

# REPORT OF THE FORESTER

UNITED STATES DEPARTMENT OF AGRICULTURE,  
FOREST SERVICE,  
Washington, D. C., October 13, 1924.

SIR: I have the honor to transmit herewith a report of the work in the Forest Service for the fiscal year ended June 30, 1924.

Respectfully,

WILLIAM B. GREELEY,  
*Forester.*

HON. HENRY C. WALLACE,  
*Secretary of Agriculture.*

## NATIONAL FOREST POLICY

The report for last year sketched the broad outlines of the forest problem of the United States, in its twofold bearing upon timber supply and land use. The progress which the country has made in forestry through commercial channels as well as State and Federal activities was briefly described. The year just closed has witnessed further gains in public interest and support, in reforestation as a business undertaking by landowners, and in the growing perception of the value of forestry as a part of diversified agriculture.

As an example of many forces that are in motion, a recent development in the naval-stores industry of the Southern States is significant. Conducted along the old lines of tapping virgin timber for three or four years before it is felled or the equally temporary and more destructive exploitation of young timber, this important forest industry has steadily approached the vanishing point. A realization of this truth by its leaders led to the selection of eight naval-stores men who were designated by the Secretary of Agriculture as a commission to visit southwestern Europe for a study of the systems of forest management employed in its production of turpentine and rosin.

The report made by this commission emphasizes the merits of the forest practice in southern France, which maintains a continuous production of resinous woods and permits the almost continuous extraction of naval

stores without seriously damaging the growth of the timber or decreasing its value for lumber. The report points out the necessity of adopting the basic principle of this system—continuous timber crops and conservative methods of turpentine—in the southern portion of the United States in order to place its naval-stores industry upon a permanent footing. It will unquestionably have a marked influence upon the future handling of our southern pine lands.

The outstanding event of the year in national forestry was the enactment of the Clarke-McNary law on June 7, 1924, which takes its place with the Weeks Act of 1911 and the earlier legislation authorizing the creation of forest reserves from the public domain as a milestone of progress. For many years the efforts of the Federal Government toward the goal of forest conservation dealt largely with the timberlands in the public domain and the subsequent extension of Federal ownership to the areas where it was urgently needed in the Eastern States. To establish the national-forest enterprise as a practical and permanent public undertaking was the great accomplishment in forestry of the first two decades of this century. As a Federal activity it had to precede an attack upon the still larger task of bringing about the growing of timber on the nearly 400,000,000 acres of land not owned by the public but from which probably 80 per cent of our forest products must come in the long run. On the extension of forest

ewes and the earlier date of the lambing. On the Beartooth Forest, in Montana, under shed lambing a permittee saved no less than 600 pairs of twin lambs from a total of 3,200 ewes. It was the owner's opinion that under open range lambing comparatively few of these twins would have been saved.

Such improvements point the road which western stockmen must follow in order to reduce costs of production. They are applicable in beef production as well as in that of wool and lambs. The average calf crop for range herds is entirely too low. On the Cochetopa Forest, in Colorado, one permittee grazing 700 head of cows was securing, under usual range methods, an average annual calf crop of about 57 per cent. By placing his cows in breeding pastures for a comparatively short season the permittee secured an 80 per cent calf crop. The increase afforded a clear profit of over \$7,500, a high return on the necessary investment in pasture lands.

#### NEW GRAZING REGULATIONS

The new grazing regulations which became effective on March 1, 1924, are working efficiently. The issuance of 10-year permits will begin January 1, 1925, and it is believed that generally speaking all needed range reductions and adjustments will have been made by that time, so that this form of permit can be issued without danger of complications. At the close of the first half of the period there will be a new adjustment of ranges, and properly qualified new Class A applications will then be approved. It is believed this form of permit will be of great aid in stabilizing the grazing industry of the national forests.

