

**The Status of Indiana's Rarest Plants:
A Revision of the List of Endangered and Threatened Vascular Plants**

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Introduction

The purpose of the study was to update the knowledge concerning Indiana's rarest plants, especially those which were being considered by the United States Fish and Wildlife Service for federal endangered and threatened status. It was hoped that the data to be collected would aid in ascertaining the true status of all of Indiana's rarest plants. All data collected were to be used to keep the data bases of the Biology Survey Committee of the Academy and the Indiana National Heritage Program up-to-date.

Methods

The staffs of the Biology Survey Committee, the Division of Nature Preserves, and the Natural Heritage Program all were involved in the preparation and functioning of the study. The state was divided into five regions, and several regions were split into two subregions, based upon size and number of sites to be checked. Field botanists were hired to work in six regions or subregions. These were supplemented by the efforts of the Hayes Arboretum, who worked in southeast Indiana, and by Dr. Richard Maxwell, Indiana University Southeast, who worked in Clark and Floyd Counties. Department staff worked in central Indiana counties.

Information was provided to the botanists monthly, on a computer printout provided by the Heritage Program. This included all information gleaned from herbarium labels, and as exact a location as possible. The information was provided for all plants included on the "Preliminary List of Endangered and Threatened Vascular Plants of Indiana", by Bacone and Hedge (1). Priorities were given to each plant site, with those plants of federal concern, extirpated or endangered status being the top priority for field checking. A set of topographic maps was also provided.

The botanists were asked to check as many of the top priority sites as possible each month, and were expected to work six days a month from May through September. The botanists provided information as to condition of habitat if the plant was not found. If the plant were found, information collected included exact location, habitat, threats, population size and viability, and associated species. Whenever possible, especially in cases where identification was difficult, a slide or voucher specimen was collected, unless such collection would seriously jeopardize the population.

Results

During the field season, attempts were made to reverify 887 sites of rare

plants. Of these, 280 were found, or a 32% "success" rate. Two hundred and twenty-three plants were searched for with "endangered" status, and sixty-one were reverified (27%), twenty-eight reverified of fifty-eight with federal status (48%), and eighty-four of 275 with threatened status (31%). The other plants searched for had a "rare" status, or another status of "special concern". In addition to the reverifications, a number of new locations were discovered. Overall, 265 new sites were found, including thirty-five (federal status), 47 (endangered status), 76 (threatened status), and 74 (other categories). Approximately 140 sites, 16% of those looked for, were considered destroyed. The remainder were not located but the habitat appeared to be extant, or the locations were too vague to be checked.

As a result of this field work, status changes have been proposed for several species. These are listed with the original status (from Bacone and Hedge (1)) shown in parentheses, followed by the revised status. Nomenclature follows Gleason and Cronquist (2).

- Anemone caroliniana* Walt. (Endangered) Extirpated
Antennaria solitaria Rydb. (Threatened) Special Concern—Rare
Aristolochia tomentosa Sims. (Threatened) Special Concern—Rare
Betula populifolia Marsh. (Endangered) Extirpated
Habenaria leucophaea (Nutt.) Bray. (Endangered) Extirpated
Hypericum dolabriforme Vent. (Extirpated) Endangered
Hypericum frondosum Michx. (Endangered) Extirpated
Ilex decidua Walt. (Threatened) Special Concern—Rare
Illiamna remota Greene. (Special Concern—Federal) Endangered
Iresine rhizomatosa Standl. (Endangered) Threatened
Lesquerella globosa (Desv.) Wats. (Endangered) Special Concern—Taxonomy
Melica mutica Walt. (Threatened) Special Concern—Rare
Perideridia americana (Nutt.) Reichenb. (Threatened) Endangered
Phyllitis scolopendrium (L.) Newm. var. *americana* Fern. (Special Concern—Federal) Dropped
Polytaenia nuttallii DC. (Threatened) Endangered
Rudbeckia fulgida Ait. (Threatened) Special Concern—Taxonomy
Rudbeckia fulgida Ait. var. *umbrosa* (Boynton and Beadle) Cronq. (Endangered) Special Concern Taxonomy
Rudbeckia palustris Eggert. (Endangered) Special Concern—Taxonomy
Saxifraga forbesii Vasey. (Special Concern—Verification) Endangered
Scutellaria parvula Michx. var. *australis* Fassett. (Threatened) Special Concern—Taxonomy
Sparganium androcladum (Engelm.) Morong. (Endangered) Special Concern—Taxonomy
Stachys clingmanii Small. (Threatened) Endangered
Wisteria macrostachya Nutt. (Endangered) Extirpated
Zygadenus glaucus Nutt. (Endangered) Threatened

Discussion

The Department of Natural Resources and the Academy of Science continue to be interested in ascertaining the true status of Indiana's rarest plants and animals, and hope to continue with similar field work in the coming years. This study has provided much needed information, which can be used to help protect the rarest elements of our flora, through a combination of tools such as the planning and review process, acquisition, registration as a natural area, and research. It is hoped that all persons knowledgeable about any of these plants will continue to

communicate concerning threats, new locations, status information, etc., to both the Academy and the Department, so that the information base can be as up-to-date as possible. Continuing field work such as this effort are desperately needed in the years ahead.

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Literature Cited

1. BACONE, J.A. and C. L. HEDGE. 1979. A preliminary list of endangered and threatened vascular plants in Indiana. *Proc. Ind. Acad. Sci.* 89:359-371.
2. GLEASON, H. A. and A. CRONQUIST. 1963. *Manual of vascular plants of northeastern United States and adjacent Canada*. D. Van Nostrand Co., Princeton, New Jersey 810 p.