

Action Plan for the Small Whorled Pogonia (*Isotria medeoloides*) in Canada

Small Whorled Pogonia



2011



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For copies of the action plan, or for additional information on species at risk, including COSEWIC Status Reports, residence descriptions, recovery strategies, and other related recovery documents, please visit the Species at Risk Public Registry (www.sararegistry.gc.ca).

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PREFACE

Under the *Species at Risk Act* (S.C. 2002, c.29) (SARA) the federal competent ministers are responsible for the preparation of action plans for species listed as Extirpated, Endangered, and Threatened and are required to report on progress within five years. The federal, provincial, and territorial government signatories under the Accord for the Protection of Species at Risk (1996) agreed to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada.

Under SARA, an action plan provides the detailed recovery planning that supports the strategic direction set out in the recovery strategy for the species. The plan outlines what needs to be done to achieve the population and distribution objectives identified in the recovery strategy, including the measures to be taken to address the threats and monitor the recovery of the species, as well as the measures to protect critical habitat. The socio-economic impacts of implementing the plan are also evaluated. Additional project-specific action plans may be created for a species that address other areas of recovery implementation.

The Minister of the Environment is the competent minister for the recovery of the Small Whorled Pogonia and has prepared this action plan to implement the recovery strategy, as per section 49 of SARA. It has been prepared in cooperation with the Ontario Ministry of Natural Resources.

Success in the recovery of this species depends on the commitment and cooperation of many different constituencies that will be involved in implementing the directions and actions set out in this action plan and will not be achieved by Environment Canada, or any other jurisdiction alone. All Canadians are invited to join in supporting and implementing this action plan for the benefit of the Small Whorled Pogonia and Canadian society as a whole.

Implementation of this action plan is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.

ACKNOWLEDGMENTS

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EXECUTIVE SUMMARY

The Small Whorled Pogonia (*Isotria medeoloides*) is a small orchid that is rare through most of its range, which includes portions of eastern North America. In Canada, it is limited to one occurrence in southwestern Ontario, in the Calton Swamp area near Aylmer, Ontario. Small Whorled Pogonia was listed as an Endangered species in Canada under the *Species at Risk Act* in 2003. Although there are unknowns regarding this species, in keeping with the precautionary principal, a recovery strategy was prepared as per section 41(1) of SARA, as is done when recovery is determined to be feasible. This action plan outlines the steps necessary to achieve the objectives detailed in the recovery strategy.

This action plan follows from the *Recovery Strategy for the Small Whorled Pogonia (Isotria medeoloides) in Canada* (McConnell 2007). The long-term goal (2006-2026) outlined in the recovery strategy is to maintain the persistence and viability of Canada's only population. This action plan addresses the highest priority objectives identified in the recovery strategy. High priority objectives are identified as urgent or necessary in Table 3 of that document. In addition, habitat protection (identified as beneficial in the recovery strategy) is now considered necessary and is addressed within this action plan.

The critical habitat for this species is identified, to the extent possible, in this action plan.

Actions to be completed in order to monitor the recovery of the species, its long-term viability, and to achieve the objectives in the recovery strategy are detailed in this document, including: actions for protection, assessment and monitoring of the population, outreach and communication, and habitat and/or population restoration. Timelines are given for each action.

The overall socio-economic impacts for the recovery of this species are expected to be minor.

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1. SYNOPSIS OF THE RECOVERY STRATEGY AND UPDATE

For full details, see the associated recovery strategy.

1.1 Associated Recovery Strategy

McConnell, A. 2007. Recovery Strategy for the Small Whorled Pogonia (*Isotria medeoloides*) in Canada. 13pp.

Available on the Species at Risk Public Registry www.sararegistry.gc.ca.

1.2 Species Assessment Information from COSEWIC¹

Date of Assessment: May 2000

Common Name (population): Small Whorled Pogonia

Scientific Name: *Isotria medeoloides*

COSEWIC Status: Endangered

Reason for Designation: Single small population, rare throughout its range, with plants appearing irregularly and none seen since 1989².

Canadian Occurrence: Ontario

COSEWIC Status History: Designated Endangered in April 1982. Status re-examined and confirmed in April 1998 and in May 2000.

