

1 **Gillman's Goldenrod**

2 **Ontario Government Response Statement**

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3 **Protecting and Recovering Species at Risk in Ontario**

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

7 Under the ESA, the government must ensure that a recovery strategy is prepared for  
8 each species that is listed as endangered or threatened. A recovery strategy provides  
9 science-based advice to government on what is required to achieve recovery of a  
10 species.

11 Generally, within nine months after a recovery strategy is prepared, the ESA requires  
12 the government to publish a statement summarizing the government's intended actions  
13 and priorities in response to the recovery strategy. The response statement is the  
14 government's policy response to the scientific advice provided in the recovery strategy.  
15 In addition to the strategy, the government response statement considers (where  
16 available) input from Indigenous communities and organizations, stakeholders, other  
17 jurisdictions, and members of the public. It reflects the best available local and scientific  
18 knowledge, including Indigenous Knowledge where it has been shared by communities  
19 and Knowledge Holders, as appropriate, and may be adapted if new information  
20 becomes available. In implementing the actions in the response statement, the ESA  
21 allows the government to determine what is feasible, taking into account social, cultural  
22 and economic factors.

23 The Recovery Strategy for the Gillman's Goldenrod (*Solidago gillmanii*) in Ontario was  
24 completed on September 6, 2022.

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

27 **Protecting and Recovering Gillman's Goldenrod**

28 Gillman's Goldenrod is listed as an endangered species under the ESA, which protects  
29 both the plant and its habitat. The ESA prohibits harm or harassment of the species and

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30 damage or destruction of its habitat without authorization or complying with the  
31 requirements of a regulatory exemption.

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

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

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

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

60 There are many knowledge gaps related to Gillman's Goldenrod biology, habitat  
61 dynamics and needs, population trends and effects of non-native species and climate  
62 change. Given the rarity of the species in Ontario and the knowledge gaps to be  
63 addressed, protection and recovery efforts will focus on maintaining or improving the  
64 viability of existing subpopulations. Filling knowledge gaps will improve our

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65 understanding of the best ways to minimize threats to the species as well as how to  
66 best achieves long-term viability in Ontario.

67 **Government's Recovery Goal**

68 The government's goal for the recovery of Gillman's Goldenrod is to maintain or  
69 improve the long-term viability of both extant subpopulations in Ontario.

70 **Actions**

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

78 **Government-led Actions**

79 To help protect and recover Gillman's Goldenrod, the government will directly undertake  
80 the following actions:

- 81
- Continue to protect Gillman's Goldenrod and its habitat through the ESA.
  - 82 • Undertake communications and outreach to increase public awareness of  
83 species at risk in Ontario (e.g. through Ontario Parks Discovery Program, where  
84 appropriate).
  - 85 • Educate other agencies and authorities involved in planning and environmental  
86 assessment processes on the protection requirements under the ESA.
  - 87 • Encourage the submission of Gillman's Goldenrod data to the Ontario's central  
88 repository through the [NHIC \(Rare species of Ontario\) project in iNaturalist](#) or  
89 directly through the [Natural Heritage Information Centre](#).
  - 90 • Continue to support conservation, agency, municipal and industry partners, and  
91 Indigenous communities and organizations to undertake activities to protect and  
92 recover Gillman's Goldenrod. Support will be provided where appropriate through  
93 funding, agreements, permits (including conditions) and/or advisory services.

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- 94 • Work with all levels of government, communities and sectors to take action on  
95 climate change, and to report on progress in reducing greenhouse gas  
96 emissions.
  
- 97 • Continue to implement Ontario's *Invasive Species Act* to control the spread of  
98 invasive species (i.e., European Reed) that threaten Gillman's Goldenrod by  
99 restricting the importation, deposition, release, breeding/growing, buying, selling,  
100 leasing or trading of European Reed.
  
- 101 • Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to  
102 address the invasive species (e.g. European Reed) that threaten Gillman's  
103 Goldenrod and its habitat.
  
- 104 • Conduct a review of progress toward the protection and recovery of Gillman's  
105 Goldenrod within five years of the publication of this document.

106 **Government-supported Actions**

107 The government endorses the following actions as being necessary for the protection  
108 and recovery of Gillman's Goldenrod. Actions identified as "high" may be given priority  
109 consideration for funding under the Species at Risk Stewardship Program. Where  
110 reasonable, the government will also consider the priority assigned to these actions  
111 when reviewing and issuing authorizations under the ESA. Other organizations are  
112 encouraged to consider these priorities when developing projects or mitigation plans  
113 related to species at risk.

114 <b>Focus Area:</b>	<b>Habitat Management and Protection</b>
115 <b>Objective:</b>	Work collaboratively to support landowners, local municipalities and 116 Indigenous communities in protecting and managing Gillman's 117 Goldenrod habitat and mitigating the threats to the species.