#### NEW GRAZING FEES

The new range appraisal data for the majority of the forests have been compiled and placed before the stockmen through their associations for review and criticism. There has thus far been very little criticism on their part as to the fairness and correctness of the facts used in working out the new schedule of fees. Early in January, 1924, owing to the depressed condition of the livestock industry throughout the West, the Secretary of Agriculture announced that where the new schedule reduces the present rate, it will be applied in full beginning with the season of 1925, but that no increases in fees will be made prior to the season of 1926. Should there be

a substantial improvement in the business conditions affecting the livestock industry by 1926, the right will be reserved by the Government to put the new schedule of fees into effect on a graduated scale extending over the four years from 1926 to 1929. Under this plan the new fees will not become fully operative until the opening of the grazing season of 1929, thus giving the livestock industry a fair opportunity to recover from the serious condition in which it has been for the last three years.

#### RECREATION AND GAME

The number of people visiting the national forests for recreation is estimated each year by the local forest officers. Since no actual census of visitors can be taken, the figures reported are approximations only; but they afford a fairly reliable criterion of the volume of recreation use. The total number of visitors reported last year exceeded 10,500,000. In less than 10 years the number has more than tripled.

Undoubtedly the figures represent a certain degree of duplication, since the same person may visit several forests, or the same forest repeatedly, without deduction for this in the estimate. On the other hand, there are also undoubtedly many transient visitors of whose presence the forest officers do not know. The main point is that recreational use of the forests has assumed almost staggering proportions, and is rapidly increasing. A corresponding administrative responsibility is involved.

The coordination of outdoor recreation with timber production is wholly germane to the practice of forestry, and is an essential part of any sound plan of national forest administration. To provide properly for recreational use of the national forests will, however, require substantial expenditures. Otherwise intensive use of the more attractive or accessible areas will create serious hazards to public health and property. Camping spots and places of general resort must be suitably prepared for safe occupancy. Pure water supplies; toilets; fireplaces; occasionally tables and benches; less frequently, simple shelters from the elements, or fences to exclude range stock, are in general the primary requirements. Lessened fire hazard, sanitation, and reasonable provision for the comfort of visitors constitute the reasons for these improvements.

For the average camp ground with a daily capacity of 50 people the cost of installing such simple facilities averages about \$200. To provide at this rate for the 1,500 camp grounds now in common use within the forests would require \$300,000. Progress toward the installation of such a system should be much more rapid than it has been in the past.

Some indirect costs are entailed by the use of the forests for outdoor recreation. These include more intensive provision for fire control and certain restrictions upon grazing, timber cutting, and other revenue-yielding enterprises. Progress is being made in the formulation of plans to coordinate recreation and other forms of use with a minimum of loss and special administration. Net public benefit is the governing principle. Concurrently, the revenue-yielding recreation activities are mounting steadily in volume and receipts, thus largely offsetting the costs.

Improvements constructed for other purposes lead to larger recreation use. Each new road or extension of an old road, each stretch of trail built, though primarily for fire fighting purposes, each new fire lookout perched upon some outstanding peak, means more visitors. Community use also is rapidly increasing. Towns and cities within reasonable distance seek spots upon which to locate camps and recreational areas for their citizens. For example, in Arizona two copper mining communities have undertaken the development of special areas in a thorough-going manner, the companies paying the bulk of the cost. Roads and trails, mostly of the best permanent type of construction, leading to the areas have been built. Swimming pools, tennis courts, golf grounds, and other like improvements have been placed on them by the two communities. Several of the mining companies have secured grounds upon which to construct summer cottages, to be occupied by their employees at a low rental.

