

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

1 **Small-flowered Lipocarpha**

2 **Ontario Government Response Statement**

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 Government of Ontario's legislative
6 commitment to protecting and recovering species at risk and their habitats.

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

11 Within nine months after a recovery strategy is prepared, the ESA requires the
12 government to publish a statement summarizing the government's intended actions and
13 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 considered (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 Traditional Ecological Knowledge where it has been shared by
19 communities and Knowledge Holders, as appropriate and may be adapted if new
20 information becomes available. In implementing the actions in the response statement,
21 the ESA allows the government to determine what is feasible, taking into account social,
22 cultural and economic factors.

23 The [Recovery Strategy for the Small-flowered Lipocarpha \(*Lipocarpha micrantha*\) in](#)
24 [Ontario](#) was completed on July 22, 2019.

25 Small-flowered Lipocarpha is a herbaceous annual sedge that grows in dense tufts. The
26 curved stems reach a maximum length of 20 centimetres (cm) and produce small, green
27 flowers in a dense, oval spike. The small size of this sedge makes it resemble the
28 seedlings of other sedge species.

29 **Protecting and Recovering Small-flowered Lipocarpha**

30 Small-flowered Lipocarpha is listed as a threatened species under the ESA, which
31 protects both the plant and its habitat. The ESA prohibits harm or harassment of the

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

32 species and damage or destruction of its habitat without authorization. Such
33 authorization would require that conditions established by the Ontario government be
34 met.

35 Globally, Small-flowered Lipocarpha is found in South, Central, and North America, with
36 disjunct populations in the Galapagos Islands and Africa. In North America the species
37 ranges from southern Canada to southern Mexico. It is densely distributed at the
38 national scale in the central United States from Indiana to Missouri and Nebraska, and
39 also across most of Florida. It is more sparsely distributed in the Northeast, parts of the
40 Southeast, and the Southwest, extending as far north as the state of Washington.

41 In Canada, Small-flowered Lipocarpha occurs in southern British Columbia, and in both
42 northwestern and southwestern Ontario. There are 11 extant populations in Ontario, all
43 of which occur in the northwest of the province on the shores of Rainy Lake, Lake of the
44 Woods, and Tide Lake. These northwestern populations were all last observed between
45 2000 and 2003. There is also one population in Essex County near Holiday Beach that
46 has not been observed since 1987. Although it was not located during targeted search
47 efforts in 2001, it remains possible the viable seeds are present within the sediment (i.e.
48 seed bank) at this location. An additional population documented along the Detroit River
49 was last observed in 1901 and has been classified as extirpated.

50 Small-flowered Lipocarpha is a small sedge that grows in tufts on sandy substrates,
51 sometimes mixed with gravel and cobbles, close to large waterbodies. Although it can
52 occasionally be found up to 160 m from the water's edge it is typically found on open
53 seasonally flooded beach zones of sand dunes, and likely occurs within the seed bank
54 in adjacent areas that are more frequently flooded. In Ontario the community types
55 where it occurs are sand or gravel beach, sand flats, sand dunes, and marsh.

56 The plant requires regularly fluctuating water levels to maintain suitable habitat
57 conditions for growth. High water events help to prevent the establishment of terrestrial
58 plants and maintain open, sandy habitat for the species. During these events,
59 submerged seeds of Small-flowered Lipocarpha stay dormant in the substrate and may
60 remain viable under water for more than 45 years. When water levels recede, the seeds
61 of Small-flowered Lipocarpha germinate and new plants are established. Further
62 information is needed to characterize the conditions most suitable for growth of Small-
63 flowered Lipocarpha in Ontario. The existing provincial populations have not been
64 monitored or studied in more than 15 years, and it is unknown how current conditions
65 have affected the existing populations and available habitat.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

