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Thomas L. Eddy
Green Lake Public School

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WISCONSIN JUNIOR ACADEMY STIR REPORT: A VASCULAR FLORA OF SNAKE CREEK CORRIDOR, WISCONSIN

Thomas L. Eddy
Green Lake Public School
Green Lake, Wisconsin 54941

Introduction

In November, 1978 my advanced biology class received a research grant through the Wisconsin Junior Academy's (WJA) Student-Teacher Integrated Research (STIR) Program. Funding for the program was provided by the Wisconsin Academy of Science, Arts, and Letters-Youth Program and by the American Association for the Advancement of Science. The basic purpose of STIR is to promote quality high school science and social science research by sponsoring grants which can be used to purchase equipment and supplies.

Our study, the first of its kind conducted in Green Lake County, involved a survey of the vascular plants on a local tract of land called Snake Creek. The field work was carried out by 14 students and myself, while Dr. Neil A. Harriman, University of Wisconsin-Oshkosh (UW-O), provided consultation as "participating research scientist."

Apart from the WJA, three local organizations also contributed funds to the project: the Green Lake Booster Club, Green Lake Chapter Izaak Walton League, and the Green Lake Lions. Community support for the project was enthusiastic since the Snake Creek area is well known by local sportsmen for its natural habitat and abundant wildlife.

Background

Snake Creek Corridor is a stream valley which is centrally located in the county between the Upper Fox River near Princeton and the Puchyan River floodplain east of the city of Green Lake. It is recognized by the East Central Wisconsin Regional Planning Commission (ECWRPC) as a "preservation corridor" because of its unique physical features and distribution of biological communities (ECWRPC, 1977). The area comprises over 4,000 acres, supporting a variety of native plant communities: cattail marsh, tamarack swamp, sedge meadow, prairie, shrub-carr, and upland oak woods.

In 1834, 24 years before Green Lake County became detached from Marquette County, the early land survey for the area was completed (General Land Office Survey, 1934). Judging by the original field notes and the vegetation growing there today, those communities not drastically altered by man have remained relatively stable for the past 150 years.

Due to its proximate location to Wisconsin's Tension Zone, the floristic composition of Snake Creek exhibits a simultaneous invasion by southern and northern plant species (Curtis, 1959). Other factors which affect the vegetation include glacial and post-glacial geology, topography, water resources and soils.

Procedure

The plant presses and plant dryer used in the study were designed and constructed by the 1978-79 STIR team. During the school year, a flexible schedule which allowed time for field work and species classification was approved by the school administration and faculty.

A monthly "STIR Progress Report" was mailed to landowners, who granted us permission to collect on their properties, and to funding contributors to keep them informed of our efforts.

Records of the plants are based on specimens which were collected during the course of the investigation and the OSH collection; their identification primarily follows Gleason and Cronquist (1963).

The collection of over 1,400 plants is deposited in the UW-O Herbarium (OSH) and is represented in part by some proposed threatened and endangered species for the state, and by many county records as well.

Results

During the course of the investigation, 501 species were identified from 87 plant families. Of these, there are 13 Pteridophytes, 4 Gymnosperms, 111 Monocotyledons, and 373 Dicotyledons. As might be expected, the monocots are largely represented by 41 Gramineae (grasses) and 39 Cyperaceae (sedges). The largest dicot family is represented by the Compositae (composites) which comprises 81 species.

The study documents range extensions for many plants that were previously unreported for the county. This information provides a continuing record of the range of the species. The county flora is scantily represented in the literature and poorly understood since only a limited amount of collecting has occurred here in the past. The 56 species identified as new county records are based on the *Preliminary Reports on the Flora of Wisconsin* and the OSH collection.

The record of plants may be used to document changes which occur in the numbers and diversity of native plants because of habitat destruction. The environmental impact generated by future land use at Snake Creek may be better assessed using this flora to draw comparisons.

According to Read (1976), certain plants which grow there qualify for protection under Wisconsin's Endangered Species Program. As a matter of interest they include:

Gentiana procera THREATENED (Lesser fringed gentian)
Panax quinquefolium THREATENED (Ginseng)
Salix sericea ENDANGERED (Silky willow)
Solidago ohioensis THREATENED (Ohio goldenrod)
Tofieldia glutinosa ENDANGERED (False asphodel)
Triglochin maritima THREATENED (Arrow-grass)
Viola novae-angliae UNKNOWN STATUS (New England violet)
V. septentrionalis THREATENED (Northern blue violet)

Conclusions

About one-half of the plants growing in the county are represented at Snake Creek (Eddy, 1981). The majority are native, i.e., they have had a long association with a particular plant community and were part of the presettlement flora (Rill, 1977). The abundance and diversity of its native vegetation make Snake Creek one of the unique wildlife areas left in east central Wisconsin. One hopes this study will serve as the basis for the compilation of a county flora.

As a follow-up, one student from the 1979-80 STIR team presented a paper to the 1980 Wisconsin Science Congress that explained our results. In addition, copies of the report were distributed to landowners, funding contributors, and to those who worked on the project. A video-taped program that discussed the nature of the study was shown to the general public at the 1979 Izaak Walton League State Convention in Green Lake.

Apart from its scientific value, the study provided many enjoyable learning experiences for the students and myself. Similar plant studies can also be conducted on local parks, wildlife management and refuge areas, railroad prairie remnants and other natural areas.

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Note: The *Preliminary Reports on the Flora of Wisconsin* are published in the Transactions of the Wisconsin Academy.