The importance of the 15 national monuments located within national forests has not been adequately recognized. These monuments have been created to preserve permanently to the American people rare material or historic treasures; such as the herds of Roosevelt elk in the Mount Olympus Monument; the great caverns of the Jewel Cave, Leman Caves, Oregon Caves, and Timpanogas Caves; unique examples of earlier modes of life, such as those afforded by the Bandler,

Gila Cliff Dwellings, Old Kasaan, Alaska, Tonto, Walnut Canyon, and Wheeler Monuments; unusual geological formations, such as those found within the Bryce Canyon Monument with its delicate beauty of rock erosion, the Devil's Post Pile with its towering basaltic pillars, and the most newly created, the Chiricahua, a fine example of rhyolitic erosion. To these may be added the Big Hole Battle Field, which, though nominally under the administration of the War Department, is taken care of by the Forest Service. Unfortunately the lack of appropriations has made it impossible to give these important areas much more than incidental administration, or to construct upon them the improvements and facilities essential to their full use and enjoyment by the public. While acts of vandalism are not frequent, the monuments should be absolutely safeguarded against damage by any cause.

In connection with the use of the national forests for recreation, two conferences call for mention. One was the First National Conference on Outdoor Recreation, which met in Washington at the call of the President of the United States on May 22, 23, and 24, 1924. The other was the National Conference on State Parks, which met immediately afterwards at Gettysburg. These gatherings were participated in by over 400 men and women who not only are personal leaders and authorities on subjects relating to public welfare but also represent almost 200 national and State organizations with fields of service embracing all sections of the country and memberships aggregating millions of people. The conclusions reached indubitably reflect the needs and sentiments of a large part of the citizens of the country.

In these gatherings recognition was unanimous of the growing dependence of the people of the United States upon the mountain and forested lands and waterways of the country for wholesome outdoor play, and emphasis was laid upon the necessity for making public lands as generally available for this purpose as possible. Steps were taken by which the agencies participating in the conferences may hereafter cooperate more fully with the Federal Government in developing the use of the national parks, forests, and other public lands so as to best meet our recreational requirements. The creation of this organized means for public participation in the adequate development of the national forests as centers

of outdoor recreation is a great gain in national forest administration.

To national forest visitors the presence of fish in the streams and game in the hills lends an added attraction. Systematic stream stocking, with law enforcement, may be made to keep up a fair supply of fish. The perpetuation of game animals and birds, however, presents quite another problem. Hatcheries for game birds and artificial breeding grounds for game animals would entail at present a prohibitive expense. Dependence must be had upon keeping suitable and sufficient areas closed to hunting, and wherever necessary to grazing, so that refuges, natural breeding grounds, and food supply may be assured. From the protected areas the game will usually overflow into the surrounding territory.

The annual census of game animals in the several forests continues to improve as field experience in estimating is gained. At the same time information is gathered on the habits of game species and the effect of the game laws, bag limits, grazing of domestic stock, predatory animals, and similar matters. The figures for the calendar year 1923 show increases of deer in Arizona, Florida, Idaho, Montana, New Mexico, and Washington, which are believed to be due partly to a more accurate estimate.

The total for all national forests is 511,000 deer, 49,000 elk, 7,900 moose, 18,000 mountain goats, and 13,000 mountain sheep. In general the elk and deer are probably increasing in numbers, with moose, goats, and sheep holding their own. California still stands first in the number of deer with over 187,000 in the national forests of that State. Oregon comes second, with 52,000. Wyoming, as heretofore, has the greatest number of elk, 15,000. Washington comes second with 8,368, this herd being the Roosevelt elk, an animal somewhat different from the Yellowstone species.

Excluding Alaska, Idaho with 3,400 goats and Colorado with 5,600 mountain sheep are at the head of the list for those animals. Colorado's splendid record in protecting her mountain sheep proves what can be done toward preserving any species of wild game if action is taken in time and real protection is afforded. Not all the deer are in the national forests of the West. In New Hampshire there are over 10,000 head, in Minnesota over 3,000, and in Florida over 1,200. Only game animals having their prin-

cipal habitat within the national forests are included in these estimates.

Wild life is recognized as one of the major resources of the national forests. Its wise use and perpetuation are sought in accordance with the same fundamental principles which control the policies dealing with timber or forage. On forests having particularly valuable wild life resources, like the Teton in western Wyoming, which contains 8,900 elk and 1,200 moose, adequate provision for wild life should be one of the foremost objects of administration and other uses or developments subordinated to the attainment of this object.

