

Proud Globelet

Ontario Government Response Statement



Photo: Robert Forsyth

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 Government of Ontario 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 government 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 and Knowledge Holders, as appropriate and may be adapted if new information becomes available. In implementing the actions in the response statement, the ESA allows the government to determine what is feasible, taking into account social, cultural and economic factors.

The Recovery Strategy for the Proud Globelet (*Patera pennsylvanica*) in Ontario was completed on December 7, 2018.

Proud Globelet is a terrestrial snail with a yellowish, round shell that ranges from 15 to 20 mm in diameter. It lacks a tooth-like protrusion at the opening of the shell which distinguishes it from other species in its genus.

Protecting and Recovering Proud Globelet

Proud Globelet is listed as an endangered species under the ESA, which protects both the snail 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 Ontario government be met.

Globally, the Proud Globelet occurs in North America, from southwestern Ontario to Iowa and Missouri in the south and Pennsylvania in the east. The only known Canadian population of Proud Globelet occurs in the City of Windsor and represents a very small percentage (0.001%) of the global range. Despite several surveys between 1992 to 2013, no living individuals have ever been documented in the province. Empty, fresh shells were found in Windsor in the Black Oak Heritage Forest in 1992 and 1996, and old, weathered shells were found in 2013 at the same location and in a nearby area that was formerly used as a light industrial site. An unverified historical record also occurs on Bois Blanc Island, Ontario in the Detroit River, but surveys have not been conducted to determine whether the species exists there.

The recent species assessment by the Committee on the Status of Species at Risk in Ontario (COSSARO) and provincial recovery strategy suggest that the species was extant in Ontario, although no live individuals have been documented in the province. Dead shells found in 2013 were estimated to be 5 to 15 years old, indicating the species was present at most 15 years ago from the time the survey was conducted. Currently, it is unclear whether the species is extant in Ontario; however, some areas have not yet been surveyed and additional efforts at existing and/or new locations with potentially suitable habitat would be helpful to confirm the presence of any living individuals.

Proud Globelet is a member of the Polygyridae family, which consists of air-breathing land snails. Very little is known about the biology and habitat requirements of the species throughout its range. In the United States the species has been found in exposed wooded (ravines, hillsides) or forest edge habitat. These types of habitat are believed to play an important role in providing shelter, egg laying and foraging habitat for Proud Globelet. In general, terrestrial snails rely heavily on moist microhabitats, such as soil, leaf litter and logs to provide refuge areas to prevent dehydration or freezing during extended periods of heat, drought or extreme cold. Proximity to exposed hillside or edge habitat also provides snails with exposure to warm and sunny conditions during periods of activity. In temperate regions, snow cover provides important insulation when snails hibernate during the winter months in the soil or under leaf litter. The dispersal ability of Proud Globelet is unknown but is thought to be limited based on the maximum dispersal distance (32 m) measured in other snails in the Polygyridae family.

There are extensive knowledge gaps regarding the diet and reproductive behaviour of Proud Globelet; until species-specific information is available, this information has been inferred from other species in the Polygyridae family of snails. Generally, mating in Polygyridae occurs in the fall or early spring, and individuals lay their eggs in the spring to late summer in humus-rich soil. The eggs hatch about 20 to 60 days later depending on temperature and moisture. The lifespan of Polygyridae is estimated to range between three and five years. The diet of Proud Globelet is unknown but may consist of dead or fresh plant material and fungi based on the diet of other Polygyridae. A greater understanding of the life history traits and habitat requirements specific to the Proud Globelet and populations in Ontario would help support the recovery of the species.

Because no live individuals have ever been collected in Ontario and very little is known about the species, it is difficult to identify the specific causes of decline. Potential threats to the species and its habitat include habitat loss and degradation, soil, water and air pollution including garbage accumulation, and human intrusion and disturbance (i.e., trampling from intensive recreational trail use). Invasive plant species such as Garlic Mustard (*Alliaria petiolata*), non-native earthworm (e.g., genus *Amyntas*) and other introduced gastropod species (e.g., slugs) such as Dusky Arion (*Arion subfuscus*), Grovesnail (*Cepaea nemoralis*) and White Heath Snail (*Xerolenta obvia*) may also negatively affect native snail populations by altering the soil composition, reducing the leaf litter layer and competing for habitat and food resources. Further research on the inter-specific interactions with exotic snails or slugs are needed to determine the impact and severity of this potential threat on the Proud Globelet. Climate change may also pose a threat to Proud Globelet through the increase in temperature and extreme weather events such as droughts or heat waves. Filling knowledge gaps related to the species' physiological tolerances and ability to adapt to changing climate and soil conditions would help to further inform recovery efforts.

The knowledge gaps associated with the Proud Globelet are substantial. As a result, the government supports focussing efforts on determining whether the species is still extant in Ontario and undertaking research fill knowledge gaps related to the species' distribution, biology, habitat requirements and threats. If Proud Globelet is found to be extant, consideration should be given towards minimizing threats and managing the habitat as appropriate. Once further information is available about the species, this information may be used to review and adapt protection and recovery activities and the goal may be re-evaluated.

Government's Recovery Goal

The government's goal for the recovery of Proud Globelet is to support the persistence of the species in Ontario and fill knowledge gaps related to the current state of the species, its habitat and threats in Ontario.

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 cooperation and the involvement of many individuals, organizations and communities. In developing the government response statement, the government 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 Proud Globelet, the government will directly undertake the following actions:

- Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to address the invasive species that may directly threaten the Proud Globelet.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Proud Globelet data to the Ontario's central repository through the citizen science project that they receive data from (i.e., iNaturalist.ca) and directly through the Natural Heritage Information Centre.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario.
- Continue to protect Proud Globelet 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 Proud Globelet. 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.
- Conduct a review of progress toward the protection and recovery of Proud Globelet within five years of the publication of this document.

Government-supported Actions

The government endorses the following actions as being necessary for the protection and recovery of Proud Globelet. Actions identified as “high” may be given priority consideration for funding under the Species at Risk Stewardship Program. 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.

Focus Area: Inventory and Monitoring

Objective: Increase knowledge of Proud Globelet presence in Ontario and if located, improve knowledge of existing populations, their habitat and site-specific threats.

The first step in supporting recovery of Proud Globelet is to determine whether the species is still extant in Ontario. Standardized surveys are required to confirm the presence of the species in areas where shells have been found and to survey in additional areas with suitable habitat. Involvement of volunteers including species experts, naturalists and land stewards should also be encouraged to maximize efforts. If any live individuals are found, monitoring of their status, habitat conditions and site-specific threats will be important to inform future recovery efforts.

Actions:

1. **(High)** Identify areas with potentially suitable habitat for Proud Globelet using modeling techniques and local knowledge to inform survey efforts.
2. **(High)** Develop, implement and promote a standardized survey protocol to survey for the presence/absence of Proud Globelet in Ontario and determine whether the species is currently extant. Surveys should:
 - be supplemented with identification material to accurately distinguish this species from other terrestrial snails; and,
 - prioritize survey efforts in and around areas where shells have previously been found or reported (e.g., Black Oak Heritage Forest, Bois Blanc Island) and in additional areas with suitable habitat.
3. At locations where the species is found to be present, develop and implement a monitoring protocol that includes inventory and monitoring of populations, habitat conditions and site-specific threats.
4. Engage volunteers to participate in surveys for this species to determine its presence or absence including citizen science programs (e.g., iNaturalist).

Focus Area: Research

Objective: Improve knowledge of the Proud Globelet biology, habitat requirements and threats.

Very little is known about the biology, habitat requirements and threats to the Proud Globelet throughout its global range. Further understanding of the life history traits of Proud Globelet such as diet, reproduction, dispersal, interspecific interactions with introduced species and physiological tolerances to changes in climate and soil conditions will be necessary to help inform recovery efforts. Research should be done in collaboration with the United States on extant populations to help identify causes of declines and requirements needed for persistence. Additional research is also needed to identify the extent and severity of potential threats to the species and its habitat, including recreational trail use, pollution, introduced species and climate change, to help inform appropriate management actions.

Actions:

5. If found to be extant, undertake collaborative research to fill knowledge gaps related to the species' distribution, biology, habitat requirements and threats to inform recovery efforts.

Focus Area: Habitat Management and Awareness

Objective: Maintain and improve the habitat for Proud Globelet and increase the level public awareness and engagement in protecting and recovering the species.

If an extant population of Proud Globelet is confirmed in Ontario, efforts should be focused on maintaining and/or improving habitat and minimizing threats. The Proud Globelet may be impacted by several threats including pollution, intensive recreational trail use and introduced species which can damage or destroy existing habitat. As specific habitat and life history requirements for this species are investigated, implementing actions to effectively mitigate and manage habitat will support the protection and recovery of this species. Increasing public awareness of this species and encouraging participation in management will also contribute towards recovery efforts.

Actions:

6. At locations where the species is found to be present, maintain and/or improve habitat by undertaking activities to minimize threats to the species and manage the habitat, as appropriate. Emphasis should be placed on:
 - identifying and mitigating threats affecting the species, such as minimizing impacts from human-caused disturbances (e.g., recreational trail use) and threats posed by introduced species;

- identifying opportunities for habitat creation, restoration and/or enhancement including creating refuge areas to improve available habitat; and,
 - working with partners where the species is found to effectively manage the habitat, where appropriate (e.g., Black Oak Heritage Forest).
7. Develop education and outreach material to promote the awareness of the species at existing locations. Information should include:
- how to identify the species;
 - protection afforded to the species and its habitat under the ESA; and,
 - actions that can be taken to avoid or minimize impacts to the species and its habitat including preventing garbage dumping and trampling.

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 program staff. The Ontario government 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 coordinated across government response statements.

Reviewing Progress

The ESA requires the Ontario government to conduct a review of progress towards protecting and recovering a species no later than the time specified in the species' government response statement, or not later than five years after the government response statement is published if no time is specified. The review will help identify if adjustments are needed to achieve the protection and recovery of Proud Globelet.

Acknowledgement

We would like to thank all those who participated in the development of the Recovery Strategy for the Proud Globelet (*Patera pennsylvanica*) 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 the Ministry of the Environment, Conservation and Parks

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