the same could be done in his adopted country.

Secretary Schurz and J. A. Williamson, a militant advocate of public forest control who had just become Commissioner of the General Land Office, completely reorganized the system of protecting and caring for public timberlands. District land registers and receivers were relieved of their timberland protection responsibilities. A force of special timber agents was organized and a drive was started against timber thievery and depradations on public lands. A new circular of instructions for timber agents was issued.

Connecticut set up a forest inquiry commission.

1877–83 Three comprehensive reports by Dr. Hough were submitted to Congress.

1878 The Free Timber Act and the Timber and Stone Act were passed by Congress. Until then there was no legal distinction between timberlands and other lands, and also no honest way to acquire public timberlands. The Free Timber Act gave the people of nine western States the right to cut timber at will on mineral lands both for domestic and mining purposes. The Timber and Stone Act authorized the sale of public land chiefly valuable for timber but unfit for agriculture and not previously offered for sale; the minimum price to be $2.50 per acre and the maximum area sold to one person, association or corporation, 160 acres. The impractical and unenforceable provisions in these laws resulted in unprecedented fraud and opened the door wide to wholesale forest cutting and destruction. For example, in 1885, the Government sought to recover the value of 60 million board feet of high-grade lumber stolen from public forests by a single California company.

A bill was introduced in Congress embodying the ideas of Schurz and Williamson, providing for the disposition and management of public timber and timberlands. All public lands bearing timber of commercial value would be withdrawn from sale or other disposal, and lands valuable chiefly for timber would be held by the Government to prevent waste and destruction by fire, and to assure continuous restoration and reproduction of the forests, with a gradual sale only of such trees as were most valuable as timber. An office of Forester would be set up in the Department of Interior, and the President authorized to appoint as many foresters at $2,500 per year as he deemed necessary for the proper care, custody, preservation and appraisement of the timber on the public lands. Fines of up to $1,000 and 1 year in prison were provided, plus double the amount of damage caused, for anyone convicted of willfully or negligently setting fire to any woods, prairie or ground in the public lands, or who permits any fire to pass from his property to that of another. The bill failed to pass.

The first State game commissions were established in California and New Hampshire.

Figure 13.—Oldest Ranger Station in the United States, Bitteroot National Forest, Mont. F–515567

1879 Congress created a Public Lands Commission, to codify public land laws, classify public lands, and recommend wise disposal and management of these lands. The Commission proposed a law to correct abuses in public lands disposal and management. It advised withdrawal from disposal of public lands chiefly valuable for timber, or setting aside portions of these lands as forest reserves. The Commission's report to Congress in 1880 contributed greatly to the Forest Reserve Act finally passed in 1891.

1881 The forest agency in the Department of Agriculture was made a Division of Forestry. It had no forests or forest lands under its control—it served only to find facts about forests and forestry. An agent was sent to Europe to study forestry there. In 1884, the duty of making experiments with timber was added to the work of the Division.

New Hampshire set up a forest inquiry commission.

1882 An American Forestry Congress was organized, and held in Cincinnati, with Dr. Bernhard E. Fernow as secretary.

1884 The Senate Standing Committee on Agriculture became the Committee on Agriculture and Forestry.

1885 The Biological Survey in the U.S. Department of Agriculture began as the Division of Economic Ornithology and Mammalogy. (In 1940 it became the Fish and Wildlife Service of the Department of the Interior. Cooperation with the Forest Service has been very close because of the relation of wildlife to the forests.)

New York was the first State to undertake public forest administration. It created the huge Adirondack State Forest Reserve in this year and set up a State forest commission which has continued in operation uninterrupted since then. A comprehensive fire control law was also passed.

Six bills were introduced in Congress for creation of forest reserves; none passed.

California created a State board of forestry. Colorado and Ohio took similar action later in the year.

1886 The Division of Forestry under Dr. Bernhard E. Fernow, a Prussian expert on forestry and the first formal chief of the Division, was given permanent statutory rank, in the U.S. Department of Agriculture.

1887 The Division of Forestry issued a "Report on the Relation of Railroads to Forest Supplies and Forestry." It estimated the vast amount of timber used in building and maintaining the railroads, and warned against exhaustion of our bountiful supply by wasteful cutting.

Pennsylvania set up a forest inquiry commission.

1888 An Irrigation Division of the U.S. Geological Survey was established and the Secretary of the Interior was given authority to withdraw from private entry reservoir sites and other public land areas that in the future would be necessary for irrigation purposes.

Another comprehensive bill was introduced in Congress for the protection and administration of forests in the public domain. It provided for a Commissioner of Forests who would subdivide forest reserves into divisions and districts, organize a "forest service," appoint forest inspectors or forest rangers, "establish a practical system of forestry," and make reasonable rules and regulations for the prevention of trespass, the control of forest fires, and the "conservation of the forest growth." This bill also failed to pass, but was another important step toward sound and progressive forestry legislation. It was drafted by B. E. Fernow.

A law was enacted forbidding timber trespass on Indian reservations.

1889 A law regulating the sale and use of dead timber on Indian lands, plus later amendments, was an important practical development in American forestry.

The American Forestry Congress presented a resume of timber trespass and timber thievery on the public lands to President Benjamin Harrison, showing that between 1881–87 over $36 million worth of timber was unlawfully taken from public lands and only about $475,000 worth recovered by the Government. A former Federal inspector prepared the report.

1890 The cutting of 20 million board feet of green timber annually on the Menominee Indian Reservation in Wisconsin was authorized by an act of Congress. This was the first Federal law regulating cutting of live timber on Government-managed lands.

Sequoia, Yosemite, and General Grant National Parks were created, all in the Sierra Mountains of California. Total area at first was 838,770 acres; eventually this was nearly doubled by addition of lands from adjacent forest reserves and national forests. (The General Grant Park was later changed to Kings Canyon National Park, which was finally combined with Sequoia National Park.)

1891 Beginning of the National Forest System: By act of Congress, approved March 3, the President was given power to establish forest reserves from the public domain (26 Stat. 1103). The provision was attached as a rider to a bill revising the land laws. On March 30, President Harrison created the first reserve —the Yellowstone Timberland Reserve, an area of 1,239,040 acres in Wyoming. These reserved lands are now in the Shoshone and Teton National Forests.

F–494158
Figure 14.—Horseshoe Basin Area, Okanogan National Forest, Wash.

On October 16, President Harrison signed a proclamation withdrawing 1,198,080 acres in Colorado, known as the White River Plateau Timberland Reserve, now the White River National Forest. Before his term had expired, President Harrison set aside forest reservations totaling 13 million acres. No plan of operation was passed by Congress and the reserves were simply closed areas.

North Carolina set up a forest inquiry commission.

Maine authorized its State land agent to serve also as State forest commissioner with the duty to collect data on forest fire losses, forest waste, and on the reduction of forest area and its effect on watersheds.

1892 President Harrison proclaimed eight more Timberland Reserves: Pikes Peak, Plum Creek, South Platte, and Battlement Mesa, all in Colorado; Pecos River, New Mexico; Bull Run in Oregon; San Gabriel in California, and Afognak in Alaska.

Gifford Pinchot was employed as the first professional American forester, on the Biltmore Estate of George W. Vanderbilt in the mountains of western North Carolina.

1893 New Hampshire set up a State forestry commission with responsibility for forestry education as well as authority to purchase land for public purposes.

Five more timberland reserves were set aside by President Harrison: Sierra, San Bernardino, and Trabuco Canyon in California; Pacific in Washington, and Grand Canyon in Arizona, for a total of almost 13.5 million acres during his administration. President Grover Cleveland created the Cascade Range and Ashland Timberland Reserves in Oregon, aggregating over 4.5 million acres.

1895 Pennsylvania created the office of a State Commissioner of Forestry.

Dr. Carl A. Schenck succeeded Pinchot as forester on the Biltmore Estate.

1897 President Cleveland, just before the close of his term, proclaimed more than 20 million acres of new reserves. Soon after, Congress passed an act of organization and management for those public forests. It authorized the hiring of employees to administer the forests and made possible the opening of the reserves for use. This act of June 4, with later amendments, is the one under which the National Forests are now being administered. (Until 1905, the General Land Office in the Department of the Interior was in charge. The Division of Forestry gave technical advice. The Geological Survey was assigned the surveying and mapping of the forests.)

Pennsylvania law provided the State acquisition of tax delinquent lands for State forest reserves.

The Conservation Movement Grows 1898–1917

Around 1900, the forest conservation movement began to expand greatly under the dynamic leadership of Gifford Pinchot. Pinchot brought the word "conservation" into popular usage in its application to natural resources. The next two decades saw the establishment of a forestry profession. The Forest Service came into being. The National Forest System was developed and expanded.

1898 Gifford Pinchot was named head of the Forestry Division in the Department of Agriculture with a staff of 12 persons, 6 for clerical and 6 for scientific work. Within 7 years the number of employees had increased to more than 700, many of them graduates of the newly established forestry schools. It was in 1898 that the first fieldwork was done by U.S. forestry employees. The fieldwork consisted of special investigations in connection with lumbering. Mr. Pinchot, with great energy and leadership, enlarged and extended the scope of the Division of Forestry beyond the confines of the office to make it a vital and useful service.

The first 4-year professional curriculum in forestry was started at Cornell University in New York. In the same year the Biltmore Forest School, a private school, was started in North Carolina. The Yale Forest School was established in 1900, offering a graduate curriculum in forestry leading to a master's degree. During the next 5 years, regular forestry curricula were started at the Universities of Michigan, Maine, Nebraska, and Minnesota, the State Forest Academy at Mont Alto, Pa., and Colorado College. Harvard University set up an undegraduate curriculum in 1903, but later moved its forest work to the graduate school. Before 1905, Michigan and Iowa State Colleges also were offering nonprofessional courses that later were expanded into full professional curricula.

The first farmers' bulletin on forestry was issued, entitled "Forestry for the Farmers."

The General Land Office grouped the forest reserves into 11 districts, each headed by a superintendent. Each reserve was under the direction of a

Figure 15.—Barking logs prior to loading—Snoqualmie National Forest, Wash. F-95417

supervisor, who was assisted by rangers who conducted forest patrols, forest protection, and other work.

1899 The act of February 28 provided for recreational use of the reserves. This was the first of such laws to recognize the value of the forests for recreation. Later laws extended the uses permitted and provided for regulations to keep the facilities always available to the people.

Minnesota set up a State forestry board, and designated as forest reserves all tracts set aside or acquired by the State or donated to the State for forestry purposes.

Michigan set up a State forestry commission.

Mt. Rainier National Park was established in Washington State on 239,892 acres taken from the Pacific Forest Reserve.

1900 The Society of American Foresters, a professional organization of technically trained foresters, was founded.

1901 The Division of Forestry in the Department of Agriculture became the Bureau of Forestry with authority to engage in a variety of work, including the making of forest plans for private timberland owners, tree planting, and forest investigations (act of March 2, 31 Stat. 929).

A Forestry Division was set up in the General Land Office, headed by Filibert Roth, who had served for some time under Dr. Fernow in the Department of Agrieulture's Division of Forestry. Mr. Roth was the first trained forester employed regularly in the Department of the Interior. He was assisted by three other trained foresters. However, all four resigned in 1903.

At the special request of the Secretary of the Interior, a trained forester was detailed from the Department of Agriculture to the Interior Department. He prepared the first Government timber sale contract in the United States covering the proper removal of timber from Federal forest reserves, in the Black Hills of South Dakota. He then was a special agent of the Secretary of the Interior for about a year inspecting and reporting on forest conditions and activities on other forest reserves throughout the West.