¹ Committee on the Status of Endangered Wildlife in Canada.

² Since the last COSEWIC report was produced, a confirmed sighting has occurred in the Calton Swamp (1998).

1.3 Description of the Species

Small Whorled Pogonia (*Isotria medeoloides*) is a small (9.5 – 25.0 cm tall) orchid characterized by a single whorl at the top of the stem consisting of five to six glaucous leaves, elliptic to elliptic-obovate in shape, overtopped by one or two yellowish-green flowers (U.S. Fish and Wildlife Service 1992; COSEWIC 2000).

1.4 Populations and Distribution

The Small Whorled Pogonia inhabits portions of eastern North America, including the United States, from New England and Michigan south to Missouri and South Carolina. The only Canadian occurrence is known from the Calton Swamp of Elgin County, near Aylmer, Ontario (Figure 1), where the species has historically been noted in four distinct areas within a few hundred metres of one another (COSEWIC 2000), but has not been confirmed in the areas since 1998 (Oldham, pers. comm. 2006; McConnell 2007). The Ontario population represents less than 1% of its global distribution (McConnell 2007).



Figure 1. Historic Canadian Distribution of Small Whorled Pogonia

1.5 Threats

There are two known threats to the Ontario population of Small Whorled Pogonia: 1. trampling, and 2. habitat degradation. Other possible threats include herbivory (deer, slugs), collection, and loss of genetic diversity (McConnell 2007).

1.6 Goals and Objectives for the Small Whorled Pogonia

1.6.1 Goal

The long-term goal (2006-2026) as outlined in the recovery strategy (McConnell 2007) is to maintain the persistence and viability of Canada's only population. This goal is considered as the population and distribution objective for this species.

1.6.2 Recovery Objectives

The short-term recovery objectives for this population as outlined in the recovery strategy (McConnell 2007) are to:

1. Survey and, if extant, monitor individual plants within the area of the four recorded historical subpopulations;
2. Determine population dynamics and habitat characteristics of the Calton Swamp colony;
3. Develop strategies for the protection of the population and supporting habitat;
4. Investigate techniques and feasibility of augmenting the extant population or restoring the species to historic locations if it is deemed to be extirpated;
5. Initiate research to address knowledge gaps related to the species' biology and ecology.

1.7 Critical Habitat addressed in the Recovery Strategy

Critical habitat was not identified in the recovery strategy. It is identified within this action plan.

2. RECOVERY ACTIONS

2.1 Scope of the Action Plan

This action plan addresses the highest priority objectives identified in the recovery strategy (see section 1.6.2 above). High priority objectives are those with strategies identified as urgent or necessary in Table 3 of that document. In addition, habitat protection, identified as beneficial in the recovery strategy, is now considered necessary and is addressed within this action plan. Other objectives and strategies are not addressed within this action plan because they are not considered essential to attain the population and distribution objectives at this time. They may be addressed in subsequent action plans if necessary. This action plan covers the most recent known area of occurrence for Small Whorled Pogonia in Canada, namely the Calton Swamp which is located in southwestern Ontario, and is under the ownership of the Catfish Creek Conservation Authority (CCCA).

2.2 Critical Habitat

2.2.1 Identification of the critical habitat addressed by the Action Plan

In Calton Swamp, Small Whorled Pogonia is known to have occurred in habitat described as “partial shade at the open edge of deciduous second growth, adjacent to a stand of mature hemlock [Eastern Hemlock, *Tsuga canadensis*]. Other species in the area include Yellow Birch (*Betula alleghaniensis*), Sugar Maple (*Acer saccharum*), Red Ash (*Fraxinus pensylvanica*), Large-toothed Aspen (*Populus grandidentata*), American Chestnut (*Castanea dentate*), Red Oak (*Quercus rubra*), and Black Cherry (*Prunus serotina*)” (Brownell 1982). The vegetation community has been described and mapped to the level of vegetation type following the Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998) (MMM Group Limited 2007).

Critical habitat for the Small Whorled Pogonia is identified as the contiguous ELC vegetation type polygons of Fresh-moist Sugar Maple – Yellow Birch Deciduous Forest (FOD6-3) and Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest (FOD 6-1) in Calton Swamp, in which Small Whorled Pogonia was known to have occurred. The Fresh-moist Sugar Maple – Yellow Birch Deciduous Forest vegetation type is often associated with coniferous species such as hemlock or White Cedar (*Thuja occidentalis*). It tends to be moist yet well drained and common on lower slopes and sites with complex microtopography (Lee et al. 1998). The Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest vegetation type is often associated with Green Ash (*Fraxinus pensylvanica*) and Black Ash (*Fraxinus nigra*) and is common within the landscape (Lee et al. 1998). Biophysical attributes of the critical habitat for the Small Whorled Pogonia include damp mixed woods, acidic soil, flat terrain, canopy with small openings, and limited shrub and herbaceous cover (COSEWIC 2000).

The ELC framework provides a standardized approach to the interpretation and delineation of dynamic ecosystem boundaries. The ELC approach classifies habitats not only by vegetation community but also considers hydrology and topography, and as such captures the biophysical ecosystem requirements for the Small Whorled Pogonia. The ELC vegetation type boundaries have been determined using air photo interpretation and field verification.

Although not recently seen, critical habitat has been identified for the Small Whorled Pogonia. At such time as (a) plant(s) is/are found, any new information obtained will be used to refine the critical habitat to the extent possible.

Appendix B, giving the coordinates of the centroid of the population and critical habitat for the Small Whorled Pogonia, has been removed from the public document to protect the species and its habitat. Due to the plant’s high profile as a very rare orchid, known locations may be visited by orchid enthusiasts and photographers. Disclosing the location not only puts the plant at considerable risk from inadvertent trampling, but also increases the potential for collection.

2.2.2 Examples of activities likely to result in destruction of critical habitat

Activities likely to result in the destruction of Small Whorled Pogonia critical habitat include, but are not limited to:

1. Activities that could result in soil compaction, including off-road and off-trail use by individuals, whether they are pedestrians (e.g. hikers, naturalists and hunters) or drivers of motorized recreational vehicles (e.g. dirt bikes and ATVs). Such activities can destroy critical habitat by creating conditions unfavorable for germination;
2. Activities such as logging that create dramatic increases in the amount of light reaching the forest floor. Although small increases in the amount of light reaching the forest floor appear to be beneficial to Small Whorled Pogonia (McConnell 2007), significant increases can be harmful. Significant increases in light levels allow the herbaceous layer to flourish, resulting in more competition and increased shading, which in turn reduces habitat suitability for the Small Whorled Pogonia; and
3. Construction of buildings, boardwalks or other structures that physically cover the habitat for Small Whorled Pogonia and prevent germination and growth of individuals.

2.3 Critical Habitat Protection

Measures to be taken to protect critical habitat may include application of legislation and policies such as the Ontario *Endangered Species Act, 2007* and CCCA management policies.

Since the Small Whorled Pogonia is listed as Endangered on the Species at Risk in Ontario List under Ontario's *Endangered Species Act, 2007* (ESA 2007), its habitat may be protected under the general habitat provisions of the ESA 2007.

Similarly, given that critical habitat for Small Whorled Pogonia lies within CCCA land, some protection may be afforded from threats such as development. The activities identified in section 2.2.2 (above) as likely to result in destruction of critical habitat can be, and are being, minimized by management policies and practices within the conservation lands (Difazio 2003).

Environment Canada is working closely with the Province of Ontario and the CCCA to make an assessment on effective protection. Should the above measures be considered effective protection under SARA, no critical habitat would remain unprotected. If it is determined that any portion of critical habitat remains unprotected, the steps taken to ensure its protection will be reported on under s63 of SARA and posted on the Species at Risk Public Registry.

2.4 Measures to be taken and Implementation Schedule

Environment Canada will endeavour to support implementation of this plan given available resources and varying species at risk conservation priorities.

Table 1. Measures to be taken and Implementation Schedule

Action	Priority	Threats or limitation	Responsibility ^{1,2}		Timeline
			Lead	Other	
Protection					
Action 1: Update CCCA's management plan for Calton Swamp to address Small Whorled Pogonia and reflect new information as it is available.	High	Trampling, habitat degradation, herbivory	CCCA		As required
Action 2: Protect occurrences off CCCA lands through stewardship activities. This action will only take place if another occurrence is discovered.	High	Trampling, habitat degradation	OMNR	CCCA EC-CWS	As required
Monitoring and Assessment					
Action 3: Develop and implement a survey protocol to survey the last known location of Small Whorled Pogonia and to monitor the population, if extant.	High	Filling knowledge gaps	CCCA		2012
Action 4: Evaluate the suitability of potential habitat near the last known location of Small Whorled Pogonia (within Calton Swamp).	Medium	Filling knowledge gaps	CCCA	OMNR	2015
Outreach and Communication					
Action 5: Prepare communication materials and distribute to adjacent landowners.	Medium	Collection, habitat degradation, trampling	CCCA		2012
Action 6: Review literature and consult with U.S. experts and recovery planners to share species information and to determine the most appropriate recovery measures for the species.	High	Filling knowledge gaps	CCCA EC-CWS		As required
Habitat and/or population restoration					
Action 7: If the last known Canadian population is confirmed to be extant, augment this population through habitat restoration around the last known occurrence.	Medium	Habitat degradation, loss of genetic diversity	CCCA		As required
Action 8: If the last known Canadian population is deemed extirpated, assess the feasibility of reintroducing the species to historic locations.	Medium	Loss of genetic diversity	CCCA EC-CWS		As required

3. MEASURING PROGRESS

The performance indicators presented below provide a way to define and measure progress toward achieving the goal for this species.

¹ Identification of government agencies and non-governmental organizations as the responsible agency does not commit that agency or organization to implementing the listed action. Implementing actions will be contingent upon each organization's or agency's priorities and budgetary constraints.

² Note: EC-CWS – Environment Canada-Canadian Wildlife Service, OMNR – Ontario Ministry of Natural Resources, CCCA – Catfish Creek Conservation Authority.

Every 5 years, success of activities related to Small Whorled Pogonia recovery will be measured against the following performance indicators:

- Persistence of the single known Small Whorled Pogonia population in Canada³.

4. SOCIO-ECONOMIC EVALUATION

This species has been found only on land owned by the CCCA. Many of the proposed activities will be integrated in the operational management of the Conservation Authority's lands and will have minimal new costs. Costs could increase if restoration projects become necessary.

The action plan does not bring any new restrictions to land use outside the CCCA lands and, as such, will have no indirect socio-economic effects on the public. However, there may be minor recreational restrictions on the CCCA lands to prevent harm to the species, if rediscovered. Minor inconveniences to recreationalists may occur if the area is closed off to foot traffic to prevent trampling. This will not impact the majority of the Calton Swamp users and is considered minor.

Many of the benefits derived from wildlife are non-market commodities which are difficult to quantify. Wildlife, in all its forms, has value in and of itself, and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological, and scientific reasons. The conservation of wildlife at risk is an important component of the Government of Canada's commitment to conserving biological diversity. Biodiversity is important to Canada's and Ontario's current and future economy and natural wealth. A self-sustaining healthy ecosystem with its various elements in place, including species at risk, contributes positively to landowner and public livelihoods.

As this population is the only one occurring in Canada, and the species is globally rare, there is benefit in conserving it based on the above reasoning.

5. ASSOCIATED PLANS

The only known occurrence of Small Whorled Pogonia is in Calton Swamp, owned and managed by the CCCA. Therefore, a draft interim management plan for Small Whorled Pogonia habitat in Calton Swamp has been produced (Anonymous 1984) for CCCA, and the CCCA drafted the original recovery strategy for this species (Difazio 2003).

³ If additional Small Whorled Pogonia populations are discovered, this performance measure will be revisited.

6. REFERENCES

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Personal Communications

- Oldham, M. personal communication via email. Feb. 13, 2006.

APPENDIX A: EFFECTS ON THE ENVIRONMENT AND OTHER SPECIES

Please refer to the Recovery Strategy for the Small Whorled Pogonia (*Isotria medeoloides*) in Canada (McConnell 2007) for information on the effects of the proposed recovery activities on other species, natural communities or ecological processes.

APPENDIX B: CENTROID OF THE CRITICAL HABITAT

This appendix has been removed from the document posted on the Public Registry.