

Blunt-lobed Woodsia

Ontario Government Response Statement



Photo: Leslie Hunt

Protecting and Recovering Species at Risk in Ontario

Species at risk recovery is a key part of protecting Ontario's biodiversity. *The Endangered Species Act, 2007* (ESA) is the Government of Ontario's legislative commitment to protecting and recovering species at risk and their habitats.

Under the ESA, the Ministry of Natural Resources and Forestry (the Ministry) must ensure that a recovery strategy is prepared for each species that is listed as endangered or threatened. A recovery strategy provides science-based advice to government on what is required to achieve recovery of a species.

Within nine months after a recovery strategy is prepared, the ESA requires the Ministry to publish a statement summarizing the government's intended actions and priorities in response to the recovery strategy. The response statement is the government's policy response to the scientific advice provided in the recovery strategy. In addition to the strategy, the government response statement considered (where available) input from Indigenous communities and organizations, stakeholders, other jurisdictions, and members of the public. It reflects the best available local and scientific knowledge, including Traditional Ecological Knowledge where it has been shared by communities, as appropriate, and may be adapted if new information becomes available. In implementing the actions in the response statement, the ESA allows the Ministry to determine what is feasible, taking into account social and economic factors.

The Recovery Strategy for the Blunt-lobed Woodsia (*Woodsia obtusa*) in Ontario was completed on June 15, 2017.

Blunt-lobed Woodsia is a small to medium-sized perennial fern with a straw-coloured leaf stalk, and blunt, rounded leaflets and leaflet lobes. The leaves (fronds) may reach up to 60 cm in length and usually have 8 to 17 pairs of leaflets.

Protecting and Recovering Blunt-lobed Woodsia

Blunt-lobed Woodsia is listed as an endangered species under the ESA, which protects both the plant and its habitat. The ESA prohibits harm or harassment of the species and damage or destruction of its habitat without authorization. Such authorization would require that conditions established by the Ministry be met.

The global distribution of Blunt-lobed Woodsia extends from Texas and northern Florida north to northern Michigan, and east to Ontario, Québec and northeastern New England. Generally, it is a common species in the northeastern United States, becoming rare in Michigan, Vermont, New Hampshire and Maine. It is estimated that less than 1% of the species' global range occurs in Canada, and no known Canadian populations exist more than 100 km from the U.S. border. There are eight known populations of Blunt-lobed Woodsia in Canada, all of which are found in the Great Lakes – St. Lawrence Forest Regions of Ontario and Québec. The historical distribution and abundance of the species in Ontario is unknown.

Provincially, there are four populations of Blunt-lobed Woodsia in eastern Ontario found along the Frontenac Axis at the eastern edge of the Precambrian Shield at the following sites: Frontenac Provincial Park, Westport Sand Lake Area of Natural and Scientific Interest (ANSI), Crown land along the Rideau Trail near Westport, and Foley Mountain Conservation Area. In 2005, the population abundance for all Canadian populations was estimated to be 1,322 individuals, which includes 857 individuals from the four populations in Ontario. Based on the most recent population estimates in 2005, two of the four Ontario populations have less than 100 stems of mature individuals. The other two populations, Westport Sand Lake ANSI and Foley Mountain Conservation Area, have approximately 500 and over 200 stems respectively. The Ontario population is disjunct from the rest of the North American distribution and as a result, may be adapted to more extreme conditions.

In Ontario, Blunt-lobed Woodsia grows on treed, south-facing, calcium-rich, rocky outcrops under warm conditions and in areas with a sloping mass of loose rocks at the base of a cliff (talus), dominated by Red Oak (*Quercus rubra*), and White Oak (*Quercus alba*), mixed with Eastern Red Cedar (*Juniperus virginiana*), Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Ironwood (*Ostrya virginiana*) and other tree species which provide canopy cover. Blunt-lobed Woodsia gametophytes (the sexual life stage) require the shade from this cover to survive; the sporophytes (the spore-producing life stage), however, thrive under higher light levels and in areas where shading from the canopy is minimal. Therefore, the species is

able to establish only in a combination of these conditions, between areas of vegetation cover that are best for these two life stages. Both stages require water, especially sporophytes for recruitment. Recent research suggests that Blunt-lobed Woodsia may also be limited by their dispersal abilities.