A special act was passed by Congress authorizing the Grand Portage Indians to sell timber from their

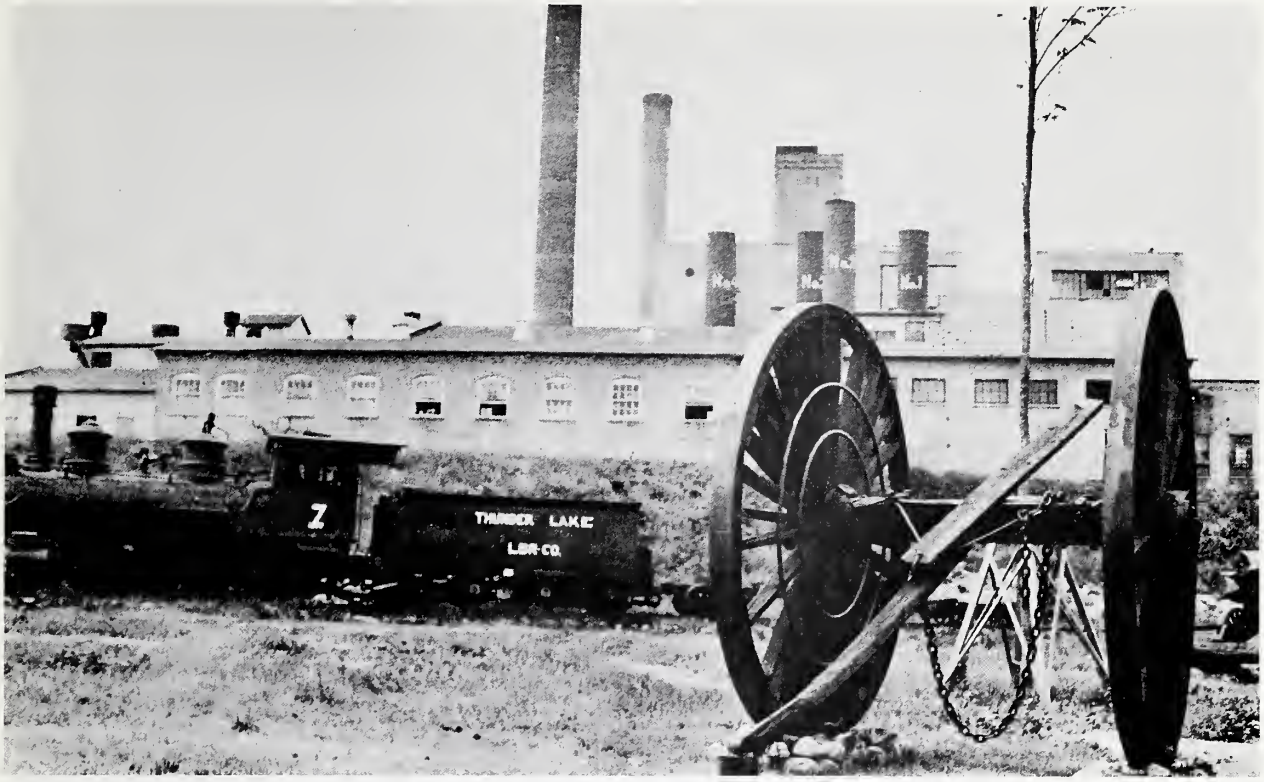


Figure 16.—"High wheels" and locomotive formerly used for logging in Wisconsin. F-380138

allotted lands. Similar acts were passed in rapid succession for other Indian lands. The next year an act of Congress specified that 5 percent of the timber on the Chippewa Indian Reservation be left standing for forest renewal purposes, and that cutting be restricted to pine.

The annual report of Secretary of the Interior Hitchcock recommended placing the forest reserves in the Department of Agriculture under the control of the Bureau of Forestry.

Walter Mulford was appointed State Forester of Connecticut, first State forester in the United States. A few weeks later George Wirt became State Forester in Pennsylvania.

1902 The first forest reserve created by Congress and not by Presidential proclamation, the Minnesota Forest Reserve, was set up.

Crater Lake National Park was created in Oregon from 156,850 acres of the Cascade Forest Reserve.

1901–05 Agitation for transfer of the forest reserves to the Department of Agriculture was continued. President Theodore Roosevelt sent messages to Congress urging the transfer. The American Forest Congress, meeting in Washington in 1905, passed a resolution calling upon the U.S. Congress to unify all forest work of the Government, including the National Forests, in the Department of Agriculture. At this meeting, President Roosevelt declared that the object of forestry is not to "lock up" forests but to consider "how best to combine use with preservation."

1904 Louisiana became the first southern State to set up a State Department of Forestry and a forest fire warden system.

1905 The act of February 1 (33 Stat. 626) provided for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture. The present Forest Service dates from this act. The Agricultural Appropriation Act of March 3 (33 Stat. 872), effective July 1, designated the old Bureau of Forestry as the Forest Service. When the Forest Service took charge of the forest reserves they numbered 60, with a net acreage of some 56 million acres of land actually owned by the Government. Forest Service personnel numbered 734, of whom 268 were in the Washington office and 466 in the field service.

North Carolina and California each created the office of State Forester.

Figure 17.—Dedication of the first piece of land purchased under the Weeks Law, an 8,100-acre tract near Marion, N.C. F-500024

Tennessee established the Department of Game, Fish and Forestry.

1906 The act of June 11 (34 Stat. 233) provided that those lands within forest reserves chiefly valuable for agriculture be listed for homestead and entry purposes. Under this act a huge program of land classification was carried out and several million acres of land withdrawn from the National Forest reserves. Under earlier homestead acts there had been a great deal of fraud and much land was taken for homesteads that should have been left in forest. This happened again.

The area of forest reserves was increased to 106,999,138 acres; timber sales tripled over the previous year; and grazing fees were charged, although the first grazing permits were issued in 1897 for horses and cattle; and in 1902 for sheep. An act was passed June 8, to preserve American antiquities or features of scientific or historical interest situated upon land owned or controlled by the Government. These areas are known as National Monuments, and are administered by the Department of the Interior. Many of these areas were under Forest Service control until transferred to the Department of the Interior in 1933.

Maryland set up a State Board of Forestry empowered to employ a trained forester to head the State forest fire protection system and direct all State forestry interests. Maryland also provided for purchase of State forest reserves.

Kentucky set up a State Board of Agriculture, Forestry and Immigration.

1907 A western element in Congress, opposed to the National Forest enterprise, succeeded in attaching to the agricultural appropriations bill a rider prohibiting any further additions by Presidential proclamation to the forest reserves in Oregon, Washington, Idaho, Montana, Colorado, and Wyoming. President Theodore Roosevelt signed the bill carrying the rider to be effective March 4, but before he did so on March 1 and 2 he signed 33 proclamations by which new reserves were created and areas added to already established reserves so that a total of 15,-645,631 acres was added to the forest reserve system. California was added to the restricted list in 1912, and Arizona, and New Mexico in 1926. Addition to the National Forests or creation of new ones in these States can be only by action of Congress.

The name "forest reserves" was changed to "National Forests." The word "reserve" implies that the area is withdrawn from use, which has not been true of these areas since 1897.

President Roosevelt appointed the Inland Waterways Commission. In its first report it emphasized the interlocking character of the problems of natural resources. It pointed out that the control and use of water would conserve coal, iron, and the soil, and in order to control water, it is necessary to preserve the forests.

Alabama set up a State Commission of Forestry.

1908 To bring administration of fieldwork closer to the forests, six district offices of the Forest Service were created, each under a district forester. Headquarters are at Missoula, Mont., Denver, Colo., Albuquerque, N. Mex., Ogden, Utah, San Francisco, Calif., and Portland, Oreg. District offices were created later at Philadelphia, Atlanta, Milwaukee, and Juneau, Alaska.

The first forest experiment station was established on the Coconino Plateau in Arizona. Other stations were soon established in Colorado, Idaho, Washington, California, and Utah.

The act of May 23 (35 Stat. 251) provided that 25 percent of all money received by National Forests (for grazing permits, sale of timber, or other special uses or products) should be paid to the States for the benefit of the public schools and public roads of the counties containing the National Forests.

President Theodore Roosevelt held the White House conference of governors to consider that our natural resources were being consumed, wasted, and destroyed at a rate that threatened them with exhaustion. Means of saving our resources were discussed, and a commission was appointed to study them. This National Conservation Commission was divided into four sections—minerals, waters, forests, and soils—with Gifford Pinchot as chairman. An inventory was published in 1909.

1909 The North American Conservation Conference was held in Washington. Statements of principles of conservation for the North American Continent were adopted.

The Western Forestry and Conservation Association was established by western lumbermen.

By this year, 11 States owned and administered nearly 3 million acres of State forests: Connecticut, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, and Wisconsin. Of this total, 1,611,817 acres were in New York State, 863,000 in Pennsylvania, and 253,573 in Wisconsin.

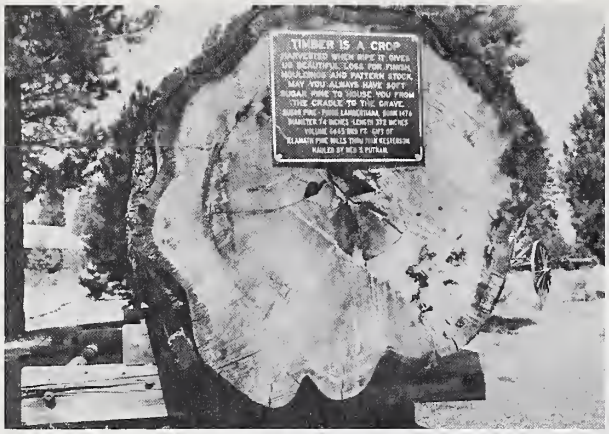
1901–09 During President Theodore Roosevelt's administration more than 148 million acres were added to the National Forests. The net increase was, however, 132 million acres since much was reclassified as farmland and opened to homesteading

1910 In June the Forest Products Laboratory was established by the Forest Service in cooperation with the University of Wisconsin at Madison, Wis. This laboratory was the first of its kind, and has become the world's outstanding institution for the scientific study of wood and its uses. Studies are constantly in progress to find new products to be made from wood; to solve problems of manufacture of wood products; to find ways to make use of wood material now wasted and to use the less favored trees; to improve methods of sawing, drying, and preserving lumber; and to find the answers to many other problems concerning wood.

An act was passed authorizing the President to reserve public lands for waterpower sites or irrigation. Permits for waterpower development on Government land had been issued since 1898, but this law recognized that some areas should be set aside particularly for their water.

The great forest fires in Idaho and Montana burned over 3 million acres and cost the lives of 85 men, 74 of whom were firefighters. The worst came on August 20, when a hurricane arose and fanned and drove the raging flames at great speed. Settlers were hastily loaded on trains and carried to safety, sometimes over bridges and trestles already afire. Many feats of heroism were performed, but the most outstanding was that of Ranger Edward Pulaski, who saved all but 6 of his crew of 45 firefighters when they were trapped by the fire, by leading them to an abandoned mine tunnel.

The Indian Forest Service was set up in the Department of the Interior with three technically trained men to oversee commercial forest and woodland on



F-500271

Figure 18.—Large sugar pine log on a skid sled, Collier State Park, Oreg.

Indian lands. Congress enacted the first general law authorizing the sale of live timber from tribal and allotted Indian lands.

Glacier National Park was established in Montana with 957,365 acres from the Blackfoot National Forest.

1911 In the Weeks law (act of March 1, 36 Stat. 961) a new national policy was established—the purchase by the Federal Government of forest lands necessary to the protection of the flow of navigable streams. Most of the National Forests east of the Great Plains, where there was little land left in the public domain, were acquired by purchase of lands under this act and acts amending it. Certain National Forests in Alabama, Arkansas, Michigan, Minnesota, Nebraska, Oklahoma, and Florida originally were established from land still in the public domain, but additions were made by purchase. The Weeks law also established a program of Federal-State cooperation in fire protection, later expanded under the Clarke-McNary law of 1924.

1912 An act (37 Stat. 269, 288) provided that 10 percent of all forest receipts for the fiscal year 1912 should be used for roads and trails within the National Forests in the States from which the receipts came. The next year (37 Stat. 828, 843) this arrangement was made permanent. The need for roads and trails were tragically shown by the terrible fires of 1910, many of which might have been stopped before they became dangerous if there had been roads by which the firefighters could reach the fires quickly.

1914 The Eastern National Forest District was established by the Forest Service. Headquarters were at Washington, D.C., but were moved to Philadelphia in 1941. Agitation for forest reserves in the East had begun as early as 1899.

1915 The term lease law was passed by Congress, authorizing issuance of term permits on National Forests for summer homes, hotels, stores, and other structures needed for recreation or public convenience.

Rocky Mountain National Park was created in Colorado from 217,091 acres of the Arapaho and Colorado National Forests.

1916 The act of July 11 appropriated $10 million "for the survey, construction, and maintenance of roads and trails within or only partly within the National Forests, when necessary for the use and development of resources upon which communities within and adjacent to the National Forests are dependent." This was in addition to the 10 percent of receipts set aside by the law passed in 1912.

Congress passed the act creating the National Park Service in the Department of the Interior.

Congress passed the Revestment Act, sometimes called the Chamberlain-Ferris Act, providing for the revestment to the Federal Government of title in 2,830,182 acres of land held by the Oregon and California Railroad granted to it for the purpose of aiding in the construction of a railroad from Portland, Oreg., to the northern boundary of California.

The Red Lake Indian Forest of almost 110,000 acres was created within the Red Lake Indian Reservation in Minnesota.

A Period of Rapid Progress 1918–1941

After World War I, cooperation in forestry work between the Federal Government, the States, and private forest-land owners developed rapidly. State forestry departments were expanded and strengthened. The period was marked by an increasing interest in forestry on the part of private owners. The National Forest System was further developed.

1918 First National Forests established in the East: Shenandoah (later changed to George Washington) National Forest in Virginia, and White Mountain National Forest in New Hampshire.

1919 The National Parks Association was organized to promote the welfare of the National Park System and safeguard high standards in the development of National Parks.