As advocated in the resolutions adopted by the National Conference on Outdoor Recreation, the field personnel of the Forest Service cooperates with the game departments of the States in which national forests are located in the enforcement of the State game and fishing code, in the creation and protection of State game preserves, and in building up through study and observation the technical information needed for changes in State laws or other developments designed to promote the welfare of wild life. Furthermore, as the owner of the land involved and from the standpoint of the national importance of wild life conservation, the Federal Government should be prepared to supplement the activities of the State where that may be in harmony with the common program. A notable example of such measures is the winter refuge and feeding ground for the Jackson Hole elk herd, which is maintained by the Biological Survey.

The creation of Federal game preserves in national forests, with the concurrence of the State, as has been done recently in North Carolina, Georgia, and Tennessee, is another means whereby the National Government may wisely supplement State activities where local conditions lend themselves to the administration of game by the Forest Service. A comprehensive statute establishing a policy for this development and permitting the creation of Federal game preserves in national forests by Executive action, would be a very desirable step. The national forests contain a large portion of the natural habitat, in some cases the last natural refuge, of a number of America's most valuable and distinctive game animals. And with a permanent field organization now protecting and administering these areas, there is every reason for

adding to their public utility in this very important phase of conservation.

A special problem has developed on the Grand Canyon National game preserve, in northern Arizona, where a large herd of mule deer has outgrown its food supply. The area is known as the Kaibab plateau, which forms an isolated tract of well-timbered country lying immediately north of the Grand Canyon and surrounded on the other sides by a semidesert region. The desert—waterless, treeless, and lacking generally in the forage cover preferred by deer—prevents their migrating to other parts of the region, while the canyon stops their movement southward.

Under 18 years of protection the deer have increased to a number estimated at not less than 30,000, with an annual fawn crop of about 6,000. The area has become so seriously overgrazed that wholesale losses from starvation are imminent. The Forest Service has for several years recognized the approaching danger and to increase the food supply available for the deer has reduced the number of cattle permitted to graze on the same range until only about 2,500 are left. These cattle, together with about 3,500 sheep that graze the northern tip of the plateau, are owned by local settlers who could not maintain themselves and their farms if denied their present grazing privileges.

The steady increase in the deer has more than counterbalanced the reduced grazing by cattle, and the lack of forage has become yearly more noticeable. If all domestic animals were removed from the range, the crisis would be merely postponed until the deer through further increase again exceeded the carrying capacity of the area. A winter of deep snows following a dry summer like that just experienced can hardly fail to cause heavy losses from starvation.

The Forest Service and the Biological Survey have studied this situation for several years from every angle. Reduction of the deer herd is inevitable. The only choice lies between allowing this to take place through starvation and disease or applying artificial measures to maintain a balance between deer and food supply. It would seem that there could be no question as to which is preferable. The first course would mean not merely recurring famine crises by which large numbers of deer would periodically suffer lingering death, but also a

progressive reduction in the carrying capacity of the range. The second course would mean in the long run a healthier and more vigorous deer herd.

In various quarters, however, a considerable sentiment against corrective measures has found expression. To obtain an impartial outside review of the facts and an independent judgment as to the soundness of the conclusions, the Secretary of Agriculture created last February an advisory committee representing wild-life and other conservation organizations, including one representative of the western range livestock industry. The committee, all men of national reputation, themselves made a careful examination of the area and in addition held a public hearing. Their findings were confirmatory in all particulars of the facts sets forth above. With regard to the number of deer on the area, the committee believes that the department estimates are conservative. It concurred in the judgment of the Forest Service that the stock of local settlers should not be excluded from the forest, as "the limited population of southern Utah is dependent largely upon the stock for a livelihood." The report of the committee stated further:

Whatever the cause, there can be no question that the Grand Canyon national game preserve is now both overgrazed and overbrowsed. Sheep are now grazed only in a small part of the northern edge of the forest and the numbers of the cattle having been greatly reduced it is clear that the deer are the chief factors in this decrease of the food supply.

