

# Gillman's Goldenrod

## Ontario Government Response Statement



### 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 Ontario government's legislative commitment to protecting and recovering species at risk and their habitats.

Under the ESA, the government 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.

Generally, 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 considers (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 Indigenous 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 Gillman's Goldenrod (*Solidago gillmanii*) in Ontario was completed on September 6, 2022.

Gillman's Goldenrod is an herbaceous perennial plant that grows to 20-120 cm in height. It has tiny yellow flowers clustered into heads.

## Protecting and Recovering Gillman's Goldenrod

Gillman's Goldenrod 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 or complying with the requirements of a regulatory exemption.

Gillman's Goldenrod is found only along dune shorelines of Lake Michigan and northern Lake Huron in the states of Wisconsin, Michigan, Indiana and in the province of Ontario. It exists in open Great Lakes sand dunes with sparse vegetation and patches of bare sand.

Gillman's Goldenrod is an herbaceous perennial plant in the Aster family (*Asteraceae*). The species grows between 20 to 120 cm tall producing tiny bright yellow flowers clustered in heads from late August to early October. Gillman's Goldenrod can easily be mistaken for Hairy Goldenrod (*S. hispida*) and Bog Goldenrod (*S. uliginosa*), which occur in the same habitat.

There are two extant subpopulations of Gillman's Goldenrod in Canada, all located within Ontario in the Manitoulin Island region. Both extant subpopulations are located on privately owned land along the shoreline of Great Duck Island. Historically, this species was located at Deans Bay on Manitoulin Island, however this population was identified as extirpated prior to 2000. The vegetation community type the species inhabits in Ontario (i.e., Little Bluestem – Long-leaved Reed Grass – Great Lakes Wheat Grass Dune Grassland) is considered provincially imperiled in Ontario. Great Duck Island is classified as a Provincially Significant Life Science Area of Natural and Scientific Interest (ANSI).

Gillman's Goldenrod has been impacted by a decline in habitat quality due to invasion by non-native species including Glandular Baby's-breath (*Gypsophila scorzonerifolia*) and European Common Reed, also known as Invasive Phragmites (*Phragmites australis ssp. australis*). These species may prevent establishment of new Gillman's Goldenrod individuals through competition and by reducing habitat suitability. Climate change, leading to higher water levels, and severe weather with increased wave action may impact Gillman's Goldenrod and its habitat. Specific potential impacts of both invasive species and climate change are currently not well understood. Recreational use of Gillman's Goldenrod habitat by boaters and kayakers could also result in incidental impacts to the species (e.g., through trampling).

There are many knowledge gaps related to Gillman's Goldenrod biology, habitat dynamics and needs, population trends and effects of non-native species and climate change. Given the rarity of the species in Ontario and

the knowledge gaps to be addressed, protection and recovery efforts will focus on maintaining or improving the viability of existing subpopulations. Filling knowledge gaps will improve our understanding of the best ways to minimize threats to the species as well as how to best achieves long-term viability in Ontario.

### **Government's Recovery Goal**

**The government's goal for the recovery of Gillman's Goldenrod is to maintain, or increase where feasible, the current abundance and distribution of both extant subpopulations 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 co-operation 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 Gillman's Goldenrod, the government will directly undertake the following actions:

- Continue to protect Gillman's Goldenrod and its habitat through the ESA.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario (e.g. through Ontario Parks Discovery Program, where appropriate).
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Gillman's Goldenrod data to the Ontario's central repository through the NHIC (Rare species of Ontario) project in iNaturalist or directly through the Natural Heritage Information Centre.
- Continue to support conservation, agency, municipal and industry partners, and Indigenous communities and organizations to undertake activities to protect and recover Gillman's Goldenrod. Support will be provided where appropriate through funding, agreements, permits (including conditions) and/or advisory services.
- Work with all levels of government, communities and sectors to take action on climate change, and to report on progress in reducing greenhouse gas emissions.

- Continue to implement Ontario's *Invasive Species Act* to control the spread of invasive species (i.e., Invasive Phragmites) that threaten Gillman's Goldenrod by prohibiting the importation, deposition, release, breeding/growing, buying, selling, leasing or trading of Invasive Phragmites.
- Continue to implement the *Ontario Invasive Species Strategic Plan* (2012) to address the invasive species (e.g. Invasive Phragmites) that threaten Gillman's Goldenrod and its habitat.
- Conduct a review of progress toward the protection and recovery of Gillman's Goldenrod 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 Gillman's Goldenrod. 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: Habitat Management and Protection

**Objective:** Work collaboratively to support landowners, local municipalities and Indigenous communities in protecting and managing Gillman's Goldenrod habitat and mitigating the threats to the species.

Working in collaboration with private landowners, local municipalities and Indigenous communities will ensure that the best available resources and information are being used to support its protection and recovery. It is important to ensure that the effectiveness of efforts to address threats to the species is monitored so that they can be adapted as necessary.

#### Actions:

1. **(High)** In collaboration with private landowners, municipalities, and Indigenous communities implement best management practices (BMPs) to prevent and mitigate threats to Gillman's Goldenrod and their habitats. Actions may include:
  - i. removal or control of invasive species posing a direct threat to Gillman's Goldenrod or its habitat
  - ii. monitoring the response of the species and its habitat to invasive species control to inform adaptive management
  - iii. erecting barriers and designating walkways to reduce trampling by land users

- iv. posting informative signage in and around dune habitat areas used by the species on the sensitive nature of the ecosystems, the importance of limiting disturbance, and basic information on Gillman's Goldenrod
  - v. implementing additional best management practices as new information becomes available through research and monitoring efforts
2. As opportunities arise, support the securement of Gillman's Goldenrod habitat that exists on privately owned lands through existing land securement and stewardship programs.

**Focus Area: Research and Monitoring**

**Objective:** Increase knowledge about the biology of Gillman's Goldenrod, including population dynamics.

Population monitoring will reveal trends over time and allow the effects of recovery actions to be evaluated. Knowledge gaps, such as specific habitat requirements, site-specific threats, and the role of specific habitat management techniques, should also be addressed to help better inform the implementation of recovery actions for this species. Given the presence of Gillman's Goldenrod on privately owned lands, collaboration with landowners will be required to fill these knowledge gaps.

**Actions:**

3. **(High)** Develop and work collaboratively to implement a standardized survey and monitoring program for Gillman's Goldenrod. The monitoring protocol should be developed to gather information about population ecology that includes methods of evaluating:
- i. abundance of plants
  - ii. rates of reproduction and mortality
  - iii. seed bank dynamics and longevity
  - iv. vegetation community composition and diversity
  - v. soil and hydrological conditions
  - vi. the presence and impacts of threats, including potential threats
4. **(High)** Investigate the viability of Gillman's Goldenrod populations in Ontario and estimate the minimum viable population size and extirpation thresholds. Factors to consider include:
- i. population size, genetic diversity, and diversity of plant ages/sizes
  - ii. pollination biology and rates of reproduction
  - iii. seed and seedling ecology
  - iv. the influence of site conditions, including current and predicted threats

5. Utilize information collected through monitoring and research activities to determine the optimal habitat and microhabitat conditions for Gillman's Goldenrod reproduction and survival.
6. Research the species' life history characteristics, response to habitat management activities, and optimal methods of supporting population viability. This may include:
  - i. studying mechanisms of pollination, seed dispersal and conditions for germination, and whether the species exhibits a dormancy period
  - ii. responses to dune dynamics and succession
  - iii. evaluating the effect of different invasive plant management practices on population viability
  - iv. evaluating vulnerability to habitat fragmentation
  - v. evaluating potential approaches for ex-situ seed conservation and plant propagation
  - vi. evaluating management practices that increase seed dispersal and seedling establishment if found to be low

**Focus Area: Awareness**

**Objective:** Increase public awareness of the presence, habitat requirements and threats to Gillman's Goldenrod.

Landowners, land users, municipalities and Indigenous communities all have a vital role to play in reducing threats to Gillman's Goldenrod. By increasing the awareness of the species and its habitat amongst a broader public audience, individuals will be more inclined to take steps to prevent and reduce threats to the species.

**Actions:**

7. Increase awareness among landowners, land users, local municipalities, and Indigenous communities by distributing information on Gillman's Goldenrod, such as:
  - i. how to identify the species and report occurrence information
  - ii. the species' habitat requirements and the sensitivity of dune ecosystems
  - iii. actions individuals can take to minimize threats to the species including mitigating or minimizing habitat loss, invasive species 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 Ministry of the Environment, Conservation and Parks staff. The Ontario government can also provide guidance about the requirements of the ESA, whether an authorization or regulatory exemption may be required for the project and, if so, the authorization types and/or conditional exemptions for which the activity may be eligible.

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 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, which has been identified as five years. The review will help identify if adjustments are needed to achieve the protection and recovery of Gillman's Goldenrod.

## Acknowledgement

We would like to thank all those who participated in the development of the Recovery Strategy and Government Response Statement for the Gillman's Goldenrod (*Solidago gillmanii*) 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](http://ontario.ca/speciesatrisk)  
Contact the Ministry of the Environment, Conservation and Parks  
1-800-565-4923  
TTY 1-855-515-2759  
[www.ontario.ca/environment](http://www.ontario.ca/environment)