1920 Senate Resolution 311 called for a report on timber depletion, lumber prices, lumber exports, and timber ownership in the United States. The report prepared by the Forest Service, known as the "Capper Report," gave the most complete nationwide data on the forest situation up to that time.

The Forest Service made a cooperative agreement with the War Department for airplane forest patrol in California during the fire season. In 1925 it was expanded to cover Oregon, Washington, Idaho and Montana.

The Association of State Foresters was established to promote cooperation in forestry matters between the States, as well as with the Federal Government.

1921 President Harding proclaimed the first nationwide Forest Protection Week.

The National Forest district of Alaska was established, with headquarters at Juneau.

The Highway Act made separate appropriations for roads of general public importance and roads of primary forest importance in the National Forests.

The Appalachian (later named the Southeastern) and the Southern Forest Experiment Stations of the Forest Service were established.

1922 The Izaak Walton League of America was founded.

Under the act of March 20 (42 Stat. 465), National Forest land could be exchanged for privately owned land within the boundaries of National Forests. The act of March 3, 1925 (43 Stat. 1215), authorized exchange of National Forest timber for private land.

Figure 19.—CCC planting crew, Klamath National Forest, Calif.

Congress also appropriated $10,000, the first money appropriated for the improvement of public campgrounds on the National Forests.

Congress authorized the Secretary of the Interior to protect and preserve from fire, disease, or the ravages of beetles or other insects, timber owned by the United States upon public lands, national parks, national monuments, Indian reservations, and other public lands. It also provided for cooperation with other Federal agencies, with States, and with private owners of timber.

1924 The Clarke-McNary law (act June 7, 43 Stat. 653) extended the Federal land purchase policy under the Weeks law of 1911. Lands necessary for the production of timber, as well as for the protection of navigation, within the watersheds of navigable streams could be purchased. Only headwaters of navigable streams were included under the Weeks law.

Section 2 of the Clarke-McNary law authorized the Secretary of Agriculture to enter into cooperative agreements with the States for the protection of State and private forests against fire. State and private owners were to contribute not less than half the total costs. Other sections of the act provided for studies of forest taxation; cooperation with the States in the production and distribution of forest planting stock for windbreaks, shelterbelts, and farm woodlands; and

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cooperative work in farm forestry extension. This law greatly expanded Federal-State cooperation in forest work, and gave a big impetus to the establishment and development of State forestry agencies. It was one of the important milestones in the advance of American forestry. It was a monument to Chief William Greeley.

Under acts of June 7, 1924, and March 3, 1925, donations of land could be made to the National Forests.

The first Wilderness Area was set aside, in the Gila National Forest, New Mexico. Many others were added later throughout the West and in the East as well, for a total of more than 9 million acres dedicated to remain in their natural wild state, visited by man only on horseback, foot or by canoe.

1926 American foresters attended First World Forestry Congress in Rome.

1927 A Forestry Division was created in the National Park Service.

A cooperative board, called the Forest Protection Board, was established. It was composed of representatives of the National Park Service, the General Land Office, the Bureau of Indian Affairs, the Bureau of Biological Survey, the Weather Bureau, and the Forest Service. It was another advance in cooperation for the prevention and suppression of forest fires.

1928 The Woodruff-McNary Act was approved, authorizing a series of yearly appropriations up to a total of $8 million to carry out the provisions of section 7 of the Weeks Act of 1911 for the protec-

tion of watersheds of navigable rivers. Under this and various other acts, some additional land was placed in National Forests.

The McSweeney-McNary Act (45 Stat. 699) authorized a program of forest research to "insure adequate supplies of timber and other forest products . . . to promote the full use of timber growing and other purposes of forest lands in the United States, including farm woodlots and those abandoned areas not suitable for agricultural production, and to secure the correlation and the most economical conduct of forest research in the Department of Agriculture. . . ." This act provided a charter for a broad program of forest research. It authorized a nationwide survey of forest resources.

1929 The North Central National Forest District was established, with headquarters at Milwaukee, Wis. (Name was later changed to Lake States.) In 1930 all districts were changed to regions.

A Timber Conservation Board was appointed by President Hoover to find a remedy for the lumber industry, troubled by the business depression.

1930 The first Primitive Area was set aside in the National Forest System. Within 9 years 5.5 million acres of such wilderness-type lands were designated by the Chief of the Forest Service.

Great Smokies National Park was established in mountains of North Carolina and Tennessee.

The Knutson-Vandenberg Act (46 Stat. 527) authorized the expansion of tree-planting operations on the National Forests.

The Forest Service began the first complete survey ever undertaken of forest resources and conditions on the Nation's 648 million acres of forest land. When we entered World War II in 1941, about half the area had been inventoried. After the war ended, the survey was resumed.

1932 George Washington Memorial Forests were sponsored by the Wisconsin Federated Women's Clubs on the Nicolet National Forest in May and by the Minnesota Federation of Women's Clubs on the Superior National Forest in October. These were among the first memorial plantings within National Forests sponsored by women's organizations.

1933 On March 21, newly inaugurated President Franklin D. Roosevelt sent to Congress his message on legislation to relieve distress, to build men, and to build up the Nation's forest resources. Ten days later Congress enacted legislation for the establishment of Emergency Conservation work, later called the Civilian Conservation Corps (CCC). On April 10 the first quota of 25,000 men was called, and on April 17, the first camp, Camp Roosevelt in the George Washington National Forest near Luray, Va., was occupied. During the 9 years the CCC program was continued, more than 2 million young men participated, and a vast amount of forest protection, tree planting, watershed restoration, erosion control, and other improvement work was accomplished. About 2¼ billion tree seedlings were planted. At the peak of the program in 1935, the Corps had 520,000 enrollees and 2,652 camps, of which 1,303 camps were assigned to forestry projects. The CCC program was ended in 1942, after the United States entered World War II.

Senate resolution 175 (72d Cong., 1st sess., 1932) introduced by Sen. Royal S. Copeland of New York, called for a plan that would insure the economic and social benefits that could and should be derived from well-managed forest lands. Previous reports revealed the state of the forest without offering a plan for improving it. The Forest Service therefore prepared and sent to the Senate "A National Plan for American Forestry." This monumental report, printed by Senate order, is popularly known as the Copeland Report. The main recommendations for a satisfactory solution of the Nation's forest problem were: (1) A large extension of public ownership of forest lands, and (2) more intensive management on all forest lands. Earle Clapp, later Chief, supervised the Report.

The Soil Erosion Service (which in 1935 became Soil Conservation Service) and the Agricultural Adjustment Administration were established. These agencies developed large-scale programs for conservation of land and soil resources and helped many farmers improve management of soils.

1934 The Eastern National Forest Region was divided and a new region, the Southern, was created with headquarters at Atlanta, Ga.

The Taylor Grazing Act was passed June 28 "to stop injury to public grazing lands by preventing overgrazing and soil deterioration, to provide for orderly use, improvement and development, to stabilize the livestock industry dependent upon the public range." It applied to rangelands in the public domain that had not been taken up for homesteads or reserved in national forests. These lands had had no management or protection, and were becoming progressively poorer. Administration was placed under the Department of the Interior.

Congress directed the Secretary of the Interior to make rules and regulations for the operation and management of Indian forestry units on the principle of sustained-yield management and to restrict grazing and take other measures necessary to protect the range on Indian lands.

Figure 20.—Young trees reforest clearcut patches, such as those in the background. F—517963

1935 The National Resources Committee was established to investigate the country's natural resources and plan for their development and use.

The Soil Conservation Service was established in the Department of Agriculture to succeed the Soil Erosion Service of the Interior Department.

Congress passed the Fulmer Act to extend Federal aid to the States in acquiring State forests, but it was never used.

The first tree in the shelterbelt program of the prairie plains region was planted near Mangum, Okla. This was the start of the Prairie States Forestry Project, to lessen drought conditions, protect crops and livestock, reduce duststorms, and provide useful employment for drought-stricken people. Under the project the Forest Service cooperated with prairie farmers in planting strips of trees at right angles to the prevailing winds on farms in the Dakotas, Nebraska, Kansas, Oklahoma, and northern Texas. The work was begun under Executive order of President Roosevelt, and later (1937) Congress passed covering legislation in the Norris-Doxey Cooperative Farm Forestry Act. In 7 years, more than 217 million trees were planted; 30,000 farmers participated in the program. In 1942, the project was transferred to the Soil Conservation Service to be continued as an activity of the soil conservation districts. Many benefits have been derived from the program. Other countries have set up similar projects.

1936 Complying with a resolution of Sen. George Norris of Nebraska (S. Res. 289, 74th Cong., 2d sess.), the Forest Service prepared a report on the western range (mostly in the public domain) and methods of improvement. It incorporated information obtained by many years of research on range and watershed problems, by special surveys, and by 30 years' administration of National Forests. The region was found badly depleted by continuous overgrazing.

The Omnibus Flood Control Act provided for surveys and improvements of watersheds for flood control. It recognized that proper forest and range management stabilizes streamflow and reduces flood and erosion damage. The watershed work was to be done by the Department of Agriculture.

The Naval Stores Conservation Program was authorized under the Soil Conservation and Domestic Allotment Act. The program provides payments to turpentine producers who work their timber according to approved conservation practices.

1937 The Norris-Doxey Cooperative Farm Forestry Act (50 Stat. 188) provided for increased technical aid to farm owners to manage their woodlands.

An act to provide for sustained yield management by the Department of the Interior of the revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road grant lands in the State of Oregon was approved (50 Stat. 874). (When these lands, comprising 2,681,000 acres, had been repossessed by the Government, the Revestment Act of 1916 and subsequent legislation provided for the timber assets to be sold without any provision for maintaining timber productivity.)

The Secretary of Agriculture set aside the northern part of the Superior National Forest in Minnesota, 640,000 acres, as a Roadless Area, becoming part of the National Forest Wilderness system in 1939. Later the size was increased to 886,000 acres, and renamed the Boundary Waters Canoe Area. It adjoins the huge Quetico Provincial Park of Canada.

1938 President Franklin D. Roosevelt, in a special message to Congress, requested a study of the forest situation in the United States, particularly with reference to privately owned forest lands. Congress then authorized a Joint Committee on Forestry to conduct such a study. Its report, known as the Bankhead Report, was issued in 1941.

Olympic National Park created in western Washington with 648,000 acres of Olympic National Forest, greatly expanding size of the original National Monument. Later, over 200,000 acres were added to the Park from the Forest's Primitive Area.

The New England hurricane in September 1938 blew down millions of trees. A Northeastern Timber Salvage Administration was promptly set up, under the supervision of the Forest Service, to salvage as much as possible of the blown-down timber. By 1941 more than 700 million board feet of timber had been salvaged. The large amount of down timber greatly increased the fire hazard, and the Forest Service and the State forestry agencies also cooperated in the huge job of reducing this danger.

1940 The Lea Act authorized the Secretary of Agriculture to provide for the nationwide coordinated control of white pine blister rust.

1941 Following a 3-year study, chiefly of private forests, the Joint Congressional Committee on Forestry, under the chairmanship of Senator John H. Bankhead of Alabama, issued a report on "Forest Lands of the United States." The report cited deplorable conditions in the forest areas of many sections of the country, and recommended "the establishment of a real forest economy in this country which . . . will put to constructive use one-third of our total land area." The report recommended various cooperative aids to private forest-land owners, expansion of public ownership, and a Federal-State system of regulation of forestry practices.

The "Tree Farm" program, sponsored by forest industries, was started in the Pacific Northwest.

This year marked the 50th milestone in the National Forest System.

World War II Period
1941–1945

World War II caused heavy inroads on the Nation's forests, as wood became a critical war material needed for barracks and cantonments, ships and docks, war plants and war housing, gunstocks, explosives, airplanes, boxes and crates for war supplies, and hundreds of other essential uses. The Armed Forces used a greater tonnage of wood than of steel. Many peacetime activities were curtailed, such as the nationwide forest survey, reforestation work, and land acquisition under the Weeks law. The Forest Service, however, was called upon for numerous special war jobs; surveys of war requirements and supplies of forest products; an emergency rubber project for production of guayule and other rubber-bearing plants; a large-scale logging project in Alaska for production of urgently needed aircraft spruce; constant manning of lookout stations as part of the Army aircraft warning system; surveys of quinine, balsa, and other special forest-product resources in Latin America; emergency fire protection measures; numerous important studies and tests at the Forest Products Laboratory; and much other war work.

To help stimulate output of wood for war needs, a special Timber Production War Project was launched. This boosted lagging production and at the same time encouraged logging methods that left trees for future use and wasted as little as possible.

With so many men serving in the armed services, regular fire protection forces were severely depleted. The Office of Civilian Defense established a volunteer Forest Fire Fighters Service to aid Federal and State forestry agencies. Some 185,000 citizens enrolled. Conservation agencies cooperated in special fire prevention campaigns to make the public more aware of the great need for individual carefulness in fire prevention. The Japanese made numerous attempts to fire west coast forests with incendiary bombs carried by balloons, but were unsuccessful. Paratroopers and Army ground personnel were of great assistance in fighting fires.