In the regions covered during the first five days in the game preserve almost all the deer observed were in very poor condition. At that time of the year, when the deer should be in the pink of condition, all, including even most of the large bucks, were extremely thin. . . . In considering the condition of the deer it must not be overlooked that this season has been one of severe drought, which would naturally affect the food supply. However, this drought was in no large way responsible for the vast scarcity of food over most of the preserve.

As an immediate remedy the committee believes that "no reduction of less than 50 per cent of the present herd would be effective," and therefore recommends the removal of half the herd as quickly as possible, by the following methods:

(1) The shipment of live deer to other parts of the United States for stocking other areas.

(2) If this does not secure the recommended reduction, the opening of the preserve to regulated hunting.

(3) As a last resort, destruction of deer through killing by Government officers, the meat and hides to be used to the best advantage possible considering the location, over 165 miles from the nearest railroad.

The first of these measures has been inaugurated through public announcement that live deer will be given all applicants who will pay crating and transportation charges. If this measure proves inadequate, regulated hunting will be permitted.

The committee which conducted the investigation consisted of John B. Burnham, of the American Game Protective Association; Heyward Cutting, of the Boone and Crockett Club; T. Gilbert Pearson, representing the Audubon Society and the National Parks Association; and T. W. Tomlinson, secretary of the American National Livestock Association, to all of whom are due grateful acknowledgments for valuable and disinterested service rendered at personal sacrifice. Their investigation was important not only because the handling of the Kaibab deer is in itself a question of general interest but because it presents in concrete form a vital phase of wild life management certain to arise elsewhere as time goes on.

#### WATER POWER

Of 87 applications for water-power permits or licenses received during the past year by the Federal Power Commission, 45, or about 52 per cent, involved the use of national forest land. In the four years of operation under the Federal water power act, 271 such applications have been filed, of which almost half were made in the first year. The desire for power development in California still exceeds that in any other national-forest State.

Engineering investigations and reports were requested by the Federal Power Commission on 28 applications and administrative reports in 24 cases. These are respectively 5 less and 4 more than during the preceding year. The power commission also requested the Forest Service to supervise and inspect the operation of 33 permittees or licensees under the Federal water power act, this with earlier requests making a total of 111 cases at the end of the year. In addition, the Forest Service is supervising stream gaging operations for 16 cases in Alaska.

Under the provisions of the Federal water power act, a permittee under an

earlier act may apply to the Federal Power Commission for a license or permit. When the law was enacted it was supposed that a large number of such applications would be received. While there have been some—mostly from companies desiring to change the project works or whose projects had not advanced to the construction stage—the expectation of four years ago has not been borne out. The reason for this is not entirely clear. Companies which succeeded in financing development and in starting operation under the insecure tenure of the act of February 15, 1901, seem content with their present permits. A gradual decrease in the number of Department of Agriculture permits will undoubtedly ensue, as a result of the termination of permits and of changes or extensions which can not be granted except by the Federal Power Commission. It now seems, however, that a very large proportion of the present permittees will hold their rights under this department for many years to come.

For proper utilization of the water-power resources of the Nation reliable data are essential, both on developed and especially on undeveloped power resources. The Forest Service now has good though incomplete information on the undeveloped water-power resources of the Tongass Forest. For practically all of the other national forests the knowledge at hand is very inadequate. The applications that are being made to the Federal Power Commission indicate early development of many power sites on the national forests. To secure for the public the greatest benefit from such power development the Forest Service should know the power capacity, location of power sites, cost of development, value, and probable manner of utilization. It should have such information not only for individual streams but for all streams possessing power value. A comprehensive investigation of the national forest power resources is urgently needed. For the most effective use, this investigation should have been made years ago; but since development on forest lands is only well started, it is not too late to gather data that will prevent future mistakes.

The following tabulation contains data concerning water-power permits granted by the Department of Agriculture and in effect on June 30, 1924: