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The Search For Natural History Areas In Minnesota

Authors

A. N. Wilcox, W. J. Breckenridge, R. L. Donovan, T. B. Magath, H. E. Stork, and Gustav Swanson

theologians, philosophers, statesmen, teachers, writers, scientists, doctors, and other leaders of men have been individualists. Many of them have resulted as a reaction to the failure of collectivism. They are the players who as natural individualists save the day.

Thus I have attempted to give you, briefly and suggestively, what I think, as a scientist, of individualism and collectivism in nature, hoping that these, and other facts may be of value to our leaders who, I am certain, are sincerely—although sometimes ignorantly—trying to solve our great human problems.

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THE SEARCH FOR NATURAL HISTORY AREAS IN MINNESOTA

*Report of the Committee on the Preservation of
Natural Conditions*

BY

A. N. WILCOX, *Chairman*
W. J. BRECKENRIDGE
R. L. DONOVAN

T. B. MAGATH
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At its annual meeting in 1937 the Minnesota Academy of Science went on record as favoring definite action toward the preservation of suitable natural areas in a virgin or unmodified condition and the encouragement of coordinated scientific studies thereon, as a result of which the president appointed a Committee on the Preservation of Natural Conditions. During the first year the committee has endeavored to prepare a broad ground work which would make possible a recognition of the needs and desires of the Academy, an understanding of the principles to be followed, and would permit an intelligent approach through the best possible information to the specific problems involved.

In the first place, the committee has confined its attention to the preservation of natural areas for scientific purposes as contrasted with recreational uses, aesthetic purposes, or broader conservational purposes. The possibilities of long-time, coordinated, biological observations leading to ecological studies of the indigenous fauna and flora, particularly with respect to the important forest and prairie biotas in Minnesota, have led to special consideration being given to areas which are suitable for such studies. These areas should be relatively large in order to provide a sufficient variety of species and of environmental conditions, to assure the maintenance of adequate colonies and populations, to permit biological adjustment to changing environmental conditions and to prevent undesirable invasions. It has also seemed desirable to consider areas which for such reasons as the posses-

sion of unique and valuable species or other rare or noteworthy features might be particularly valuable to preserve in an undisturbed state as living museums for scientific observation and study. These areas might in some cases be very much smaller than those desired for the coordinated ecological studies.

For either purpose permanent preservation is an important requirement. The committee has carefully considered the question of mode of preservation and ownership. While ownership by the Academy or by some university or college might seem at first to be the most desirable from the point of view of permanence of the areas and their scientific usefulness, it would present obvious difficulties in the way of procurement and maintenance. As pointed out a year ago,¹ preservation as a natural area in a national forest would probably give as much assurance as possible of permanent maintenance in the natural condition and of availability for scientific study by responsible agencies. In this connection it is worth while noting that the Lake States Forest Experiment Station has expressed an interest in our desires and aims, has given us valuable advice and has expressed a willingness to help when possible by extending us the privilege of using areas under their control.

The desirability of a state park status has also been considered. Although the question of the probable difficulty of preserving natural conditions in the face of the increasing demand for recreational facilities of the most popular sort for the general public has been raised, it is reassuring to witness the success of the long-standing cooperation between the administrators of the state parks and the University of Minnesota. Furthermore, the following definition of a state park has been formulated and is being used as a guide by the Division of State Parks of the State Conservation Department: "A State Park is a typical portion of the state's original domain of adequate size, whereby a small portion may be provided for concentrated use, and the remainder preserved in a primeval condition, accessible only by a system of foot trails and waterways, by which the present and future generations may study the flora, fauna and geologic structure of a beneficent Nature, 'unspoilt, unimproved, and unbeautified' by Man's attempt to improve on the work of the Master Engineer." The Director of the Division of State Parks has assured us of the fullest possible cooperation. It should be pointed out, however, that the complete withdrawal from public use of an area within a state park and its reservation for the sole use of a quasi-public agency such as the Academy would be considered contrary to public policy and therefore should not be expected.