Although winning the war was the most important objective, the cause of conservation was not entirely forgotten. The demand for more lumber showed the need for more forestry legislation. Some laws passed by the 78th Congress were:

Public Law 273 of March 29, 1944 (58 Stat. 132),

Figure 21.—TV relay stations on the crest of the Sandia Mountains, Cibola National Forest, N. Mex.

F–482905

Figure 22.—Recovering gold from a river bottom, Tahoe National Forest, Calif. F–503107

authorized cooperative agreements for joint operation of public and private timber under sustained yield plans.

Public Law 296 of May 5, 1944 (58 Stat. 216), amended the Clarke-McNary Act to authorize increased appropriations for cooperative fire protection.

Public Law 321 of May 31, 1944 (58 Stat. 265), authorized appropriations to keep forest surveys up to date.

Several States passed laws permitting the establishment of State, county, city, town, and school forests. Many States increased their appropriations for forestry and for fire protection.

After World War II
1945–1967

An international organization for forestry was started under the auspices of the United Nations Food and Agriculture Organization (FAO). At the first meeting of the FAO in 1944, a technical committee on forestry and primary forest products was set up, with nine nations represented, under the chairmanship of Henry S. Graves, dean emeritus of the Yale School of Forestry and former Chief of the Forest Service. A report of this committee called attention to the fact that "in the face of . . . rapidly multiplying uses for wood which create ever-mounting wood needs, the world is confronted by the inescapable fact that the forests—sole source of wood—are steadily diminishing."

At a meeting of the FAO in Quebec in the fall of 1945, a strongly united group representing 21 nations made up the Forestry Committee. In 1946, a Branch of Forestry and Forest Products was set up as a permanent organization under FAO, and Marcel LeLoup, formerly Director General of the Department of Forests and Waters of France, was named Director. S. B. Show, Deputy Director, came from the Forest Service. The organization undertook to set up worldwide forestry statistical services, assist governments with advice on forest policy, send out missions to make scientific studies, promote research and circulate findings among nations, and facilitate exchange of scientific personnel.

1945 The first Smokey Bear symbol appeared on a national poster to spearhead the cooperative forest fire prevention program. Smokey became one of the best known advertising symbols in the United States, as a result of the time and space donated by the media working with the Advertising Council, Inc., the National Association of State Foresters, and the Forest Service.

1946 An American Forest Congress was held in Washington, D.C., by the American Forestry Association (AFA). Representatives of forest industries, labor, Federal and State forestry agencies, and various civic and conservation organizations participated. Out of the discussions the AFA formulated a Program calling for effective protection of all forest and watershed lands from fire, intensified control of destructive forest insects and diseases, expansion of technical assistance to owners of small forest properties, increased forest planting, more research in timber growing and harvesting and in wood utilization, and regulation of timber-cutting practices by the several States.

The General Land Office, Department of the Interior, established a forestry division responsible for managing forests on the public domain. The General Land Office and the Grazing Service were combined

Figure 23.—A special use resort on the Stanislaus National Forest, Calif. F–499150

to form the new Bureau of Land Management in July of this year.

1945–47 The Forest Service completed a postwar reappraisal of the forest situation in the United States. Several reappraisal reports were published. The reappraisal showed that the volume of sawtimber in the country's forests had declined some 43 percent in 36 years, that sawtimber was being drained from the forests one and a half times as fast as it was being replaced by growth, and that there had been a marked deterioration in quality as well as quantity of timber. It showed that cutting practice on 64 percent of all private forest land was poor to destructive; 28 percent was fair; only 8 percent was good or better. The reports said there is ample forest land in the United States to grow all the timber we are likely to need, but that if prospective future requirements are to be met, sawtimber growing stock should be built up to double the present volume.

A separate, independent appraisal of the Nation's forest resources was completed by the American Forestry Association in 1946. Although there were some minor differences in details, the overall findings of both appraisals were basically in agreement.

1947 Congress passed a Forest Pest Control Act (61 Stat. 177), which recognized the Federal concern and responsibility in the control of forest insects and diseases on a nationwide basis, and on lands in all classes of ownership. It paved the way for more adequate services and facilities for prompt detection and suppression, and authorized Federal cooperation with States and private owners to combat outbreaks.

1948 Delegates from 21 countries at an Inter-American Conference on Conservation of Renewable Natural Resources in Denver, Colo., adopted a declaration which said in part: "The crucial problem of our generation is to safeguard, maintain, de-

velop, increase, and wisely use for the common benefit of mankind the natural resources of the earth."

1949 Congress gave its consent and the President approved a northeastern interstate forest fire protection compact on June 25 (63 Stat. 271). The States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York banded together to promote effective prevention and control of forest fires through development of integrated fire protection plans, provision for mutual aid in fighting fires, etc. During the next few years, interstate forest fire protection compacts also were authorized by Congress for the Southeastern, South Central, and Middle Atlantic States.

The Anderson-Mansfield Reforestation and Revegetation Act (63 Stat. 762) was approved. It provides for more rapid reforestation and revegetation of forest and range lands in the National Forests.

The Clarke-McNary Act was supplemented and amended (63 Stat. 909), to increase from $9 million to $20 million, by successive yearly increases, the annual authorization for Federal cooperation with the States in forest fire protection. The new act extended the authority for cooperation with the States in distributing forest planting stock to owners of all forest lands instead of to farmers alone, and increased from $100,000 to $2,500,000 the yearly authorization for this work. The annual appropriation authorization for the Federal-State extension program for farmers in the management of small woodlands was increased to $500,000. Funds actually provided were much less.

The Third World Forestry Congress met in Helsinki, Finland, under auspices of the United Nations Food and Agriculture Organization. The Congress adopted a report affirming the belief that each nation should develop a sound forest policy for the proper management of its forest resources.

Forestry had a prominent part in the United Nations Scientific Conference on the Conservation and Utilization of Resources, held at Lake Success, N.Y. This conference brought together technicians, including many foresters, from many nations for exchange of ideas and discussions on the conservation and use of natural resources for human welfare.

1950 Congress passed the Granger-Thye Act, approved April 24, to facilitate and simplify the administration of the National Forests. It provided for the constitution and election of local advisory boards for each National Forest or administrative subdivision thereof whenever a majority of the grazing permittees so petition. Appropriation authorization for range improvements was provided for on a per-animal-month use basis; and for purposes of controlling grazing on National Forest lands, the act limited issuance of grazing permits to periods of 10 years and renewals thereof. In addition, the act clarified the intent and extended certain authorities of existing statutes.

The Cooperative Forest Management Act was approved (64 Stat. 473). It authorized Federal cooperation with the States to provide on-the-ground technical services to private forest landowners and operators and processors of primary forest products for forest management and the harvesting, marketing, and processing of forest products. This superseded the Norris-Doxey Act of 1937.

1943–50 Comprehensive interagency river basin planning, in which forestry plays an important part, began with the establishment of the Federal Inter-Agency River Basin Committee in 1943. This committee was formed to permit agencies of the Departments of War, Interior, and Agriculture, and the Federal Power Commission (and later the Department of Commerce and Federal Security Agency) to cooperate more effectively in river basin projects. Its first move was to establish the Columbia River Basin Inter-Agency Committee. Later a Missouri Basin Inter-Agency Committee and a Pacific Southwest Inter-Agency Technical Committee were established In 1950 the President asked also for comprehensive interagency participation in river basin plans for the New England-New York region and the Arkansas-White and Red River basins. Early in 1944, the Departments of War and Interior presented a plan for the Missouri River basin. The approval of this plan, commonly called the "Pick-Sloan Plan," in the Flood Control Act of 1944 focused attention on the need for watershed improvement. The Department of Agriculture prepared the Missouri River Basin Agricultural Program, described in House Document No. 373, 81st Congress (Oct. 5, 1949).

1951 The American Forestry Association published a survey of progress in forestry for 1945–50. The adoption of forestry practices by private industry, particularly some of the larger, more progressive companies, was called significant, although in 1949 more than half of the Nation's private forest land was still without management. The "tree farm" program, industry-sponsored, spread rapidly in this period. Conservation education in schools and colleges became more prominent, and women's clubs and other public-spirited organizations became more active in the movement. State forestry departments were strengthened, showing a gain in employment of professional foresters of 125 percent, with 1,087 in 1949. Six States in this period enacted control mea-

Figure 24.—Wood Lodge on Lake George, Inyo National Forest, Calif. F–487564

sures, raising to 16 the number of States with laws regulating cutting practices in greater or less degree. Between 1944 and 1950 the number of colleges and universities offering forestry degrees increased by 8, to a total of 34, with an enrollment of 8,000.

The first of several scattered forest districts were set up by the Bureau of Land Management to provide management and protection for public domain forest and watershed lands in the West.

1952 A nationwide Forest Research Advisory Committee was established to advise the Forest Service on its research program.

A new checklist of native and naturalized trees of the United States, published by the Forest Service, listed 1,027 species, varieties, and hybrids.

1953 The Forest Service was assigned the management of some 7 million acres of "land utilization project" lands acquired by the Federal Government during the depression years of the 1930's. These lands were purchased under provisions of Title III of the Bankhead-Jones Farm Tenant Act of 1937 and other acts in a program to retire submarginal farmlands from agricultural use. The lands were previously administered by the Soil Conservation Service. Long-term policy of the Department of Agriculture looked to ultimate disposal of these lands according to their best use, either through additions to National Forests, transfer to other Federal or State agencies for conservation uses, or return to private ownership. (See paragraph on National Grasslands, p. 39.)

Research and control work on forest insects and diseases, formerly handled by other agencies of the Department of Agriculture, was transferred to the Forest Service.

1954 The first pulpmill in Alaska began operation, as a result of a long-term sale of timber from the Tongass National Forest. This was the fruition of years of effort by the Forest Service to bring about the development of a pulp and paper industry in southeastern Alaska based on a sustained yield of timber from National Forest lands.

The Watershed Protection and Flood Prevention

Act (68 Stat. 666) authorized the Department of Agriculture to cooperate with States and with local agencies in planning and carrying out works of improvement on small watersheds. Earlier, in the Agriculture Appropriation Act for the fiscal year 1954, the Department was authorized to undertake 5-year programs for the improvement of a number of "pilot" watersheds.

1955 The multiple-use mining law (69 Stat. 367) was an important conservation measure affecting National Forests and other public lands. While safeguarding legitimate development of mineral resources, it was a large step toward preventing abuses of the mining laws and interference between mining claims and the management of National Forest resources.

This year marked the 50th anniversary of the establishment of the Forest Service in the U.S. Department of Agriculture.

1956 Annual receipts from sales of timber, grazing fees, and other uses of the National Forests passed the $100 million mark.

The first practical application of techniques for dropping water or chemicals on going fires was made by the Forest Service and cooperating agencies in California. Specially designed airplane-tankers were used.

The Agricultural Act of 1956 (Soil Bank) included provisions for Federal financial assistance to farmers for converting general cropland to conservation uses, including the planting of trees. By the spring

Figure 25.—Skidding during logging operation, Boise National Forest, Idaho.

Figure 26.—An experimental helicopter yarding operation in Oregon. F–521788

of 1957, 536,000 acres were under conservation reserve contract for tree planting.

1957 Operation Outdoors, a 5-year program to improve and expand recreation facilities in the National Forests, was started by the Forest Service with the approval of Congress.

This was the first year in which total planting by all agencies, public and private, passed the million-acre, or billion-tree mark. About three-fourths of the planting was done by farmers and other landowners with trees procured from State forestry agencies under the Federal-State cooperative tree-distribution program authorized by the Clarke-McNary Act of 1924.

1958 The Timber Resource Review. This nationwide study was conducted by the Forest Service and cooperating Federal, State, and private agencies, in the mid-1950's. The report showed that timber growth was increasing; on a national basis, annual sawtimber growth was nearly 9 percent more than that estimated a decade earlier. The quality of timber growth, however, was reported to be declining; the more desirable trees were losing ground to poorer quality trees.

National forests and other public holdings comprised 27 percent of the country's commercial forest land. Of the private commercial forest land, 13 percent was in industrial holdings, and 60 percent was divided among 4½ million farmers and other private owners, mostly in small holdings averaging less than 100 acres. Forest productivity was reported to be generally lowest, and forest management least advanced, on these small holdings.

The report showed that substantial increases in timber growth would be necessary to meet the greatly increased requirements of the future. Best possibilities for permanently adding to timber supplies mentioned were improved stocking, accelerated reforestation, expanded control of forest insects, diseases, and fire, and more complete utilization of the timber grown.

In November the U.S. Treasury received the one-billionth dollar of National Forest receipts from the Forest Service. Most came from carefully supervised timber sales.