66 Past monitoring of Small-flowered Lipocarpha in Ontario and more recent studies
67 elsewhere have shown that due to the highly specific habitat requirements of this
68 species, it is very susceptible to changes in growing conditions. Given this sensitivity,
69 both the species and its habitat are impacted by water management and flood control
70 activities. Management of water levels for navigation, hydro-electric power, and human
71 safety can degrade habitat by preventing the seasonal flooding needed to maintain
72 appropriate habitat types, or by permanently submerging seeds and preventing
73 germination. Efforts have been made on Rainy Lake since 2000 to restore a more
74 natural water management regime, but the impact of these changes on the species has
75 not been assessed. Alterations to the shoreline through localized activities, such as
76 residential development, flood protection works, and habitat enhancement activities for
77 other species, may also decrease available habitat or cause habitat to become
78 unsuitable.

79 Other potential threats to this species include establishment of invasive species such as
80 European Common Reed (*Phragmites australis australis*), and disturbance from
81 recreational activities. Small-flowered Lipocarpha is sensitive to competition from other
82 plants and may easily be crowded out of sites where the dense-growing European
83 Common Reed establishes. The small sedge may also be easily trampled or damaged
84 by heavy use of the shoreline areas in which the plant is found.

85 Further research is required to gain a better understanding of the current status of each
86 population and population dynamics over the long-term, to evaluate the impacts of
87 changes to the water management regime over the past 15 years, to identify factors
88 limiting germination and establishment of seedlings, and to identify the optimal methods
89 for maintaining suitable habitat. Research is needed to better characterize the species
90 habitat needs, and evaluate the effects of various water level management approaches
91 on populations over time. Additionally, efforts are required to determine whether viable
92 seeds are present at Holiday Beach which may have the potential to re-colonize the
93 site.

94 Small-flowered Lipocarpha establishment and survival in Ontario appears to be limited
95 by habitat suitability and the associated maintenance of suitable habitat through water
96 management regimes that replicate natural processes. As a result, recovery efforts for
97 Small-flowered Lipocarpha will focus on maintaining the existing populations and
98 encouraging water level management that supports long-term survival. The government
99 supports recovery actions for Small-flowered Lipocarpha that increase knowledge of the
100 species, improve understanding of habitat needs, evaluate threat management
101 approaches, improve existing habitat, and promote the education and participation of

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

102 agencies and members of the public that may use, own, or manage lands containing the
103 species.

Government's Recovery Goal

104 The government's goal for the recovery of Small-flowered Lipocarpha is to maintain the
105 species at extant Ontario locations and to enable natural increases at extant and
106 historic sites by working collaboratively to better understand and mitigate the existing
107 threats.
108

Actions

109 Protecting and recovering species at risk is a shared responsibility. No single agency or
110 organization has the knowledge, authority or financial resources to protect and recover
111 all of Ontario's species at risk. Successful recovery requires inter-governmental co-
112 operation and the involvement of many individuals, organizations and communities. In
113 developing the government response statement, the government considered what
114 actions are feasible for the government to lead directly and what actions are feasible for
115 the government to support its conservation partners to undertake.
116

Government-led Actions

117 To help protect and recover Small-flowered Lipocarpha, the government will directly
118 undertake the following actions:
119

- 120 • Collaborate with appropriate water control organizations (i.e., International Joint
121 Commission, International Lake of the Woods Control Board and International
122 Rainy-Lake of the Woods Watershed Board) to provide input into water
123 management planning in the areas where Small-flowered Lipocarpha is found.
- 124 • Continue to ensure that management strategies on Crown land consider Small-
125 flowered Lipocarpha habitat where appropriate.
- 126 • Through provincial direction for Crown forestry practices, continue to mitigate or
127 avoid harm to Small-flowered Lipocarpha and its habitat in areas occupied by the
128 species.
- 129 • Consistent with the *Interim Park Management Statement for Sandpoint Island*
130 *Provincial Park (2012)* continue to monitor and manage habitat in provincial parks
131 and protected areas.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

- 132 • Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to
133 address the invasive species (e.g. European Common Reed) that threaten Small-
134 flowered Lipocarpha.

