

COSEWIC
Assessment and Update Status Report

on the

Large Whorled Pogonia
Isotria verticillata

in Canada



ENDANGERED
2000

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada



COSEPAC
Comité sur la situation
des espèces en péril
au Canada

COSEWIC status reports are working documents used in assigning the status of wildlife species suspected of being at risk. This report may be cited as follows:

Please note: Persons wishing to cite data in the report should refer to the report (and cite the author(s)); persons wishing to cite the COSEWIC status will refer to the assessment (and cite COSEWIC). A production note will be provided if additional information on the status report history is required.

COSEWIC. 2000. COSEWIC assessment and update status report on the Large Whorled Pogonia *Isotria verticillata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 6 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

White, D.J. 1998. Update COSEWIC status report on the Large Whorled Pogonia *Isotria verticillata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 1-6 pp.

Previous Report(s):

Klinkenberg, R. 1986. COSEWIC status report on the Large Whorled Pogonia *Isotria verticillata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 48 pp.

Production note:

Please note the status recommended in the Section "Evaluation and Recommended Status" of the latest status assigned to the species by COSEWIC.

For additional copies contact:

COSEWIC Secretariat
c/o Canadian Wildlife Service
Environment Canada
Ottawa, ON
K1A 0H3

Tel.: (819) 953-3215
Fax: (819) 994-3684
E-mail: COSEWIC/COSEPAC@ec.gc.ca
<http://www.cosewic.gc.ca>

Également disponible en français sous le titre Évaluation et Rapport de situation du COSEPAC sur l'Isotrie verticillée (*Isotria verticillata*) au Canada – Mise à jour.

Cover illustration/photo:

Large Whorled Pogonia — Reprinted with permission from *The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada* (Volume 1), copyright 1952. The New York Botanical Garden.

©Her Majesty the Queen in Right of Canada, 2011.
Catalogue No. CW69-14/105-2002E-IN
ISBN 0-662-31873-0



Recycled paper



COSEWIC Assessment Summary

Assessment Summary — May 2000

Common name

Large Whorled Pogonia

Scientific name

Isotria verticillata

Status

Endangered

Reason for designation

Only three remaining populations, none seen since 1996.

Occurrence

Ontario

Status history

Designated Endangered in April 1986. Status re-examined and confirmed Endangered in April 1998 and in May 2000.



COSEWIC Executive Summary

Large Whorled Pogonia *Isotria verticillata*

Description

Large Whorled Pogonia (*Isotria verticillata*) is an orchid that has a single whorl of five to six leaves at the top of the stem. The leaves may be overtopped by a single yellowish-green flower. The five narrow, purplish sepals are much longer than the petals.

Distribution

The orchid occurs in the United States from New England and Michigan south to Texas and Georgia. Its only Canadian occurrence is in southwestern Ontario.

Habitat

This plant requires rich, moist, deciduous or mixed forest on sandy soil with a thick leaf litter, lots of humus, and a relatively open canopy.

General biology

Large Whorled Pogonia is a relatively small and inconspicuous plant that is very similar to non-flowering shoots of the common Indian Cucumber-root (*Medeola virginiana*). This similarity could cause the orchid to be trampled inadvertently by those trying to find the species.

Population size and trends

In 1986, the orchid was known at two sites. Since that time it seems to have disappeared at one of the sites and only one plant has been seen at the other site. A third station was found after the status report was written; however, it seems to have been eliminated recently.

Limiting factors and threats

The main limiting factor is the lack of suitable mixed forest habitat with an acidic substrate in the heavily developed Carolinian Zone of southwestern Ontario. The species is at risk from trampling by those who would like to find or photograph this rare orchid.

Existing protection

The orchid is protected under Ontario's *Endangered Species Act*. The only station known to be extant is on private property.



COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) determines the national status of wild species, subspecies, varieties, and nationally significant populations that are considered to be at risk in Canada. Designations are made on all native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fish, lepidopterans, molluscs, vascular plants, lichens, and mosses.

COSEWIC MEMBERSHIP

COSEWIC comprises representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biosystematic Partnership), three nonjurisdictional members and the co-chairs of the species specialist groups. The committee meets to consider status reports on candidate species.

DEFINITIONS

| | |
|------------------------|--|
| Species | Any indigenous species, subspecies, variety, or geographically defined population of wild fauna and flora. |
| Extinct (X) | A species that no longer exists. |
| Extirpated (XT) | A species no longer existing in the wild in Canada, but occurring elsewhere. |
| Endangered (E) | A species facing imminent extirpation or extinction. |
| Threatened (T) | A species likely to become endangered if limiting factors are not reversed. |
| Special Concern (SC)* | A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events. |
| Not at Risk (NAR)** | A species that has been evaluated and found to be not at risk. |
| Data Deficient (DD)*** | A species for which there is insufficient scientific information to support status designation. |

* Formerly described as “Vulnerable” from 1990 to 1999, or “Rare” prior to 1990.

** Formerly described as “Not In Any Category”, or “No Designation Required.”

*** Formerly described as “Indeterminate” from 1994 to 1999 or “ISIBD” (insufficient scientific information on which to base a designation) prior to 1994.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list.



Environment
Canada

Canadian Wildlife
Service

Environnement
Canada

Service canadien
de la faune

Canada

The Canadian Wildlife Service, Environment Canada, provides full administrative and financial support to the COSEWIC Secretariat.

Update
COSEWIC Status Report

on the

Large Whorled Pogonia
Isotria verticillata

in Canada

2000

TABLE OF CONTENTS

| | |
|--|---|
| INTRODUCTION..... | 3 |
| DISTRIBUTION..... | 3 |
| PROTECTION..... | 4 |
| POPULATION SIZE AND TRENDS..... | 4 |
| HABITAT | 4 |
| BIOLOGY | 5 |
| LIMITING FACTORS | 5 |
| EVALUATION AND STATUS RECOMMENDATION | 5 |
| ACKNOWLEDGEMENTS | 5 |
| LITERATURE CITED | 6 |
| THE AUTHOR..... | 6 |

List of Figures

| | |
|---|---|
| Figure 1. Location of the single location for Large Whorled Pogonia in Canada | 3 |
|---|---|

INTRODUCTION

Large Whorled Pogonia (*Isotria verticillata* (Muhl. ex Willd.) Raf.) was designated as endangered in 1986 due to its very limited number of plants known in Canada (Klinkenberg, 1986a). Prior to 1986, the plant was known from small populations in Middlesex County and Haldimand-Norfolk. Large Whorled Pogonia requires rich, moist, deciduous or mixed forest on sandy soil with a thick leaf litter and lots of humus (Klinkenberg, 1986a).

DISTRIBUTION

Large Whorled Pogonia occurs in the United States from New England and Michigan south to Texas and Georgia. Its only Canadian occurrence is in southwestern Ontario (Figure 1).

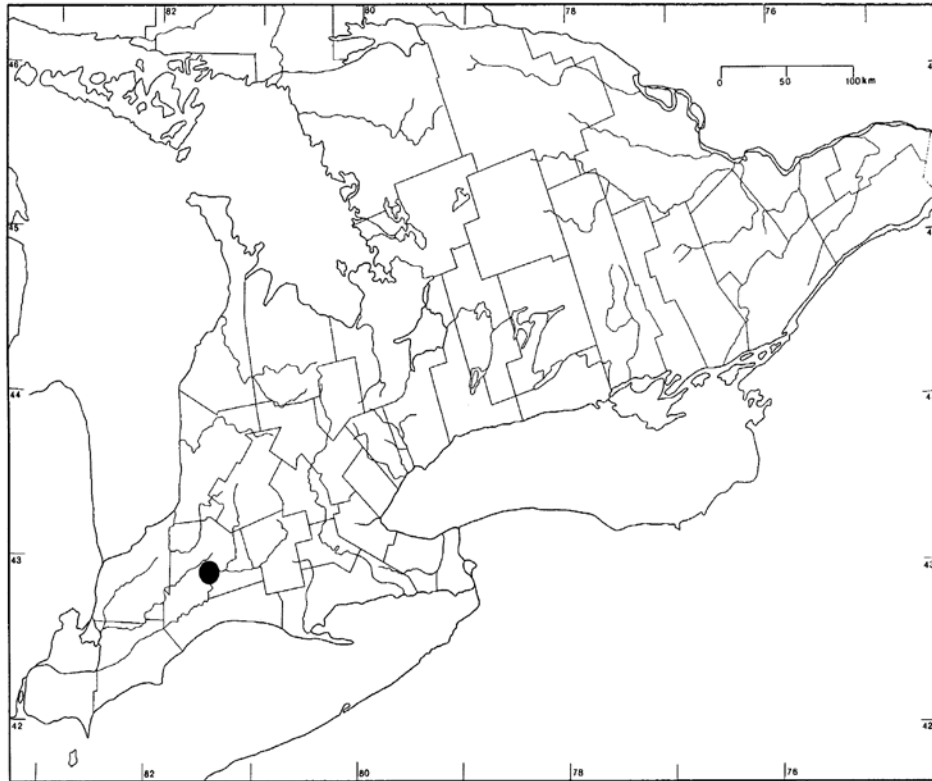


Figure 1. Location of the single location for Large Whorled Pogonia in Canada (solid circle).

PROTECTION

The orchid is protected under the Ontario *Endangered Species Act*. The Large Whorled Pogonia site in the Backus Woods is in an Area of Natural and Scientific Interest that is owned by the Long Point Region Conservation Authority. The Fowlers Pond site is part of the Lockhart Ponds Wildlife Area that is managed by the Ontario Ministry of Natural Resources. The third site occurs in the Skunk's Misery Area of Natural and Scientific Interest and is on private property.

POPULATION SIZE AND TRENDS

Thorough inventories have not been undertaken to determine the extent and distribution of the orchid within the three known sites; however, a number of people have searched the areas at various times and recorded plant numbers (McLeod, 1986a, 1986b; Oldham, 1997). The last recorded sighting of the orchid at any of the three stations was in 1996 when a single vegetative individual was found at Skunk's Misery by Al Woodliffe and Dave McLeod (D. McLeod, pers. com., 1997). The present author searched this site unsuccessfully in July 1997. The site at Skunk's Misery was discovered in 1984 and supported 4 plants (Klinkenberg, 1986b). By 1987, the colony had increased to 9 plants (Oldham, 1997). It has gradually declined to the 1996 sighting of one plant (D. McLeod, pers. com., 1997).

The Backus Woods colony was found in about 1965 and supported 43 plants in 1966 (Oldham, 1997). Since that time, the colony has declined and the orchid was last seen in 1990 when 2 plants were found by Mike Oldham and Don Sutherland (Oldham, 1997). Others who know the location well are convinced that it has disappeared there (D. McLeod, pers. com., 1997; M. Gartshore, pers. com., 1997; R. Brown, pers. com., 1997).

The Fowlers Pond site—first discovered in 1985—supported 106 plants in 1987 (Oldham, 1997) but this population has declined steadily and may now be gone. Dave McLeod has been monitoring the site since 1986 and could not find any plants there in 1996. Beavers have dammed the nearby pond in recent years and this has caused flooding of the orchid site that appears to have eliminated the Pogonia as well as other associated plants at the site (D. McLeod, pers. com., 1997). The present author searched the site unsuccessfully in July 1997.

HABITAT

Large Whorled Pogonia requires rich, moist, deciduous or mixed forest on sandy soil with a thick leaf litter and lots of humus (Klinkenberg, 1986a). The forest canopy should be relatively open (Anderson & Britton, 1986).