The first commemorative postage stamp honoring forest conservation was issued by the Post Office Department.

1959 A "Program for the National Forests," a comprehensive, long-term plan for improvement and development of these public forests, was submitted to the Congress by the Secretary of Agriculture.

1960 The Multiple Use-Sustained Yield Act (Public Law 86–517), signed June 12 by President Eisenhower, declared that National Forests are to be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. It gave congressional confirmation of the long-established policy of the Secretary of Agriculture to develop and administer renewable surface resources of the National Forests for multiple use and sustained yield of their several products and services. It stressed that consideration be given relative values of resources in particular areas and in established wildernesses.

Multiple use is management of all renewable surface resources of the forests so that they are used in the combination that will best meet the needs of the American people. It provides for judicious use of the several land resources with adjustments and coordinated management to conform with changing needs and conditions. *Sustained yield* is continuous achievement and maintenance of a high-level output of forest resources without impairing the productivity of the land.

National Grasslands were established within the National Forest System June 20 when an order of the Secretary of Agriculture gave 22 land utilization projects in 11 Great Plains and other Western States the new status of National Grasslands. Multiple-use sustained-yield management of these lands was prescribed for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The projects, containing 3,822,000 acres of land suited to grassland agriculture, were purchased by the Government in the 1930's as part of a land-use adjustment program. The new status provided a stable form of management, especially needed for resource conservation in erosion-prone areas.

The Fifth World Forestry Congress assembled at Seattle, Wash. The 2,000 participants represented 68 countries and 9 international organizations; the meeting was the largest ever devoted to forestry. The central theme was "multiple use of forest lands." About 450 addresses and technical papers were presented. By resolution, the Congress called "on all governments to study, develop, and encourage sound concepts of multiple-use management as a means of providing optimum satisfaction of human needs from forest and related lands."

About 2 billion trees were planted on 2.1 million acres in the United States, equaling the high record of 1959. Nearly a third of this planting was due to a Conservation Reserve program with payments to retire unneeded cropland from production. Almost nine-tenths of the land planted was privately owned. The Department of Agriculture estimated in 1962, however, that 70 million acres still needed tree planting.

1961 President Kennedy transmitted to Congress a 10-year "Development Program for the National Forests." This broadened the 1959 program, including higher estimates for recreation resource management and development; intensified timber resource management and increased timber harvests; expanded road and trail construction to serve recreation, timber harvest, and protection; and purchase of selected private tracts inside National Forests, especially those of key recreational value.

1962 Recreational visits to the National Forests and National Grasslands totaled 113 million —four times those in 1950. Visits to State forests and parks also continued to increase rapidly.

1963 The Nation's forests were designated to play an increasingly important role in the Department of Agriculture's Rural Areas Development Program and the war on poverty. The allocation of over $60 million to the Forest Service for accelerated public works projects in fiscal years 1963 and 1964 promoted many conservation improvements.

1964 The "third wave" of conservation, begun in the Kennedy administration, was enlarged in the Johnson administration.

The Forest Service's publication, "Timber Trends in the United States," gave a comprehensive analysis of the forest situation nationwide. The report showed that for the first time annual growth of timber in the United States, both in the East and in the West, is exceeding the annual cut, although average quality of available timber continues to decline.

Congress passed the Wilderness Act, classifying 9.1 million acres of National Forest land as Wilderness and 5.5 million acres as Primitive Areas. Some of the latter have since been approved by Congress for the Wilderness classification. The act gives legislative endorsement to long-standing Forest Service policy.

1965 President Johnson delivered his message on Natural Beauty to Congress, and led the first White House Conference on Natural Beauty.

The 89th Congress may be known as the "Conservation Congress," since it passed 51 conservation measures. Congress became increasingly aware of man's contamination of his environment and started corrective action. Water pollution, air pollution, the acquisition and designation of lands for recreation purposes, and the rapidly continuing conversion of farms and forests into manmade facilities (urban sprawl) were the leading conservation problems of the day.

The area burned by forest fires dropped to a record low of 2.6 million acres, demonstrating the effectiveness of continuing improvements made in forest fire control equipment and techniques. In comparison, losses 10 years earlier were nearly three times this amount. One-half of the acreage burned in 1965 was on the 3 percent of the land that lacked organized fire protection.

1966 President Johnson asked Congress to act to sustain an environment suitable for man. At a National Youth Conference on Conservation and Natural Beauty, he called for a national effort to blend economics with esthetics, and natural beauty with practicality.

The first year of full operation for the Job Corps program on National Forests was completed. During the year, this joint endeavor of the Forest Service and the Office of Economic Opportunity saw 6,500 Corpsmen in 47 camps successfully complete a program of upgrading both environmental and human resources. These young men from deprived backgrounds received basic schooling, skills training, and job experience which permitted them to take a better part in American life.

The Nation's 154 National Forests and 19 National Grasslands, covering 187 million acres in 42 States and Puerto Rico, reported 150 million visitor-days of use.

On March 1 the U.S. Treasury received the two-billionth dollar of National Forest receipts from the Forest Service.

1967 The "Quality of Environment" continued to dominate legislation and conservation activities. The "Air Quality Act of 1967" was passed by Congress without a dissenting vote. An omnibus Water Pollution Bill was passed by the Senate. This was designed to strengthen and amend the Federal Water Pollution Control Act already in effect.

The Secretary of Agriculture issued a document, "Resources in Action—Agriculture/2000," which outlined new policies for the Forest Service and other USDA agencies to conserve "man's total environment."

Awakening of Environmental Awareness 1968–1975

1968 The 90th Congress created two National Parks, three National Recreation Areas, four Wildernesses, a Wild, Scenic, and Recreational River System, eight Scenic Rivers, and a National Trail System.

The President's Council on Recreation and Natural Beauty (created in 1965) presented its report, "From Sea to Shining Sea," which included numerous proposals and recommendations to enhance the quality of the environment. One recommendation was for grants-in-aid to help the States establish natural area systems.

The Forest Service began a new pilot program to provide outdoor nature experience for dwellers in urban areas, including school children and other groups and individuals, on National Forests close to heavily populated centers. It was called "Outdoor Patterns for People." A model was set up on the George Washington National Forest in northern Virginia, less than 100 miles from Washington, D.C.

A set of scaled gradual increases in the nominal livestock grazing fees on National Forests and National Grasslands, as well as on public lands managed by the Bureau of Land Management, extending over a 10-year period, was announced by the Secretaries of Agriculture and Interior. The ultimate aim was to have the fees charged to livestock owners reflect the actual value of the forage consumed.

Congress restricted, for 3 years, the export of logs from Federal forest lands in the West.

The Multiple Use Advisory Committee for the National Forests called for more emphasis on esthetics and landscape architecture in timber management, more useful disposal of waste after logging, removing logs by methods which avoid destruction of ground cover, and harvesting in small patches rather than in large blocks when clearcutting is used. It also advised that roads built primarily for logging be closed or limited in use after logging is completed.

1969 During hearings conducted by the Senate and House Banking Committee on rapidly rising prices for lumber and plywood, testimony revealed that in the National Forests in the West, 10 billion board feet of timber were being lost every year to in-

Figure 27.—Building a fire lane during Robie Creek fire, Boise National Forest, Idaho. F-479585

sects, disease, wind, fire, and old age. It was estimated that half of this amount might be salvaged if these areas could be made accessible for harvest.

U.S. Plywood-Champion Papers, Inc., announced appointment of seven leading conservationists and leaders in environmental control as advisors in the construction and operation of the new forest products manufacturing complex it planned to build in southeastern Alaska. The objective was to ensure that wildlife, and air and water quality, are adequately protected.

Late in 1969, Congress passed the National Environmental Policy Act (NEPA) (P.L. 91-190; 83 Stat. 852) to ensure that activities of man be kept in harmony with the natural environment. The act called upon the President to set up a Council on Environmental Quality, and directed Federal agencies to make advance reports on expected environmental adjustments of major actions they plan to take, including Environmental Impact Statements as appropriate. This latter requirement proved to have an unprecedented moderating effect on planning and implementing public land management decisions.

The first Pioneer Area in the National Forest System was created—31,500 acres in the Clearwater and St. Joe National Forests in Idaho. Timber harvesting and motorized vehicles were excluded, but other recreational facilities were allowed. This was an intermediate classification between wilderness and developed recreation areas.

Forest tree planting by all agencies, public and private, during fiscal 1969 totaled 1,432,000 acres. Some

580 million trees were shipped from 86 State nurseries, produced under the Federal-State cooperative tree distribution program; 114.7 million from forest industries, and 96.7 million from 12 Federal nurseries on National Forest lands.

1970 Application of forestry to urban and suburban environments received special emphasis. The Forest Service gave its support for such a program, and announced that its Pinchot Institute at Milford, Pa., would henceforth concentrate on environmental forestry research.

In a public statement in mid-October, Forest Service Chief, Edward P. Cliff, announced that the agency was changing its direction to meet the sharply changed and insistent public demands of the 1970's. He noted that this need had been anticipated by his Agency in a summary of overall broad objectives in the booklet, "Framework for the Future," which was distributed throughout the Forest Service during 1969.

The final report of the Public Land Law Review Commission, "One Third of the Nation's Land," was released in midyear after 5½ years of work and $7 million in costs. It included more than 400 recommendations regarding the 755 million acres of federally owned land, also called public lands, about half of which are in Alaska. Although it advised keeping most of this land in Federal hands, the report urged disposal of much of it to livestock men, miners, and to

Figure 28.—Fire "mop-up" using fog nozzle from a tanker, Lolo National Forest, Mont. F-471682

Figure 29.—Erosion control dam, Dog Valley, Calif. F–446778

State and local governments. It urged stricter limits to the power of the Federal Government to acquire land, and urged Congress to exercise more authority over management of public lands. The report favored more State and local control over public land use, and more participation in decisions of Federal Agencies by the people concerned.

The year turned out to be one of the worst for fires in recent years for the Forest Service, with more than 472,000 acres of National Forests burned in 18,000 fires. This was more than six times as much area as for the previous 5-year average.

The Youth Conservation Corps Act (P.L. 91–378; 84 Stat. 794) (YCC) provided a 3-year pilot program for the Departments of Interior and Agriculture to employ youths (boys and girls) 15–18 years old in a summer conservation work-learn program on the National Parks, Forests, Wildlife Refuges, and other public lands and waters. Provision was also made for grants to States for such work.

Apollo 9 space satellite photos and imagery were used to sample-survey 12 million acres of forests in the southeastern United States.

1971 Recognizing the sharp increase in public interest in the environment and the conservation of natural resources, the Forest Service inaugurated a policy to allow the public a greater voice in the planning and management of National Forests, at the national, regional, and local levels.

The Forest Service announced the FALCON Project (Forest Advanced Logging and Conservation) to develop and perfect aerial logging systems (high-line cable, balloon, and helicopter) which make minimal impact on the environment, particularly in commercial forest areas of difficult access.

Volunteers in the National Forests Act (P.L. 92–300) allowed unpaid volunteers to work for the Forest Service. A similar program for the National Parks began a year earlier.

The Alaska Native Claims Settlement Act (P.L. 92–203) awarded 40 million acres of Alaskan Federal Land to natives, and authorized expansion of National Forests and Parks in Alaska. A year later, the Secretary of the Interior set aside 80 million acres for Federal reserves, and the Forest Service announced detailed proposals for eight new National Forests in Alaska, covering over 40 million acres.

Early in 1971, the Forest Service proposed new mining regulations to protect surface areas in National Forests from damage.

The Forest Service's new antipollution Woodsy Owl symbol was launched.

1972 Clearcutting was the dominant issue of the day. After receiving solicited analyses on the impacts of clearcutting from many sources, the Federal Council on Environmental Quality considered issuing recommendations or having President Nixon issue an Executive order to limit clearcutting and put other restraints on Federal forest management. It was later decided that such an order was not needed, but the controversy continued and surfaced in several bills introduced in Congress.

In the fall of 1972 the Forest Service selected 235 proposed study areas for wilderness designation. These covered 11 million acres in 14 States and Puerto Rico. They were placed in a reserve status, to be managed so as to protect potential wilderness values

Figure 30.—Terracing a hillside to control erosion, Tahoe National Forest, Calif. F-498888

Figure 31.—Redfish Lake and Mt. Hayburn, Sawtooth National Forest, Idaho. F-510497

until final decisions are made. Public comment was invited at national and regional press conferences, and an environmental statement was filed with the Council on Environmental Quality. A final enlarged list of new wilderness study areas was issued by the Forest Service a year later.

The Forest Service reported a remarkable response by the public to reforestation assistance projects suggested and implemented by the Hunt-Wesson Co., a western food-packing concern in cooperation with the Forest Service. The firm offered to pay for the planting of forest trees where needed on National Forest lands; one tree for every label returned on a food product. More than 1.5 million labels were returned, and the Company turned over to the Forest Service money to plant an equal number of trees. Another such cooperative endeavor was carried out by the Datsun automobile firm which turned over to the Forest Service enough money to plant one tree for every person who took a test drive in their cars during the latter part of 1972. These were among several projects under the Forest Service's Cooperative Environmental Program (CO-EP).