In beginning the work of locating natural history areas, the committee has endeavored to learn of as many areas as possible which deserved investigation. About 500 letters have been sent

¹A. N. Wilcox, *The Fate of the Indigenous*. Proc. Minn. Acad. of Science 1937, 5: 15-23.

to members of the Academy and to non-member teachers, county agricultural agents and others whose interest or experience might lead them to make suggestions. Conferences have also been held with persons in administrative positions whose contacts with forest rangers, soil surveyors or other field workers might lead to useful suggestions. As a result of these inquiries, about 25 areas have been located and listed for investigation. The following have been visited by some member of the committee: Itasca State Park, the Nerstrand Woods in Rice county, Gwinn's Bluff in Winona county, Cedar Creek Bog in Anoka and Isanti counties and two areas of prairie in Traverse county.

Itasca State Park

Because of its size, of the relatively undisturbed condition of much of its area, and for other reasons, Itasca Park is exceptionally well suited for coordinated biological field studies. The park comprises over 31,700 acres located in Clearwater and Hubbard counties in the coniferous forest area of northern Minnesota. It contains more than 300 lakes and a number of streams, including the headwaters of the Mississippi River, Lake Itasca, at an altitude of 1,467 feet.

Itasca Park has an exceedingly abundant Canadian Zone fauna and flora. The stands of virgin Norway and white pines are particularly noteworthy. There is a great variety of forest types including good stands of deciduous timber. Portions of the park which lie away from existing roads are in a remarkably natural condition and are relatively safe from further disturbance. The area has long been a game refuge and as a result deer and beaver have attained even greater abundance than is compatible with their best welfare. Among the interesting animals which may be found are the porcupine, raccoon, bald eagle, osprey and turkey vulture.

Itasca Park affords special conveniences for investigators. Adequate living facilities are provided by a public camp ground, numerous cabins and Douglas Lodge within the park, and by many resorts near by. In addition, the University of Minnesota Forestry and Biological Station, located in the park, has laboratories and living quarters which are available during the latter half of the summer to individual investigators at very nominal rates. Excellent large-scale forest-cover maps and topographical maps are available. Furthermore, a number of investigators associated with the University of Minnesota have already covered the Itasca Park region in studying certain groups of organisms. Surveys of the plants, molluscs, aphids, wood-rotting fungi and protozoa by Drs. M. L. Grant, Samuel Eddy, A. A. Granovsky, Clyde Christensen and J. P. Gurner, respectively, are among those which have been carried on for a number of years. Mr. John Moyle has constructed a "Key to Common Non-Woody Plants of Itasca Park" which is especially useful to the visiting botanist.

Among the areas suggested in Itasca Park as being particularly well suited to the coordinated biological studies which the Academy is encouraging are the virgin Norway and white pine forests, a cedar bog and a floating bog. A tract which has been especially recommended by several persons familiar with the locality is that portion of the old park lying immediately west of Lake Itasca and in the region of the Bohall Trail.

The committee believes that Itasca State Park affords the most favorable conditions for an immediate beginning of work on the coordinated biological study of a natural area and recommends that the selection of a suitable area and the encouragement of work thereon be proceeded with in cooperation with the proper authorities.

Nerstrand Woods

The Nerstrand Woods of approximately 1,300 acres in Wheeling Township of Rice County constitutes the most desirable forest known to remain in the region of the Big Woods. Because this tract was divided into small woodlots during pioneer days, with the individual holdings too small for profitable fencing and pasturing, the woods have been ungrazed, with the result that the vegetation of the forest floor has been preserved in the virgin state. The great abundance of wild flowers is unequalled in the region.

The Nerstrand Woods lies in the valley of the east fork of Prairie Creek, a tributary of the Cannon river, at an altitude of about 1,100 feet. Along the two creeks and their tributary brooks there are outcrops of Shakopee limestone, St. Peter sandstone, and Galena limestone. There is a beautiful waterfall on Prairie Creek and a somewhat smaller fall on one of its tributaries. Although the flow of water during the recent dry seasons has sometimes been scant, it has been fed continuously by springs.

The most common trees are the hard maple, red and white oak, basswood, green ash, elm and ironwood, with butternut, bitternut, hickory, large-toothed poplar, blue beech and wild black cherry less common. Seven forest types have been distinguished. As one might expect in such an ungrazed woods, the forest floor is carpeted with wild flowers, including the familiar anemone, blood-root, buttercups, columbine, cowslip, dog-tooth violet, Dutchman's breeches, wild geranium, hepatica, honeysuckle, ladyslipper, phlox, trillium and violets, and with various ferns. Species which are becoming scarce are found here and there are several rare acid-loving plants which are unexpected in this part of the state.