BIOLOGY

Large Whorled Pogonia is a small and inconspicuous plant that is very similar to non-flowering shoots of the common Indian Cucumber-root (*Medeola virginiana*). This similarity could cause the orchid to be trampled inadvertently by those trying to find the species.

LIMITING FACTORS

Rare orchids have a high profile and the Backus Woods site has been visited by many naturalists, orchid enthusiasts, and photographers. This attention puts Large Whorled Pogonia at risk from trampling and soil compaction (Anderson & Britton, 1986).

The Fowlers Pond site has probably been eliminated by flooding due to Beaver activity. The site in Skunk's Misery is marked for logging and although the immediate area around the orchid site has been marked as a no-logging zone (A. Woodliffe, pers. com., 1997), such activity close to the colony could eliminate the species.

EVALUATION AND STATUS RECOMMENDATION

When the status designation of endangered was assigned in 1986, Large Whorled Pogonia was known from one site in Middlesex County and one in Haldimand-Norfolk. Since that time, it has been discovered at one other station.

Unfortunately, only one plant was found in 1996 at the Middlesex County site, none have been seen since 1990 at the Haldimand-Norfolk site, and the orchid appears to have been eliminated at the most recently discovered site at Fowlers Pond. Thus, there is little reason to change the designation of endangered status for Large Whorled Pogonia.

ACKNOWLEDGEMENTS

Allen Woodliffe, District Ecologist, Ontario Ministry of Natural Resources, Chatham District, provided information on the orchid at Skunk's Misery and gave the author a detailed site map to the colony. Mike Oldham, Botanist, Natural Heritage Information Centre, Peterborough, provided background reports and a listing of known orchid records with details of recent confirmations. Dave McLeod, formerly of Aylmer District office of the Ontario Ministry of Natural Resources, provided information on all three sites. Funding was provided by the Canadian Wildlife Service, Environment Canada.

LITERATURE CITED

- Anderson, A.B. and D.M. Britton. 1986. *Isotria verticillata* (Muhl. ex Willd.) Raf. (Whorled Pogonia) discovered in Oxford County. The Plant Press 4: 18-19.
- Klinkenberg, R. 1986a. Status report on the Large Whorled Pogonia (*Isotria verticillata*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Canadian Wildlife Service, Ottawa. Unpublished report. 40 pp.
- Klinkenberg, R. 1986b. An update on the distribution and status of *Isotria verticillata* (Muhl. ex Willd.) Raf. (Whorled Pogonia) in Ontario. The Plant Press 4: 20.
- McLeod, D. 1986a. 1986 status of the Whorled Pogonia (*Isotria verticillata*) at the Mosa Township, Middlesex County site. Ontario Ministry of Natural Resources, Aylmer District. Unpublished report. 2 pp.
- McLeod, D. 1986b. 1986 status of the Whorled Pogonia (*Isotria verticillata*) at the Lockhart Pond, Oxford County. Ontario Ministry of Natural Resources, Aylmer District. Unpublished report. 1 pp.
- Oldham, M.J. 1997. Element Occurrence records of Large Whorled Pogonia (*Isotria verticillata*) from the database of the Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough. 4 pp.

THE AUTHOR

David J. White has a B.Sc. in biology and has been conducting natural area inventories and evaluating the status and significance of rare plants for more than 25 years. He began doing field surveys in 1972 for the International Biological Program. From 1973 to 1983, David was employed by the Canadian Museum of Nature as a research technician. During that period he co-authored a number of publications on rare plants, including the Atlas of the Rare Vascular Plants of Ontario. From 1984 to the present, David has worked as a self-employed life science consultant. He has completed projects ranging from natural area inventories and evaluations to reports on invasive species. David has previously written COSEWIC status reports on Ginseng (*Panax quinquefolius*), Golden-seal (*Hydrastis canadensis*), and Branched Bartonian (*Bartonia paniculata*).