EXPERIMENTAL FORESTS AND RANGES, NATURAL AREAS AND PRIMITIVE AREAS [a]

REGULATION

REG. L-20. The Forester shall determine, define, and permanently record a series of areas on national forest land to be known as experimental forests, sufficient in number and extent adequately to provide for the experimental work necessary as a basis for forest production or forest and range production in each forest region, these areas to be dedicated to and used for research; also where necessary a supplemental series of areas for range investigations to be known as experimental ranges; and a series to be known as natural areas sufficient in umber and extent adequately to illustrate or typify virgin conditions of forest or range growth in each forest or range region, to be retained in a virgin or unmodified condition for purposes of science, research and education; and a series of areas to be known as primitive areas, and within which will be maintained primitive conditions of environment, transportation, habitation, and subsistence, with a view to conserving the value of such areas for purposes of public education and recreation. Within any areas so designated, except for permanent improvements needed in experimental forests and ranges, no occupancy under special-use permit shall be allowed, of the construction of permanent improvements by any public agency be permitted, except as authorized by the Forester of the Secretary.

EXPERIMENTAL FORESTS

Purpose.

The purpose of experimental forests is to make permanently available for silvicultural, range, products, and other related forest research carefully selected areas as fully representative as possible of conditions in important parts of forest regions and large enough to meet present and foreseeable future needs. In essence these areas are field laboratories for intensive investigative work. In the interest of results of the greatest breadth and reliability, of protection, of efficiency, and of the best working conditions for the investigative staff, the work of forest experiment stations will be concentrated as fully as possible on them.

A secondary and incidental but hardly less important purpose is to provide for the demonstration or results, favorable and otherwise, of widely varying silvicultural and other forest practices.

Assured provision for the best possible field laboratories for research is so vital to sound national forest administration and to the development of private forestry that the selection of necessary areas is made a part of Forest Service policy and procedure under mandatory instructions from the Secretary of Agriculture.

Number, Character, and Extent.

The McSweeney-McNary Forest Research Act specifies 12 or 13 forest regions in the United States proper, in each of which a forest experiment station is to be established. So far as can now be foreseen, from 5 to 10 experimental forests will ultimately required in each region, with an average of about 8. The area of each of these forests should range from about 1,000 acres as a minimum to about 5,000 as a maximum, and average about 3,500 acres, exclusive of natural areas. They should be large enough to provide adequately for present and foreseeable future work. They should be small enough to avoid all unnecessary burden of administration. Size should be governed primarily by the complexity of the type and growth rate of trees species. The simpler the type and the higher the growth rate the smaller the area that will be required.

Each experimental forest should be as fully representative as possible of the conditions in important subregions. More specifically this means adequate representation of forest types and sites, of the conditions which underlie types

[a] Amdt. No. 345, effective October, 1930.

and sites, such as soils, climatic variations, altitudinal range, etc., and of the older age classes particularly. Accessibility is an important consideration, for the marketing of forest products to permit intensive silvicultural experimentation, and for ease of access to visitors and to the investigative staff. Accessibility may require both satisfactory automobile roads, and railroads, or drivable streams. Assurance of protection against fire may also be a factor of importance in location because the cumulative investment of large numbers of investigative projects will soon far exceed the intrinsic value of the timber stand itself.

Where it is not possible to find a satisfactory representation of conditions in one area it may be advisable to select two or even three areas within easy working distance of an experimental forest headquarters.

Each experiment station should, wherever possible in the interest of greatest representation of conditions for scientific work, include in addition to the area already specified a natural area of the character provided for below.

Other Considerations.

The selection of experimental forests should be carried forward rapidly enough so that the value for research of the most suitable areas will not be seriously reduced, or destroyed for many years, by timber cutting. It will be far better to select, designate, and hold such forests over a long period of years without any work in them than to lose them altogether for research or to have their value greatly impaired. While the investigative work of the Forest Service is being built up as rapidly as funds and competent men can be obtained, it will probably be a good many years before the resources will be large enough to carry out a large-scale program on the number of experimental forests for each region indicated. Immediate or even future returns to the Treasury in the cutting of timber for profit is not a valid reason for excluding from experimental forests areas needed for that purpose. The use of such areas for research should establish a sound scientific basis for future national forest practice and that on private lands, and hence greatly increase the returns on all forest lands. Similarly, sustained yield should be incidental. The primary purpose in the handling of experimental forests should be to install and maintain the series of investigative projects which seem most necessary as a foundation for good silviculture, etc.

Where suitable areas for experimental forests can not be found on existing national forests, consideration should be given to the acquisition of suitable areas by gift under the provisions of section 5 of the act of March 3, 1925 (43 Stat. 1132), by exchange or as a last resort, by purchase.

Jurisdiction and Administration.

Although experimental forests will be set apart and dedicated to research, they will remain an essential part of the national forests in which they are located. They will have something of the same status as areas for which special uses are granted and special activities authorized. Receipts will be credited to the national forest in which they are situated and reported with those of the national forest.

The responsibility for protection against fire should rest primarily upon the administrative staff of the national forests in which they are situated. Since the investigative work will represent a rapidly increasing investment, especially intensive plans for protection should, as soon as possible, be worked out in cooperation by the administrative force and the staff of the experiment station concerned and put into effect. In this protective scheme the custodial staff of the experiment forest should be made an essential part.

The permanent improvement plan should also be worked out by the administrative and research staffs in cooperation. Ordinarily, where investigative work on any scale is under way, the plan will need to be more intensive than that on the surrounding forest. Supervision of the construction of the improvement projects agreed upon should be worked out by mutual agreement in accordance with the most effective plan under existing conditions.

The director of the experiment station should be held responsible for timber cutting and range or other use of the experimental forest, solely to insure that the

conduct the work in the manner required for the investigative purpose in view, and to establish clear-cut responsibility. This involves such questions as the making and supervision of timber sales, grazing permits, etc., which will ordinarily be small. In some cases it may be desirable to work out arrangements where members of the administrative force will scale timber, etc. Where there is joint range use of national and experimental forest areas the plans of joint use, including the issuance of permits, will be worked out cooperatively by the supervisor and director.

Since the primary purpose of experimental forests and experimental ranges is research and an important incidental use is the demonstration of investigative results, general or promiscuous public use should be restricted as far as practicable, and if this is impossible, should be carefully regulated. Present laws are inadequate to permit whatever exclusion of the public may be desirable, or to prevent the location of mining claims or the establishment of easements under public land laws. Once the required system of experimental forests and ranges has been thoroughly crystallized, however, legislation to safeguard them should be obtainable from Congress.

EXPERIMENTAL RANGES

Experimental forests may in many instances be suitable also for range investigations. Where they can be used for the latter purpose it will help to insure the working out of underlying relationships between forest and range management. Prospective use for both classes of research may make it necessary to select somewhat larger areas than for silvilcultural research alone.

In some cases, however, it will be necessary to select for experimental ranges areas which contain no timber stands. Much the same principles as those already outlined for selection, use, etc., will apply. It may be necessary, however, in some instances to select somewhat large areas. There will not be the same need for setting aside areas much in advance of the time when they are to be used for research.

NATURAL AREAS

Purpose.

Permanently to preserve in an upnmodified condition areas representative of the virgin growth of each forest or range type within each forest region so far as they are represented within the national forests, to the end that its characteristic plant and animal life and soil conditions, the factors influencing its biological complex, shall continue to be available for purposes of science, research, and education.

Number and Extent of Natural Forest Areas.

A sufficient number of natural areas should be established to insure the preservation of virgin areas typical of important forest conditions in the United States and permitting continuity of study to climax types. Probably a dozen such areas will be required in each forest region. If, however, a forestry type is adequately represented in some other permanent form of reservation such as a national park, duplication in a national forest may be unnecessary.

Since undue conflict with industrial or economic needs would threaten the permanence or stability of the natural areas, they should where practicable be located where there is least probability of such conflict and be confined to the minimum area within which their full purpose can be realized; but they should not be so restricted as to minimize their scientific value. The area essential to the maintenance of virgin conditions for any material length of time will vary with the type of forest involved or possibly with climatic and topographic conditions, but under average conditions 1,000 acres would be about the minimum.

Wherever possible a natural area should be established in connection with each experimental forest and in addition to the area required for the latter. Where this is not possible and not natural area is available, it may be highly desirable to add to the experimental forest an area in which the timber is not yet mature, to be maintained without use so that in time it will develop into a natural area. Where suitable natural areas are not already included in national forests, acquisition by other means suggested under "Experimental forests" should be considered.

Number and Extent of Natural Range Areas.

The general principals governing the selection of natural range areas should be the same as those for timber areas. The number needed for each region will probably vary between 10 and 20. Under average conditions 100 acres would be about the minimum which could be depended upon to insure the preservation of virgin conditions. Where possible, natural forest and range areas should be combined in the same tract.

Utilization of Natural Areas.

Within natural areas scientific and educational use will be exclusive. The cutting of timber, and as soon as possible grazing use also, should be prohibited. General or promiscuous public use will be incompatible with the scientific use of the area, and should be restricted as far as practicable; and if this is impossible, carefully regulated. The present laws are inadequate to permit the total exclusion of the public or prevent the location of mining claims or the establishment of easements under public land laws. Once the required system of natural areas has been defined, legislation to safeguard them should be obtainable from Congress.

Scientific Value Dependent Upon Permanency and Stability.

The highest value of natural areas can be maintained only by the total exclusion of all forms of use. Consequently no utilization shall be authorized or changes made in boundaries without the prior approval of the Forester, which will not be granted unless there is certainty that the change will not react adversely upon the plans of the Forest Service or of any related research agency.

Availability of Natural Areas to Other Research Agencies.

While natural areas will be established primarily to meet the needs of the Forest Service, their use by other research or educational agencies for purposes which do not conflict with Forest Service projects shall be allowed under appropriate cooperative agreements approved by the Forester.

PRIMITIVE AREAS

Purpose.

To prevent the unnecessary elimination or impairment of unique natural values, and to conserve, so far as controlling economic considerations will permit, the opportunity to the public to observe the conditions which existed in the pioneer phases of the Nation's development, and to engage in the forms or outdoor recreation characteristic of that period; thus aiding to preserve national traditions, ideals, and characteristics, and promoting a truer understanding of historical phases or national progress.

Number and Extent.

The number of primitive areas to be designated, and the area to be included therein will be determined by the relative public need for this form of land service as against the public need for modern types of transportation, living accommodations, and outdoor recreation, of for the complete and intensive industrial or commercial utilization and development of natural resources. Where doubt exists as to the highest form of service, ordinarily it will be resolved in favor or maintaining primitive conditions.

Utilization Policy.*

The establishment of a primitive area ordinarily will not operate to withdraw timber, forage, or water resources from industrial uses, since the utilization of such resources, if properly regulated, will not be incompatible with the purposes for which the area is designated. Primitive areas are not natural areas under another name. If what is really desired by the withdrawal is to preserve the vegetative cover in an unmodified condition, that lands should be placed under withdrawal as a natural area. In primitive areas, as elsewhere in national forests, the principle of highest use will prevail. This principle is sufficient justification for partial or complete restriction or postponement for a period of years of the utilization of timber, forage, or reservoir sites where such utilization would nullify the value and service of the primitive area ro a degree exceeding the benefits or advantage accruing from such utilization. Where the application of this principle requires a partial or complete restriction of the use of timber, forage, or reservoir sites that fact should be set forth in the plan of management for the area.

Neither will the establishment of a primitive area result in any reduction in the standards of fire prevention warranted by the existing circumstances. Roads, trails, telephone lines, lookout towers, etc., required to give the area adequate protection will be installed as in other similar national forest areas, but with due regard to the preservation of primitive values.

Road or trail construction, other than that required for fire prevention, administration, or forest utilization, will be continued to the minimum. Occupancy under special use permits also will be held to the minimum. The exact nature of the special uses to be allowed within a given area will be specified in the plan of management, but as a general rule no hotels, resorts, permanent commercial camps, summer-home communities, individual summer homes, or commercial enterprises will be authorized within designated primitive areas. The objective of management of such areas will be to maintain primitive conditions of transportation, subsistence, habitation, and environment to the fullest degree compatible with their highest public use, and management plans should be shaped accordingly.

PROCEDURE

Experimental Forests and Ranges.

The regional forester and the director of the experiment station should appoint a joint committee with representatives of both organizations to examine and report upon proposed experimental forests and ranges. Wherever it is desirable, representatives of regional advisory councils or of outside research agencies may be asked to serve on such committees. If areas agreed upon are concurred in by the regional forester and the director of the forest experiment station, joint reports should be submitted to the Forester. In case agreement can not be reached, separate recommendations may be submitted by either. For each such area a report shall be submitted covering: (*a*) The relation of the area to the research work of the region and its needs in connection therewith; (*b*) data corresponding to that required by paragraphs 1, 4, 5, 6, 7, 8, 9, 10, 12, and 13 of pages 52-L and 53-L of the Manual; (*c*) relation of proposed area to the future use of the resources of the adjacent national-forest lands. Upon approval of the report by the Forester the regional forester will cause the approved area to be appropriately recorded in the work plans of the forest or forests in which it is located. Provision should be made for plainly marking the boundaries of the area on the ground. Plans for the management of the area will be prepared by the director of the experiment station sufficiently in advance of the initiation of investigative work on any scale to insure the logical use of the area.

* Amdt. No. 346, effective March 23, 1932.

Natural Areas.

A joint committee, similar to that for experimental forests and ranges, should examine and report upon proposed natural areas. If the areas recommended are concurred in by the regional forester, he should submit a suitable recommendation to the Forest for each such area. For each such area the report should cover the subjects indicated under experimental forests and ranges, and in addition, a plan of management of the area. Upon approval of the report by the Forester, the regional forester will cause the approved area to be appropriately recorded on the work plan of the forest or forests in which it is located, and provide for the suitable designation of the boundaries on the ground; after which its management and use shall conform strictly to the plan of management approved by the Forester. No departures from the plan shall be made except by prior authority from the Forester.

Primitive Areas.

The regional forester shall determine and recommend the areas to be designated as primitive areas. For each such area a report shall be submitted setting forth (*a*) the reasons for the proposed designation; (*b*) data corresponding to that required by paragraphs 1, 4, 5, 6, 7, 8, 9, 10, 12, and 13 of pages 52-L and 53-L of the Manual; and (*c*) a detailed and specified plan for the management of the area which shall show (1) the extent to and conditions under which the timber, forage, or water resources are to be utilized; (2) the permanent improvements which will be constructed by the Forest Service or its cooperators for the proper protection, use, and management of the area, and (3) the character, extent, and location of the special use occupancy to be allowed. Upon approval of the report by the Forester, the regional forester will cause the approved area to be appropriately recorded on the work plans of the forest or forests in which it is located, and provide for the suitable designation of the boundaries on the ground; after which its management and use shall conform strictly to the plan approved by the Forester. No departures from the plan shall be made except by prior authority from the Forester.