No survey of the animal life has been made. Birds are present in great variety and numbers, including species which are not found elsewhere in this region. Although the animal life is undoubtedly less abundant than when deer roamed the region, it would be expected to increase under protection.

The preservation of this great remnant of deciduous forest, so desirable for scientific observation and study as well as for the

public enjoyment of undisturbed nature, would be a worthy but difficult task. Its accessibility to several colleges and universities and to centers of population greatly increases its value for educational purposes. Although attempts were made in 1934 and 1935 to acquire the land for a state park, and options were obtained on 101 of the 169 parcels, an appropriation for purchase was not obtained. Unless an appropriation can be obtained in the very near future, the Nerstrand Woods can only be saved by the unexpected munificence of some public-spirited citizen.

Within the last several years about 10 per cent of the land has been cleared. During the past winter 27 acres were cut clean, burned over and trampled so that even the soil may be expected to be lost. A lumber company is making contacts with owners for the purpose of obtaining the timber, either by the purchase of timber rights or by buying the land outright. The Nerstrand Woods as a whole has not yet been spoiled, but its desirability is decreasing and it is threatened with irreparable damage if not destruction.

The committee recommends that the Academy should aggressively encourage and promote the preservation of the Nerstrand Woods.

Cedar Creek Bog

This area, comprising approximately 240 acres, is of especial interest because it includes a small but typical "Canadian" lake together with a typical floating bog. This is surrounded by a white cedar swamp with some tamarack. The higher land supports some white pine and jack pine. This is the most southerly area of its type in the state and being situated on the Anoka-Isanti county line only about 25 miles from the Twin Cities, it is the only such area for study which is easily accessible from the Cities.

Fortunately, 160 acres of this area are owned by three persons who are greatly interested in its preservation. The remaining 80 acres, however, including about one-half of the lake itself, are owned by two persons more interested in development for profit than in preservation. One of these owners has already done some cutting and contemplates further clearing and the possible establishment of a public camp ground; the other plans to cut the larger trees.

The small size and the probable valuation of the two tracts which are threatened with disturbance should make the area not too difficult to obtain. To save it, prompt action is needed. The committee recommends that the Academy should actively encourage and promote the preservation of this area.

Gwinn's Bluff

This area, comprising about 300 or 400 acres, is featured by the highest bluff along the Mississippi river in Minnesota, 550 feet above the water level. The bluff vegetation includes a great many

extremely interesting forms, several of which occur here in isolated outposts far removed from the principal range of their species. The bluff is situated near the town of Dakota just south of Winona in the heart of that rugged picturesque region which is probably unsurpassed for scenic beauty in the state.

The present owner is greatly interested in the preservation of this tract. He is reported to have purchased it to prevent quarrying and is now prohibiting as well the cutting of timber and grazing. The area is considered safe as long as it remains in his possession.

Other Areas

In view of the difficulty anticipated in locating a large tract of unbroken prairie, it has been gratifying to have several areas suggested as such. Two tracts which were located by a member of the Committee were found to comprise, respectively, one and four square miles of unplowed and ungrazed prairie which had been utilized only for hay. These lie in Traverse county along the great route of bird migration.

It has been possible so far for the Committee to visit only a few of the most promising of the areas suggested by members of the Academy and others. It is hoped that most of the suggestions can be carefully investigated during the coming summer. In the exhibit which has been prepared by the Committee all the areas which have been suggested are indicated on a map of the state and those which have been investigated as well are represented by photographs and by a summary of their important features.

In conclusion, the Committee recommends that the Academy should proceed with the establishment of a study area in Itasca State Park, that in view of the emergency existing with respect to the Nerstrand Woods and Cedar Creek Bog and of their eminent desirability it should aggressively encourage and promote the preservation of these areas, and that the search for and investigation of other areas should be continued.

THE NEW FOUR MILLION VOLT GENERATOR AT THE UNIVERSITY OF MINNESOTA

L. H. RUMBAUGH
University of Minnesota

THE GLACIAL GEOLOGY OF NOVAYA ZEMLYA

L. M. GOULD
Carleton College