At the end of 1972 there were 66 Wildernesses covering 10,728,092 acres, and 23 Primitive Areas covering 3,844,479 acres in the National Forest System.

1973 The first session of the 93d Congress passed the Agriculture and Consumer Protection Act (P.L. 93–86; 87 Stat. 243), which included the forestry incentives. These were designed to encourage a higher level of reforestation, forest protection, development, and management by small, nonindustrial, private and non–Federal public forest land owners.

Faced with the threat of a U.S. law which would cut log exports, Japan agreed to reduce its imports of U.S. softwood logs by 10.9 percent during the fiscal year 1974. In 1972 log exports from Alaska, Oregon, and Washington totaled a record 2.8 billion board feet, 2.52 billion board feet to Japan alone.

A new national fire danger rating system was put into widespread use in the summer of 1973, jointly, for the first time by Federal, State, and private forest fire protection agencies, using the same measurements to aim at fire danger levels, incorporating more exact data on forest fuels than was previously possible.

The President's Advisory Panel on Timber and the Environment reported, after nearly 3 years of study, "The demand for wood can be met, in harmony with environmental protection, if we give high priority to the timber-growing and cultural measures that will guarantee our future timber supply into the 21st century and beyond."

The Forest Service took two major actions on mining during 1973. It began on-the-ground implementation of its 5-year research, development, and application program called SEAM (Surface Environment and Mining), aimed at integrating modern planning, production, and reclamation of mining areas. The other major mineral action was the proposal of appropriate regulations for the 140 million acres of National Forest land, including much official Wilderness, which are subject to location and entry under the 1872 mining laws. The proposed regulations were published in December with requests for public comments, and, with revisions, were to be put into effect in September 1974.

1974 The Environmental Protection Agency granted the Forest Service emergency permission to use DDT on the tussock moth epidemic in Douglas-fir forests in Idaho, eastern Oregon, and Washington after a long, searching review and four public hearings. The aerial spraying was conducted on the most severely damaged 430,000 acres, and a larva kill of 98 percent was attained.

The Forest Service's long-heralded "Environmental Program for the Future" (EPFF) was released for public review and comment.

Undoubtedly the most significant forestry legislation enacted in 1974 was The Forest and Rangeland Renewable Resources Planning Act (P.L. 93–378), also referred to as the Resources Planning Act (RPA). The draft EPFF document, mentioned above, and the public response to it were both used as a basis for development of the Renewable Resources Program. Intended to ensure adequate preparations and funding to meet immediate and future forest research needs, the act greatly stimulated Forest Service planning activity and brought considerable encouragement to forest industries and conservationists alike that it would result in consistently adequate funding support for balanced forest resource management in the National Forest System. Under the law the Forest Service must periodically submit to Congress both a Renewable Resources Assessment and a long range Renewable Resource Program. The first transmittal of both these documents is set for December 31, 1975. Drafts of both Assessment and Program Documents were expected to be available for public comment by August 1975.

The highly successful Youth Conservation Corps was expanded and made permanent (P.L. 93–408; 88 Stat. 1066).

The new Forestry Incentives Program for non-Federal lands received an appropriation of $25 million for fiscal year 1975 in the Agriculture–Environmental and Consumer Protection Appropriations Act (P.L. 93–563; 88 Stat. 1822).

The Eastern Wilderness Act (P.L. 93–622; 88 Stat. 2096) designated 16 small areas in the East and South as new Wildernesses, and provided for study of 17 others for such status. By 1975, there were 87 Wildernesses, covering 11.5 million acres, and 13 Primitive Areas, covering 3.5 million acres in the National Forest System. It was already recommended that the Primitive Areas be reclassified as Wilderness.

Conclusion

This short history of conservation gives some of the important steps in our evolution from the belief that forests were something to be exploited and gotten rid of as quickly as possible, to the realization that forests are necessary to human welfare. And that by good management they can be kept permanently productive. As tall oaks from little acorns grow, the work of conservation has grown from a tiny beginning to a great movement, extending its benefits in all directions. It is a living movement, its parts mutually interdependent. Let us keep it growing healthily.

National Forests

Many of the present National Forests existed as Forest Reserves before this name was changed to National Forests in 1907. The first reserve, the Yellowstone Park Timberland Reserve, was set up March 30, 1891 by President Benjamin Harrison.

Over the years, the names, number, and acreage of National Forests have changed considerably as new ones were set up and existing ones were consolidated for economy and efficiency of administration, or transferred to other uses and agencies. Large areas became National Parks. In many cases two or more smaller forests which still retain their names are administered by one supervisor, for economy and efficiency. (This can be noted where forests have the same headquar-

ters in the list below. For instance, in the South, where many forests are small, there are 33 forests but only 14 supervisors, 10 of which supervise all the National Forests in their States.) One very large forest, the Tongass in Alaska, has three area managers in lieu of a forest supervisor.

Thus in 1975 there are 155 National Forests, but only 124 forest supervisors, covering 183.0 million acres. Virtually all this land is open to public recreation, and about 14.6 million acres are in Wilderness or Primitive Areas, closed to timber cutting, mechanical vehicles, and works of man. Besides the National Forest lands, there are about 3.8 million acres on 19 National Grasslands, bringing the total National Forest System lands to 186.8 million acres. The grazing areas in the Great Plains and Great Basin, plus millions of acres of relatively open National Forest land, are available for regulated use of domestic livestock and for wildlife habitat.

The research organization of the Forest Service includes the world-famous Forest Products Laboratory in Madison, Wis.; 8 Forest and Range Experiment Stations which serve various regions; and the Institute of Tropical Forestry.

National Forests—Dates Established and Location of Headquarters

REGION 1—NORTHERN REGION
(Montana, northern Idaho, northwestern South Dakota, northeastern Washington)

National Forest	*When established*	*Headquarters*
Beaverhead	July 1, 1908	Dillon, Mont.
Bitterroot	Feb. 22, 1897	Hamilton, Mont.
Clearwater	July 1, 1908	Orofino, Idaho
Custer	July 2, 1908	Billings, Mont.
Deerlodge	July 1, 1908	Butte, Mont.
Flathead	Feb. 22, 1897	Kalispell, Mont.
Gallatin	Feb. 10, 1899	Bozeman, Mont.
Helena	Apr. 12, 1906	Helena, Mont.
Idaho Panhandle (formerly Coeur d'Alene, St. Joe, & Kaniksu)		Coeur d'Alene, Idaho
Kootenai	Aug. 13, 1906	Libby, Mont.
Lewis and Clark	Feb. 22, 1897	Great Falls, Mont.
Lolo	Sept. 20, 1906	Missoula, Mont.
Nezperce	July 1, 1908	Grangeville, Idaho

REGION 2—ROCKY MOUNTAIN REGION
(Colorado, Kansas, Nebraska, South Dakota, Wyoming)

National Forest	*When established*	*Headquarters*
Arapaho	July 1, 1908	Golden, Colo.
Bighorn	Feb. 22, 1897	Sheridan, Wyo.
Black Hills (includes former Harney National Forest, established May 16, 1911).	Feb. 22, 1897	Custer, S. Dak.
Grand Mesa (established Dec. 24, 1892, as Battlement Mesa Forest Reserve)	July 1, 1908	Delta, Colo.
Gunnison	May 12, 1905	Gunnison, Colo.
Samuel R. McKelvie	Oct. 15, 1971	Chadron, Nebr.
Medicine Bow (includes part of former Hayden National Forest, added in 1929).	May 22, 1902	Laramie, Wyo.
Nebraska	July 2, 1908	Lincoln, Nebr.
Pike	Feb. 11, 1892	Colorado Springs, Colo.
Rio Grande	July 1, 1908	Monte Vista, Colo.
Roosevelt (original name "Colorado")	July 1, 1910	Fort Collins, Colo.
Routt (includes part of former Hayden National Forest)	June 12, 1905	Steamboat Springs, Colo.
San Isabel	Apr. 11, 1902	Pueblo, Colo.
San Juan (includes former Montezuma, established June 13, 1905)	June 3, 1905	Durango, Colo.
Shoshone (originally Yellowstone Timberland Reserve, established Mar. 30, 1891. Also includes former Washakie).	July 1, 1908	Cody, Wyo.
Uncompahgre	June 14, 1905	Delta, Colo.
White River (includes former Holy Cross National Forest)	Oct. 16, 1891	Glenwood Springs, Colo.

REGION 3—SOUTHWESTERN REGION
(Arizona, New Mexico)

National Forest	*When established*	*Headquarters*
Apache	July 1, 1908	Springerville, Ariz.
Carson	July 1, 1908	Taos, N. Mex.
Cibola (includes former Manzano National Forest)	Dec. 3, 1931	Albuquerque, N. Mex.
Coconino	July 2, 1908	Flagstaff, Ariz.
Coronado	July 2, 1908	Tucson, Ariz.
Gila	Mar. 2, 1899	Silver City, N. Mex.
Kaibab (includes part of former Grand Canyon National Forest)	July 2, 1908	Williams, Ariz.
Lincoln	July 26, 1902	Alamogordo, N. Mex.
Prescott	May 10, 1898	Prescott, Ariz.
Santa Fe (includes Pecos River Forest Reserve, established Jan. 11, 1892)	Mar. 27, 1918	Santa Fe, N. Mex.
Sitgreaves	July 1, 1908	Holbrook, Ariz.
Tonto	Oct. 3, 1905	Phoenix, Ariz.

REGION 4—INTERMOUNTAIN REGION
(Utah, southern Idaho, western Wyoming, Nevada, a small part of California)

National Forest	*When established*	*Headquarters*
Ashley	July 1, 1908	Vernal, Utah
Boise (includes original Payette National Forest, established June 3, 1905)	July 1, 1908	Boise, Idaho
Bridger (formerly Wyoming National Forest)	July 1, 1908	Kemmerer, Wyo.
Cache	May 26, 1908	Logan, Utah
Caribou	Jan. 15, 1907	Pocatello, Idaho
Challis	July 1, 1908	Challis, Idaho
Dixie	Sept. 25, 1905	Cedar City, Utah
Fishlake	Feb. 10, 1899	Richfield, Utah
Humboldt (includes former Nevada National Forest, established Feb. 10, 1909).	July 2, 1908	Elko, Nev.
Manti-La Sal (includes former La Sal, established Jan. 24, 1906)	May 29, 1903	Price, Utah
Payette (former Weiser National Forest, established May 25, 1905, and Idaho National Forest, established July 1, 1908).	Apr. 1, 1944	McCall, Idaho
Salmon	Nov. 5, 1906	Salmon, Idaho
Sawtooth (includes former Minidoka National Forest, established July 2, 1908).	May 29, 1905	Twin Falls, Idaho
Targhee	July 1, 1908	St. Anthony, Idaho
Teton	Feb. 22, 1897	Jackson, Wyo.
Toiyabe	Mar. 1, 1907	Reno, Nev.
Uinta	Feb. 22, 1897	Provo, Utah
Wasatch (includes former Salt Lake National Forest)	Aug. 16, 1906	Salt Lake City, Utah

REGION 5—CALIFORNIA REGION
(California, western Nevada, a small part of Oregon)

National Forest	*When established*	*Headquarters*
Angeles (San Gabriel Timberland Reserve established Dec. 20, 1892)	July 1, 1908	Pasadena, Calif.
Calaveras Bigtree	May 11, 1954	Sonora, Calif.
Cleveland	July 2, 1908	San Diego, Calif.
Eldorado	July 28, 1910	Placerville, Calif.
Inyo	May 25, 1907	Bishop, Calif.
Klamath	May 6, 1905	Yreka, Calif.
Lassen	June 2, 1905	Susanville, Calif.
Los Padres (formerly Santa Barbara National Forest)	Dec. 22, 1903	Santa Barbara, Calif.
Mendocino (formerly California National Forest)	July 2, 1908	Willows, Calif.
Modoc	Nov. 29, 1904	Alturas, Calif.
Plumas	Mar. 27, 1905	Quincy, Calif.
San Bernardino	Feb. 25, 1893	San Bernardino, Calif.
Sequoia	July 2, 1908	Porterville, Calif.
Shasta	Oct. 3, 1905	Redding, Calif.
Sierra	Feb. 14, 1893	Fresno, Calif.

Six Rivers	June 3, 1947	Eureka, Calif.
Stanislaus	Feb. 22, 1897	Sonora, Calif.
Tahoe	Apr. 13, 1899	Nevada City, Calif.
Trinity	Apr. 26, 1905	Redding, Calif.

