

CONSERVATION DEVELOPMENTS IN AMERICAN UNIVERSITIES

Conservation of natural resources has become a topic of steadily growing interest in many spheres of American life—among government agencies, book publishers, the public schools, and the general public, to mention only a few. It has become a matter of international concern, as attested by the Inter-American Conference on Conservation of Natural Resources held in Denver in September, 1948 (proceedings published and available), and the United Nations Scientific Conference on Conservation and Utilization of Resources held at Lake Success in August and September, 1949 (published proceedings now being issued). American colleges and universities have long played an important role in encouraging this increasing interest, and have frequently initiated new courses, curricula, and sometimes organizational units concerned with conservation. The recent reorganization and expansion in four major American universities in the conservation field may be of interest as an indication of this trend.

Cornell University in 1948 established a Department of Conservation in which were included its activities in fisheries, wildlife management, and forestry, together with all work in the background sciences of ornithology, mammalogy, ichthyology, and herpetology. While the new department was largely a reorganization of pre-existing activities at the University, it did include sufficient new support to permit the establishment of several new positions, involving teaching and research in wildlife management, oceanography, and fish culture, and extension work in fish and wildlife conservation.

About 65 undergraduates and 40 graduate students are majoring in the Department of Conservation in the various different specializations available. The undergraduate curriculum has been divided into four different specializations, depending upon the requirements of the students in question: fishery biology, wildlife management, conservation education (both for those who intend to teach in the conservation field or engage in general public relations or general education activities), and a curriculum in vertebrate zoology for those whose primary interest is ornithology, mammalogy, or other aspects of vertebrate zoology. Most of the students are encouraged to do some postgraduate work.

Michigan State College in December, 1949, established a Division of Conservation to coordinate all of the teaching, research, and extension activities in the field of conservation offered by the institution. The new Division of Conservation includes four departments: the Fisheries and Wildlife Department, Forestry Department, Department of Wood Utilization, and a Conservation Institute which offers work in park management, rural land use, soil and water conservation, and conservation administration. The new Division of Conservation administers a number of study and demonstration areas, including the Kellogg Bird Sanctuary, which is already well known to ornithologists. Its present technical staff totals about 60 men, and specialists in a number of additional fields are still being recruited.

The **University of Michigan** in 1950 organized a new School of Natural Resources which expanded and replaced the old School of Forestry and Conservation. Five curricula are offered—forestry, wood technology, wildlife management, fisheries, and conservation—each leading to the degree of Bachelor of Science. A fifth year is strongly recommended for those who desire full professional training.

Graduate work leading to the degree of Doctor of Philosophy or Doctor of Science is provided in any branch of the five major fields covered by the School. The School also emphasizes non-professional instruction relating to natural resources which will be of interest to students throughout the University. Special attention will be given to the philosophy and principles underlying the conservation of natural resources. Included in the new School is a newly established Charles Lathrop Pack Chair of Conservation, which has been filled by the appointment of Dr. Stanley A. Cain.

Yale University, with the cooperation of the Conservation Foundation, has established a new Chair of Conservation to which Dr. Paul B. Sears has been appointed, and has initiated in 1950-51 a graduate course leading to the Master of Science in Conservation. Its aim is to give a limited number of qualified students with various backgrounds and vocational interests an understanding of the basic principles of natural and social science involved in conservation. Account will be taken of the fact that conservation is achieved by the use of many different vocational techniques. The students' aptitude, training, and interests will be considered in relation to possible careers in public service, education, business or other professions. Wide latitude in the choice of courses in the curriculum is provided, but all students are expected to take courses in ecology, the ecological basis of conservation, and a seminar in conservation.—GUSTAV A. SWANSON

THE IMPORTANCE OF SMALL MARSHES TO WATERFOWL

Mr. Albert M. Day, at the 15th North American Wildlife Conference in his first public comment on the results of the January waterfowl inventory said that "it looks now as though instead of gaining ground last year, we more than likely lost some of the previous years' gains and not only took the harvestable crop but also cut into the capital stock of this year's breeders." This statement rekindled at once the controversy in regards to duck numbers and the immediate response voiced in some regions was one of doubt and even of disrespect. It should be known by all that the January inventory is a joint effort carried out in a cooperative plan in Canada, in the United States, and in México, and that regional results are cleared through the separate administrative offices before being submitted to the Fish and Wildlife Service for final compilation. It is understandable that sportsmen of regions where winter concentrations have been heavy should adopt the optimistic viewpoint; and yet in the face of the final results it is as pointless for them to contest the complete analysis as it would be for a Republican state to contest an overall Democratic victory.

The waterfowl situation will not be secure until the optimists believe the evidence brought forth by these surveys, and until we are willing to let populations increase without immediate dividends in bag or season increases.

Mr. Day expressed concern regarding subsidized drainage, pointing to the heavy loss of breeding terrain resulting from this program. "Of real concern to all of us interested in waterfowl," he said, "is the accelerated pace agricultural drainage has assumed in recent years. The bulk of this is on privately-owned lands, but it is encouraged by government subsidies and guided by government soil conservation technicians. As a result, we are now losing essential breeding grounds and wintering habitats much faster than we are rebuilding them."

In large measure the drainage program goes ahead without a full understanding of its impact on breeding populations. There has developed in recent years a false belief that ducks are produced mainly on the large pristine marshes, and that small waters producing small numbers of ducks are relatively unimportant. The breeding-ground surveys of recent years have shown that the nesting populations of many of our important game ducks are spread thinly, even on the large marshlands. Agricultural lands may hold breeding numbers which in pairs per square mile closely approach or even exceed the breeding populations of the large, so-called "factory" marshes. Such agricultural breeding terrain covers a vastly greater area than the large, isolated marshlands, hence Mr. Day's statement that "the private landowners in this country hold the key to the bulk of the production of wildlife-waterfowl."

Mr. Day's approach to this drainage problem is fresh and encouraging. Most important, his research program is supplying the facts and figures which demonstrate the greater dollar value of the farm pothole in our national economy. Large marsh areas are vital to the welfare of our waterfowl, and great strides have been made in saving or restoring such waters. But the ultimate and the successful plan for waterfowl management cannot be established until we win administrative security for small waters on private lands.—ALBERT HOCHBAUM.