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

123 **Actions:**

- 124 1. **(High)** In collaboration with private landowners, municipalities, and  
125 Indigenous communities implement best management practices (BMPs)

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- 126 to prevent and mitigate threats to Gillman's Goldenrod and their habitats.  
127 Actions may include:
- 128 i. removal or control of invasive species posing a direct threat to
  - 129 Gillman's Goldenrod or its habitat
  - 130 ii. monitoring the response of the species and its habitat to invasive
  - 131 species control to inform adaptive management
  - 132 iii. erecting barriers and designating walkways to reduce trampling by
  - 133 land users
  - 134 iv. posting informative signage in and around dune habitat areas used
  - 135 by the species on the sensitive nature of the ecosystems, the
  - 136 importance of limiting disturbance, and basic information on
  - 137 Gillman's Goldenrod
  - 138 v. implementing additional best management practices as new
  - 139 information becomes available through research and monitoring
  - 140 efforts
- 141 2. As opportunities arise, support the securement of Gillman's Goldenrod  
142 habitat that exists on privately owned lands through existing land  
143 securement and stewardship programs.

144	<b>Focus Area:</b>	<b>Research and Monitoring</b>
145	Objective:	Increase knowledge about the biology of Gillman's Goldenrod,
146		including population dynamics.

147 A greater understanding of the current population status of Gillman's Goldenrod will  
148 support tracking progress towards and effectiveness of recovery actions and monitor  
149 population trends over time. Knowledge gaps, such as specific habitat requirements,  
150 site-specific threats, and the role of specific habitat management techniques, should  
151 also be addressed to help better inform the implementation of recovery actions for this  
152 species. Given the presence of Gillman's Goldenrod on privately owned lands,  
153 collaboration with landowners will be required to fill these knowledge gaps.

- 154 **Actions:**
- 155 3. **(High)** Develop and work collaboratively to implement a standardized
  - 156 survey and monitoring program for Gillman's Goldenrod. The monitoring
  - 157 protocol should be developed to gather information about population
  - 158 ecology that includes methods of evaluating:
  - 159 i. abundance of plants
  - 160 ii. rates of reproduction and mortality
  - 161 iii. seed bank formation and longevity
  - 162 iv. vegetation community composition and diversity

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- 163 v. soil and hydrological conditions  
164 vi. the presence and impacts of threats, including potential threats  
165 vii. detectability of Gillman's Goldenrod, considering factors such as  
166 flowering rates, and seed bank dynamics
- 167 4. **(High)** Investigate the viability of Gillman's Goldenrod populations in  
168 Ontario and estimate the minimum viable population size and extirpation  
169 thresholds. Factors to consider include:
- 170 i. population size, genetic diversity, and diversity of plant ages/sizes
  - 171 ii. pollination biology and rates of reproduction
  - 172 iii. seed and seedling ecology
  - 173 iv. the influence of site conditions, including current and predicted  
174 threats
- 175 5. Utilize information collected through monitoring and research activities to  
176 determine the optimal habitat and microhabitat conditions for Gillman's  
177 Goldenrod reproduction and survival.
- 178 6. Research the species' life history characteristics, response to habitat  
179 management activities, and optimal methods of supporting population  
180 viability. This may include:
- 181 i. studying mechanisms of pollination, seed dispersal and conditions for  
182 germination, and whether the species exhibits a dormancy period
  - 183 ii. responses to dune dynamics and succession
  - 184 iii. evaluating the effect of different invasive plant management practices  
185 on population viability
  - 186 iv. evaluating vulnerability to habitat fragmentation
  - 187 v. evaluating potential approaches for ex-situ seed conservation and  
188 plant propagation
  - 189 vi. evaluating management practices that increase seed dispersal and  
190 seedling establishment if found to be low

191	<b>Focus Area:</b>	<b>Awareness</b>
192	Objective:	Increase public awareness of the presence, habitat requirements 193 and threats to Gillman's Goldenrod.

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

198 **Actions:**

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- 199           7. Increase awareness among landowners, land users, local municipalities,  
200           and Indigenous communities by distributing information on Gillman's  
201           Goldenrod, such as:  
202           i. how to identify the species and report occurrence information  
203           ii. the species' habitat requirements and the sensitivity of dune  
204           ecosystems  
205           iii. actions individuals can take to minimize threats to the species  
206           including mitigating or minimizing habitat loss, invasive species and  
207           trampling

208   **Implementing Actions**

209   Financial support for the implementation of actions may be available through the  
210   Species at Risk Stewardship Program. Conservation partners are encouraged to  
211   discuss project proposals related to the actions in this response statement with Ministry  
212   of the Environment, Conservation and Parks staff. The Ontario government can also  
213   provide guidance about the requirement of the ESA, whether an authorization or  
214   regulatory exemption may be required for the project and, if so, the authorization types  
215   and/or conditional exemptions for which the activity may be eligible.

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

220   **Reviewing Progress**

221   The ESA requires the Ontario government to conduct a review of progress towards  
222   protecting and recovering a species no later than the time specified in the species'  
223   government response statement, which has been identified as five years. The review  
224   will help identify if adjustments are needed to achieve the protection and recovery of  
225   Gillman's Goldenrod.

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226 **Acknowledgement**

227 We would like to thank all those who participated in the development of the Recovery  
228 Strategy and Government Response Statement for the Gillman's Goldenrod (*Solidago*  
229 *gillmanii*) in Ontario for their dedication to protecting and recovering species at risk.

230 **For Additional Information:**

231 Visit the species at risk website at [ontario.ca/speciesatrisk](http://ontario.ca/speciesatrisk)  
232 Contact the Ministry of the Environment, Conservation and Parks  
233 1-800-565-4923  
234 TTY 1-855-515-2759  
235 [www.ontario.ca/environment](http://www.ontario.ca/environment)