REGION 6—PACIFIC NORTHWEST REGION
(Oregon, Washington, a small part of California)

National Forest	*When established*	*Headquarters*
Gifford Pinchot (formerly Columbia National Forest)	July 1, 1908	Vancouver, Wash.
Colville	Mar. 1, 1907	Colville, Wash.
Deschutes	July 1, 1908	Bend, Oreg.
Fremont	Sept. 17, 1906	Lakeview, Oreg.
Malheur	July 1, 1908	John Day, Oreg.
Mount Baker (formerly Washington National Forest)	Feb. 22, 1897	Bellingham, Wash.
Mount Hood (formerly Oregon National Forest)	June 30, 1911	Portland, Oreg.
Ochoco	June 30, 1911	Prineville, Oreg.
Okanogan (formerly Chelan National Forest)	July 1, 1908	Okanogan, Wash.
Olympic	Feb. 22, 1908	Olympia, Wash.
Rogue River (formerly Crater National Forest)	July 1, 1908	Medford, Oreg.
Siskiyou	Oct. 5, 1906	Grants Pass, Oreg.
Siuslaw	July 1, 1908	Corvallis, Oreg.
Snoqualmie	July 1, 1908	Seattle, Wash.
Umatilla	June 13, 1908	Pendleton, Oreg.
Umpqua	Mar. 2, 1907	Roseburg, Oreg.
Wallowa	May 6, 1905	Baker, Oreg.
Wenatchee	July 1, 1908	Wenatchee, Wash.
Whitman	July 1, 1908	Baker, Oreg.
Willamette (includes former Santiam and Cascade National Forests)	Apr. 6, 1933	Eugene, Oreg.
Winema	July 1, 1961	Klamath Falls, Oreg.

REGION 8—SOUTHERN REGION
(Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Oklahoma, Tennessee, Texas)

National Forest	*When established*	*Headquarters*
Angelina	Oct. 13, 1936	Lufkin, Tex.
Apalachicola	May 13, 1936	Tallahassee, Fla.
Bienville	June 15, 1936	Jackson, Miss.
William B. Bankhead (formerly Black Warrior National Forest)	Jan. 15, 1918	Montgomery, Ala.
Chattahoochee	July 9, 1936	Gainesville, Ga.
Cherokee	July 14, 1920	Cleveland, Tenn.
Conecuh	July 17, 1936	Montgomery, Ala.
Croatan	July 29, 1936	Asheville, N.C.
Daniel Boone (formerly Cumberland National Forest)	Feb. 23, 1937	Winchester, Ky.
Davy Crockett	Oct. 13, 1936	Lufkin, Tex.
Delta	Jan. 12, 1961	Jackson, Miss.
De Soto	June 17, 1936	Jackson, Miss.
Francis Marion	July 10, 1936	Columbia, S.C.
George Washington (formerly Shenandoah National Forest)	May 16, 1918	Harrisonburg, Va.
Holly Springs	June 15, 1936	Jackson, Miss.
Homochitto	July 20, 1936	Jackson, Miss.
Jefferson	Apr. 21, 1936	Roanoke, Va.
Kisatchie	June 10, 1930	Alexandria, La.
Nantahala	Jan. 29, 1920	Asheville, N.C.
Ocala	Nov. 24, 1908	Tallahassee, Fla.
Oconee	Nov. 27, 1959	Gainesville, Ga.
Osceola	July 10, 1931	Tallahassee, Fla.
Ouachita (formerly Arkansas National Forest)	Dec. 18, 1907	Hot Springs, Ark.
Ozark	Mar. 6, 1908	Russellville, Ark.
Pisgah	Oct. 17, 1916	Asheville, N.C.
Sabine	Oct. 13, 1936	Lufkin, Tex.

St. Francis	Nov. 8, 1960	Russellville, Ark.
Sam Houston	Oct. 13, 1936	Lufkin, Tex.
Sumter	July 13, 1936	Columbia, S.C.
Talladega	July 17, 1936	Montgomery, Ala.
Tombigbee	Nov. 27, 1959	Jackson, Miss.
Tuskegee	Nov. 27, 1959	Montgomery, Ala.

REGION 9—EASTERN REGION

(Connecticut, Delaware, Illinois, Iowa, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin.)

National Forest	*When established*	*Headquarters*
Allegheny	Sept. 24, 1923	Warren, Pa.
Chequamegon	Nov. 13, 1933	Park Falls, Wis.
Chippewa (formerly Minnesota National Forest)	May 23, 1908	Cass Lake, Minn.
Clark	Sept. 11, 1939	Rolla, Mo.
Green Mountain	Apr. 25, 1932	Rutland, Vt.
Hiawatha (includes former Marquette National Forest, established Feb. 10, 1909).	Jan. 16, 1931	Escanaba, Mich.
Hoosier	Oct. 1, 1951	Bedford, Ind.
Huron (formerly Michigan National Forest)	Feb. 11, 1909	Cadillac, Mich.
Manistee	Oct. 25, 1938	Cadillac, Mich.
Mark Twain	Sept. 11, 1939	Springfield, Mo.
Monongahela	Apr. 28, 1920	Elkins, W. Va.
Nicolet	Mar. 2, 1933	Rhinelander, Wis.
Ottawa	Jan. 27, 1931	Ironwood, Mich.
Shawnee	Sept. 6, 1939	Harrisburg, Ill.
Superior	Feb. 13, 1909	Duluth, Minn.
Wayne (Ohio)	Oct. 1, 1951	Bedford, Ind.
White Mountain	May 16, 1918	Laconia, N.H.

REGION 10—ALASKA REGION

National Forest	*When established*	*Headquarters*
Chugach	July 23, 1907	Anchorage, Alaska
Tongass	Sept. 10, 1907	
Stikine Area		Petersburg, Alaska
Chatham Area		Sitka, Alaska
Ketchikan Area		Ketchikan, Alaska

Puerto Rico

National Forest	*When established*	*Headquarters*
Caribbean (formerly Luquillo National Forest)	Jan. 17, 1903	Rio Piedras, P.R.

FOREST AND RANGE EXPERIMENT STATIONS

Intermountain, Ogden, Utah
North Central, St. Paul, Minn.
Northeastern, Upper Darby, Pa.
Pacific Northwest, Portland, Oreg.
Pacific Southwest, Berkeley, Calif.
Rocky Mountain, Fort Collins, Colo.
Southeastern, Asheville, N.C.
Southern, New Orleans, La.

Research in wood utilization is done at the Forest Products Laboratory, Madison, Wis.

Research in tropical forestry is done at the Institute of Tropical Forestry, Rio Piedras, Puerto Rico.

Research in northern forestry is done at the Institute of Northern Forestry, Fairbanks, Alaska.

Research in forestry of islands of the Pacific Ocean is done at the Institute of Pacific Islands Forestry, Honolulu, Hawaii.

STATE AND PRIVATE FORESTRY

Northeastern Area, Upper Darby, Pa.
Southeastern Area, Atlanta, Ga.

Early U.S. Forestry Leaders and Chiefs of the Forest Service

Franklin B. Hough (1822–85). First Federal official assigned by the Commissioner of Agriculture under a mandate from Congress to gather data and present reports on forestry in the United States (1876–83). A physician who served in the Civil War, he was superintendent of the New York State census and had a keen interest in nature, history, forest conservation, and statistics, and was a prolific writer of letters, speeches, and articles. His reports to Congress, based on his extensive trips around the country, had far-reaching effects in building public sentiment for forest conservation. His office was made a Division of Forestry in 1881.

Carl Schurz (1829–1906). German statesman, one of the earliest and most effective advocates of forestry in the United States. He served as Secretary of the Interior (1877–81), and organized a force of special timber agents to conduct a strong drive against widespread raiding and destruction of forests on public lands. Schurz tried hard to strengthen the Interior Department's control over disposition and management of public timber and timberlands. Although his efforts were not very successful at the time, he contributed greatly to changing the public attitude toward forest conservation.

Nathaniel H. Egleston (1822–1912). Became Chief of the Division of Forestry in U.S. Department of Agriculture after Mr. Hough (1883–86). A Congregational minister and teacher, he helped organize the American Forestry Association in 1882.

Bernhard E. Fernow (1851–1923). First professional forester in the United States. He was Chairman, American Forestry Association (1884–98), and Chief, USDA Division of Forestry (1886–98). He delivered the first course of forestry lectures in the United States, in 1894 at Massachusetts Agricultural College, and was Director and Dean of the first 4-year professional forestry school, at Cornell University, starting in 1898. Like Carl Schurz, he was a native of Germany. The two were most influential in passage of the Forest Reserve Act in 1891 which established the first forest reserves (later called National Forests).

Filibert Roth (1858–1925). One of the pioneers in forestry teaching in America, he was an instructor under Mr. Fernow at Cornell (1898–1901), and started the Forestry Department at the University of Michigan in 1903, which he headed for 20 years until his retirement. He was the first forester to have charge of the Federal forest reserves, serving as Chief of the Forest Reserve Division in the old General Land Office (now the Bureau of Land Management), U.S. Department of the Interior, from 1901–03. Like Fernow and Schurz, he was a native of Germany. After 8 years of study at the University of Michigan he became a timber expert for the U.S. Department of Agriculture (1893–98). During this period and while Chief of the Forest Reserve Division, Mr. Roth wrote several booklets and bulletins on forestry and wood technology, including the first manual on managing the reserves.

Gifford Pinchot (1865–1946). One of America's most renowned conservation leaders. Chief, USDA Division of Forestry (1898–1901); Chief, USDA Bureau of Forestry (1901–05); first Chief, USDA Forest Service (1905–10). He was an organizer and first president of the Society of American Foresters (1900). All his life he was an outspoken crusader for Federal protection of forest lands. Mr. Pinchot was influential in persuading Congress to transfer the vast forest reserves from the Department of the Interior to the Department of Agriculture.

This was done Feb. 1, 1905, and the Bureau of Forestry was changed to the Forest Service on July 1 of that year. The forest reserves were renamed the National Forests in 1907. During his period in office, the Forest Service and the Forests grew spectacularly. In 1905 the forest reserves numbered 60 units covering 56 million acres; in 1910 there were 150 National Forests covering 172 million acres. The pattern of effective organization and management was set during Pinchot's administration, and "conservation" of natural resources in the broad sense of wise use became a widely known concept and an accepted national goal.

Henry S. Graves (1871–1951). Second Chief of the Forest Service (1910–20). In 1900 he was an organizer and the first vice-president of the Society of American Foresters, and in the same year he headed the newly established School of Forestry at Yale University, where he remained as Dean until called to head the Forest Service. During his tenure as Chief, the Forest Products Laboratory was established at

Madison, Wis.; the Weeks Law was enacted (1911) allowing Federal purchase of forest lands necessary to protect the flow of navigable streams and providing for Federal-State cooperation in forest fire protection; and the Research Branch of the Forest Service was organized.

William B. Greeley (1879–1955). During his administration (1920–28) the Clarke-McNary Act became law, extending Federal authority to purchase forest lands necessary for timber production, and authorizing cooperative agreements with the various States to help protect State and private forests from wildfire. National Forest administration was further strengthened.

Robert Y. Stuart (1883–1933). While he was Chief of the Forest Service (1928–33), the McSweeney–McNary Act to promote forest research, and the Knutson-Vandenberg Act to expand tree planting on National Forests became law. The Civilian Conservation Corps (CCC) began its valuable work in forestry and conservation, enrolling 2 million young unemployed men in the 9 years of its existence.

Ferdinand A. Silcox (1882–1939). While he was Chief (1933–39), the Forest Service made a study of western range use, recommending methods for improvement, and surveyed forested watersheds for flood control through restoration and proper management of forests. Under the Prairie States Forestry Project, 217 million acres were planted by 33,000 plains farmers. The CCC grew to full size. Mr. Silcox renewed the fight Mr. Pinchot had started to bring about public regulation of timber cutting on private forest lands.

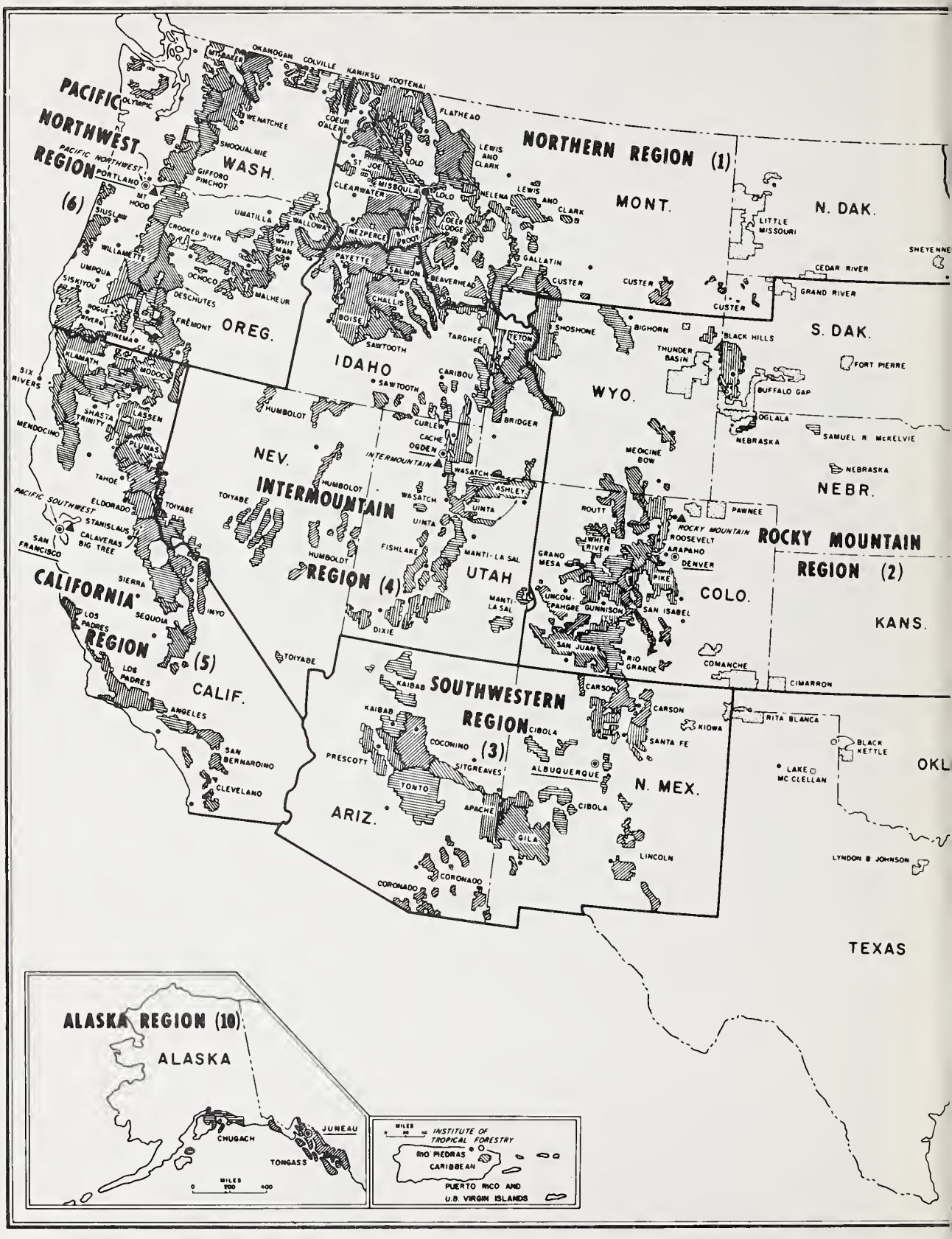
Earle H. Clapp (1887–1970). During his tenure as "Acting Chief" (1939–43), the Forest Service helped to mobilize the Nation's forest resources behind the war effort (World War II). Cutting of National Forest timber was stepped up, including a special project in Alaska to provide spruce for military aircraft; extensive surveys were made of production, supplies, and needs for wood products; special studies and tests were made for the armed forces, and forest lookout stations were manned along both East and West Coasts as part of the year-round aircraft warning system.

Lyle F. Watts (1890–1962). During his period as Chief (1943–52) the Forest Service wound up its expanded wartime activities and undertook a planned effort to shift administration of the National Forests from a custodial to a managed-property basis. There was also considerable expansion of the Federal role of cooperator with the various States and with private industry—in the fields of forest fire protection, pest control, tree planting, woodland management and harvesting, wood-product marketing and processing, grazing, etc., through various acts and amendments, including the Cooperative Forest Management Act of 1950.

Richard E. McArdle (1899–). As 8th Chief (1952–62) he helped set up a Forest Research Advisory Committee. The "Timber Resource Review," a comprehensive report on timber resources in the United States, was published. The landmark Multiple Use-Sustained Yield Act was passed by Congress, confirming long-established policy for broad development and administration of National Forests in the public interest. The Forest Service was assigned management of 7 million acres of western plains lands acquired by the Federal Government in the Depression years. The Forest Service organized these lands as National Grasslands.

Edward P. Cliff (1909–). While serving as the 9th Chief (1962–1972), he devoted much time to promoting better understanding of public forest management problems with stockmen, timbermen, and the general public. Recreation became the major use in many National Forest areas, and facilities were expanded to take care of the greatly increased public demand. The Forest Service undertook a role in the Job Corps to operate nearly 50 rurally located camps which gave thousands of deprived youth a new start and accomplished much important conservation work throughout the country. The Forest Service actively participated in the nationwide Natural Beauty campaign, Rural Areas Development, and the War on Poverty. With enactment of the National Wilderness Preservation System law in 1964, 9.1 million acres of National Forest areas previously designated as "Wild" or "Wilderness" became the core of the new System. Additional National Forest acreage has been added to the System since then.

John R. McGuire (1916–). As present Chief of the Forest Service, he has strengthened the Forest Service's relationship with the Senate and House in dealings concerning the growing national environmental issues. Early in his tenure the study, selection, and management of Wilderness Areas were expanded, and in this and all issues of major impact public comment and public involvement were invited in an unprecedented degree. This included public review and comment on the Forest Service's "Environmental Program for the Future," and The Forest and Rangeland Renewable Resources Planning Act. Under Mr. McGuire's guidance the agency made organizational changes designed to strengthen the roles of State and Private Forestry and Research, particularly as these functions help implement the new forestry incentives program.


PACIFIC NORTHWEST REGION (6)
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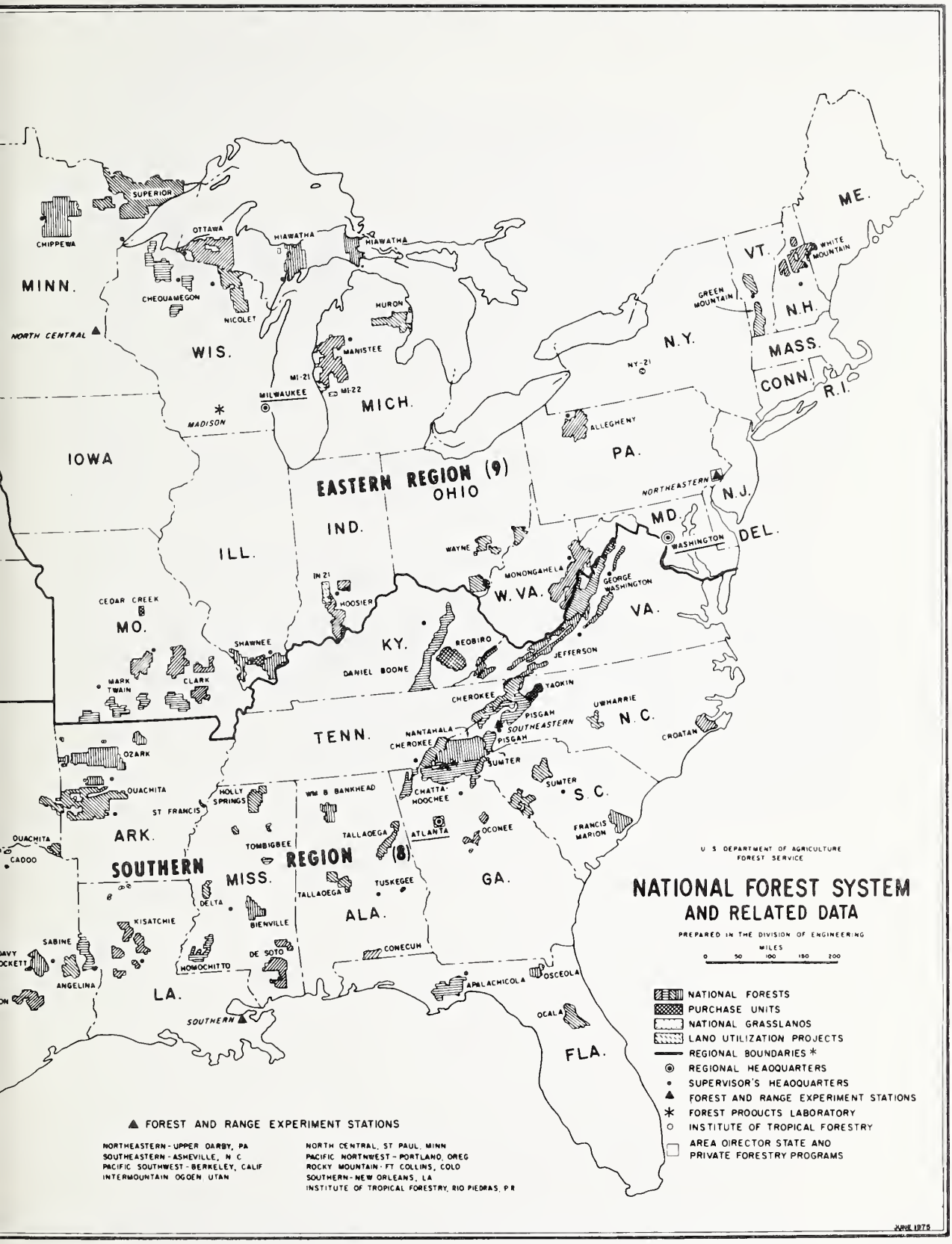
INSTITUTE OF TROPICAL FORESTRY
RIO PIEDRAS
CARIBBEAN
PUERTO RICO AND U.S. VIRGIN ISLANDS


U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
NATIONAL FOREST SYSTEM
AND RELATED DATA
PREPARED IN THE DIVISION OF ENGINEERING
MILES
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NATIONAL FORESTS
PURCHASE UNITS
NATIONAL GRASSLANDS
LAND UTILIZATION PROJECTS
REGIONAL BOUNDARIES *
REGIONAL HEADQUARTERS
SUPERVISOR'S HEADQUARTERS
FOREST AND RANGE EXPERIMENT STATIONS
FOREST PRODUCTS LABORATORY
INSTITUTE OF TROPICAL FORESTRY
AREA DIRECTOR STATE AND PRIVATE FORESTRY PROGRAMS
FOREST AND RANGE EXPERIMENT STATIONS
NORTHEASTERN - UPPER DARBY, PA
SOUTHEASTERN - ASHEVILLE, N C
PACIFIC SOUTHWEST - BERKELEY, CALIF
INTERMOUNTAIN OGDEN UTAH
NORTH CENTRAL, ST PAUL, MINN
PACIFIC NORTHWEST - PORTLAND, OREG
ROCKY MOUNTAIN - FT COLLINS, COLO
SOUTHERN - NEW ORLEANS, LA
INSTITUTE OF TROPICAL FORESTRY, RIO PIEDRAS, P R
JUNE 1975
EASTERN REGION (9)
SOUTHERN REGION (8)
MINN.
WIS.
MICH.
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NORTH CENTRAL
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OTTAWA
HIAWATHA
CHEQUAMEGON
NICOLET
MANISTEE
MURON
MI-21
MI-22
MILWAUKEE
MADISON
ALLEGHENY
NY-21
GREEN MOUNTAIN
WHITE MOUNTAIN
WASHINGTON
WAYNE
MONONGAHELA
GEORGE WASHINGTON
IN-21
HOOSIER
CEDAR CREEK
SHAWNEE
REDBIRD
JEFFERSON
DANIEL BOONE
MARK TWAIN
CLARK
CHEROKEE
YADKIN
UWHARRIE
PISGAH
NANTAHALA
CROATAN
OZARK
OUACHITA
ST FRANCIS
HOLLY SPRINGS
WM B BANKHEAD
CHATTA-HOOCHEE
SUMTER
FRANCIS MARION
TALLADEGA
ATLANTA
OCONEE
TOMBIGBEE
TUSKEGEE
CADDO
DELTA
BIENVILLE
KISATCHIE
SABINE
ANGELINA
DE SOTO
HOMOCHITTO
CONECUH
APALACHICOLA
OSCEOLA
OCALA

ABOUT THE FOREST SERVICE

As our Nation grows, people expect and need more from their forests—more wood; more water, fish and wildlife; more recreation and natural beauty; more special forest products and forage. The Forest Service of the U.S. Department of Agriculture helps to fulfill these expectations and needs through three major activities.

- Conducting forest and range research at over 75 locations ranging from Puerto Rico to Alaska to Hawaii.
- Participating with all State forestry agencies in cooperative programs to protect, improve, and wisely use our Country's 395 million acres of State, local, and private forest lands.
- Managing and protecting the 187-million acre National Forest System.

The Forest Service does this by encouraging use of the new knowledge that research scientists develop; by setting an example in managing, under sustained yield, the National Forests and Grasslands for multiple use purposes; and by cooperating with all States and with private citizens in their efforts to achieve better management, protection, and use of forest resources.

For more than 70 years, the Forest Service has been serving the Nation as a leading natural resource conservation agency.

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AMERICAN REVOLUTION BICENTENNIAL

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