THE WORK OF THE CALIFORNIA FOREST AND RANGE EXPERIMENT STATION

STEPHEN N. WYCKOFF

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IN CALIFORNIA'S total land area of 100 million acres, only about 13 million acres are cultivated or are occupied as town and city sites. The remaining 87 million acres are uncultivated. These wild lands, varying from the deserts of southeastern California, with their scanty vegetation, to the dense redwood forests of the northwest part of the state, constitute the field of endeavor of the California Forest and Range Experiment Station. It is the task of the Station to develop, through research, the techniques of use and management that can give to these lands permanent value.

Much of this land, although uncultivated, is used directly in producing wealth. It provides timber, range forage, and water, without which there could be no lumber industry, no range-livestock industry, and no irrigation agriculture, all vital to the economy of California. These industries provide the economic base for a large part of the state, and without them there could be little further growth and development.

Upon the basis of these three types of productivity the work of the Forest Experiment Station is divided into three broad fields, each with many ramifications, namely, forest research, range research, and forest-influences research (this last being the term applied to the study of the relation of vegetation cover and land use to the availability of water).

Through forest research the facts concerning the life of the forest are determined and from the information thus obtained practical methods of management of forest lands and of the timber stands growing on them are devised. Ways are developed to grow a forest, to protect it from such enemies as fire, insects, and disease, to inventory it and determine its rate of growth, and to harvest it by methods which will return a profit to its owners and at the same time prepare the way for the development of a succeeding forest.

In order to indicate the complexity of research in forest management, a brief account of the natural development of a forest may be of value. An even-aged forest has a definite starting point, in some form of complete destruction of the previously occurring forest, such as logging or fire, or frequently both. This establishes an area of forest soil devoid of forest growth. Over a period of several years, seedlings of the forest species indigenous to the region appear. At the end of this initial period of regeneration, forest-tree seedlings may occur at the rate of several thousand per acre. In the softwood forests of the western

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