In Ontario, the spread of Common Buckthorn (*Rhamnus cathartica*) is the main threat to Blunt-lobed Woodsia. This invasive species is found at the Westport Sand Lake site, the site that supports the largest population in Canada. It affects Blunt-lobed Woodsia by decreasing light levels in the understory and may also affect the species through below-ground competition or the production and release of biochemicals that influence the germination, growth, survival, and reproduction of other organisms. Brush clearing and tree removal open the canopy, which enables the spread and establishment of Common Buckthorn. Habitat loss and degradation due to residential construction or landscaping and recreational activities are also threats to the species, but these are less immediate as no sites appear to have been drastically modified in recent years. With the exception of the Westport Sand Lake site, the plants are found on steep rock faces that are unsuitable for most types of development. However, tree removal and garbage dumping have occurred at the Westport Sand Lake site. Further studies are required to confirm whether tree removal, dumping of garbage, or recreational activities (e.g., hiking) have the potential to significantly impact the species or its habitat at sites where the terrain is suitable for such activities.

Given the microhabitat requirements of the species and the fact that it occurs in Ontario at the northern extent of its range, Blunt-lobed Woodsia will likely always be vulnerable to natural and human-related stressors. Previous research finalized in 2010 by M. Wild has suggested that the survival of sporophytes was linked to high levels of light and low amounts of leaf litter. The techniques and results from this research may also help inform future recovery efforts for the species.

Areas of Blunt-lobed Woodsia habitat at existing sites that have been degraded may be restorable through habitat management (e.g., invasive species management). However, given that two of the four Blunt-lobed Woodsia Ontario populations have low numbers of individual plants, invasive species management may not be enough to ensure the persistence of the species at these sites. As a result, approaches to recovery will focus on managing habitat-related threats at existing sites, increasing knowledge related to the species and population trends, increasing public awareness of the species, and investigating the feasibility of augmenting existing populations, in identified and appropriate situations.

Government's Recovery Goal

The government's goal for the recovery of Blunt-lobed Woodsia is to maintain the current distribution in Ontario and enable increases in the abundance of Blunt-lobed Woodsia, where feasible, through habitat management. The government supports investigating the feasibility of augmenting existing populations at sites deemed to be non-viable without additional recovery efforts.

Actions

Protecting and recovering species at risk is a shared responsibility. No single agency or organization has the knowledge, authority or financial resources to protect and recover all of Ontario's species at risk. Successful recovery requires inter-governmental co-operation and the involvement of many individuals, organizations and communities. In developing the government response statement, the Ministry considered what actions are feasible for the government to lead directly and what actions are feasible for the government to support its conservation partners to undertake.

Government-led Actions

To help protect and recover Blunt-lobed Woodsia, the government will directly undertake the following actions:

- Continue to monitor the Blunt-lobed Woodsia population within Frontenac Provincial Park.
- Continue to implement the *Ontario Invasive Species Strategic Plan* to address the invasive species (e.g., Common Buckthorn) that threaten Blunt-lobed Woodsia.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Blunt-lobed Woodsia data to the Ministry's central repository at the Natural Heritage Information Centre.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario.
- Continue to protect Blunt-lobed Woodsia and its habitat through the ESA.
- Support conservation, agency, municipal and industry partners, and Indigenous communities and organizations to undertake activities to protect and recover Blunt-lobed Woodsia. Support will be provided where appropriate through funding, agreements, permits (including conditions) and/or advisory services.
- Encourage collaboration, and establish and communicate annual priority actions for government support in order to reduce duplication of efforts.

Government-supported Actions

The government endorses the following actions as being necessary for the protection and recovery of Blunt-lobed Woodsia. Actions identified as “high” will be given priority consideration for funding under the ESA. Where reasonable, the government will also consider the priority assigned to these actions when reviewing and issuing authorizations under the ESA. Other organizations are encouraged to consider these priorities when developing projects or mitigation plans related to species at risk. The government will focus its support on these high-priority actions over the next five years.

Focus Area: Management and Habitat Protection

Objective: Maintain or improve the quality of habitat available for Blunt-lobed Woodsia, and reduce threats to the species at sites where it exists in Ontario.

Habitat for Blunt-lobed Woodsia exists on private lands, provincially protected lands and Crown land and as a result, a collaborative approach to habitat management and protection is needed to support recovery of the species. Threats to the species vary by site but include invasive species and habitat degradation. While most occupied sites are in protected areas and are visited infrequently, continued land stewardship is important to address threats posed by Common Buckthorn, development, trampling, and the dumping of garbage. While the species may require canopy thinning or other habitat management actions, care should be given to employing methods that do not allow for the further establishment of invasive species (e.g., Common Buckthorn) that may be present. Continued efforts to conserve the quality of habitat at Westport Sand Lake site and Foley Mountain Conservation Area are particularly important given the large number of mature individuals that they support.

Actions:

1. **(High)** Encourage land owners and land managers to work collaboratively to develop, implement and evaluate management plans to maintain or improve the quality of Blunt-lobed Woodsia habitat at existing sites. Plans may include practices deemed to be effective and appropriate, such as:
 - using best management practices to remove invasive plants (e.g., Common Buckthorn) and other vegetation posing a threat to Blunt-lobed Woodsia, monitoring responses to habitat management and evaluating techniques employed; and,

- erecting signage and installing barriers, if necessary, to discourage dumping of garbage and discourage disturbance and trampling in the habitat of the species.
2. As opportunities arise, work with local land owners and community partners to support the securement of habitat of Blunt-Lobed Woodsia through existing land securement and stewardship programs.

Focus Area: Research and Monitoring

Objective: Increase knowledge of existing populations, species' biology and effective habitat management techniques.

It is possible that Blunt-lobed Woodsia populations may have been overlooked previously since it grows at relatively inaccessible sites and can be confused with the much more common Fragile Fern (*Cystopteris fragilis*). Focussed monitoring efforts and surveying in areas of suitable habitat will support an increased understanding of the species' distribution and the overall health of populations. Further research on habitat management techniques will also inform future recovery efforts. Additionally, research completed to determine the viability of populations will inform any future investigations into the feasibility of augmenting identified populations.

Actions:

3. **(High)** Develop and implement a standardized monitoring program to detect changes in and identify:
 - population size and demographics;
 - distribution of the species;
 - health and reproductive success; and,
 - habitat characteristics and threats at all known sites.
4. **(High)** Survey for the presence/absence of additional populations in identified areas with suitable habitat characteristics.
5. Evaluate the effects of habitat management (e.g., canopy thinning) on gametophyte and sporophyte recruitment.
6. Conduct research to complete population viability analyses for the Blunt-lobed Woodsia populations in Ontario and estimate minimum viable population size.
7. Investigate the feasibility of augmenting existing populations of Blunt-lobed Woodsia at sites deemed to be non-viable in the absence of additional recovery efforts.

Focus Area: Awareness

Objective: Increase public awareness of the species, its habitat requirements and opportunities to minimize threats to Blunt-lobed Woodsia.

As the species is found on private and Crown land, and in protected areas, awareness is a key factor in supporting recovery of the species. Increased awareness is the first step to support land owners and land managers in reducing the threats to the species, such as invasive plants and the dumping of garbage. Additionally, given that the species may have been previously overlooked due to potential confusion in identifying it as the more common Fragile Fern, an increased understanding of ways to identify Blunt-lobed Woodsia will support effective observation reporting.

Actions:

8. Promote awareness about Blunt-lobed Woodsia among land owners, land managers and land users by sharing information on:
 - how to identify the species;
 - the species' habitat requirements;
 - protection afforded to the species and its habitat under the ESA; and,
 - actions that can be taken to reduce threats to the species and its habitat.

Implementing Actions

Financial support for the implementation of actions may be available through the Species at Risk Stewardship Program. Conservation partners are encouraged to discuss project proposals related to the actions in this response statement with the Ministry. The Ministry can also advise if any authorizations under the ESA or other legislation may be required to undertake the project.

Implementation of the actions may be subject to changing priorities across the multitude of species at risk, available resources and the capacity of partners to undertake recovery activities. Where appropriate, the implementation of actions for multiple species will be co-ordinated across government response statements.

Reviewing Progress

The ESA requires the Ministry to conduct a review of progress towards protecting and recovering a species not later than five years from the publication of this response statement. The review will help identify if adjustments are needed to achieve the protection and recovery of Blunt-lobed Woodsia.

Acknowledgement

We would like to thank all those who participated in the development of the Recovery Strategy for the Blunt-lobed Woodsia (*Woodsia obtusa*) in Ontario for their dedication to protecting and recovering species at risk.

For additional information:

Visit the species at risk website at ontario.ca/speciesatrisk

Contact your MNRF district office

Contact the Natural Resources Information Centre

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