- 135 • Continue to implement Ontario's *Invasive Species Act* to control the spread of
136 invasive species (i.e., European Common Reed) that threaten Small-flowered
137 Lipocarpha by restricting the importation, deposition, release, breeding/growing,
138 buying, selling, leasing or trading of European Common Reed.

- 139 • Educate other agencies and authorities involved in planning and environmental
140 assessment processes on the protection requirements under the ESA.

- 141 • Encourage the submission of Small-flowered Lipocarpha data to the Ontario's
142 central repository through the citizen science projects that they receive data from
143 (i.e., iNaturalist.ca) and directly through the [Natural Heritage Information Centre](#).

- 144 • Undertake communications and outreach to increase public awareness of
145 species at risk in Ontario.

- 146 • Continue to protect Small-flowered Lipocarpha and its habitat through the ESA.

- 147 • Support conservation, agency, municipal and industry partners, and Indigenous
148 communities and organizations to undertake activities to protect and recover
149 Small-flowered Lipocarpha. Support will be provided where appropriate through
150 funding, agreements, permits (including conditions) and/or advisory services.

- 151 • Encourage collaboration, and establish and communicate annual priority actions
152 for government support in order to reduce duplication of efforts.

- 153 • Conduct a review of progress toward the protection and recovery of Small-
154 flowered Lipocarpha within five years of the publication of this document.

155 **Government-supported Actions**

156 The government endorses the following actions as being necessary for the protection
157 and recovery of Small-flowered Lipocarpha. Actions identified as "high" may be given
158 priority consideration for funding under the Species at Risk Stewardship Program.
159 Where reasonable, the government will also consider the priority assigned to these
160 actions when reviewing and issuing authorizations under the ESA. Other organizations
161 are encouraged to consider these priorities when developing projects or mitigation plans
162 related to species at risk.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

163 **Focus Area:** **Survey and Monitoring**
164 **Objective:** Increase knowledge of the status and distribution of Small-flowered
165 Lipocarpha in Ontario.

166 As there have been no actions to document or survey the extant populations of Small-
167 flowered Lipocarpha in more than 15 years it is important to confirm what locations
168 continue to support viable populations. This undertaking will involve developing an
169 approach to monitoring sites that accounts for seasonal/irregular detectability of the
170 plant, and the potential for dormant viable seeds to remain in submerged sediments.
171 The results of these monitoring efforts will help identify what habitat conditions are most
172 necessary for the survival of the species and may provide valuable insights into the
173 effect of different water management regimes on habitat suitability. Collected data may
174 also inform research into population dynamics, and direct restoration efforts to where
175 they are most needed.

176 **Actions:**

- 177 1. **(High)** Confirm the distribution and status of Small-flowered
178 Lipocarpha in Ontario by developing a survey and monitoring
179 program conducted in a manner that may contribute to research
180 actions. Program may consist of:
- 181 ○ surveying known extant population locations , historic
182 population locations, and other areas of potential habitat;
 - 183 ○ documenting detections and non-detections together with
184 relevant site conditions (e.g soil moisture regime, etc.) to
185 help inform detectability research;
 - 186 ○ completing seed bank assays at the Holiday Beach site
187 to determine if viable seeds are present; and
 - 188 ○ monitoring populations with respect to size,
189 demographics, environmental conditions and the
190 presence of threats.
- 191 2. Characterize the habitats in which Small-flowered Lipocarpha is
192 found through classification of occupied sites under the
193 Ecological Land Classification system.

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DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

195 **Focus Area:** **Research**
196 **Objective:** Improve understanding of population dynamics, habitat needs,
197 threats to the species, and methods for managing identified threats.

198 In order to ensure proper management of Small-flowered Lipocarpha and identified
199 threats, it is necessary to gain a more thorough understanding of factors influencing the
200 species in Ontario. Although water management practices have changed in some areas
201 where the species is found, research is needed to evaluate how those changes have
202 influenced populations and what regime may be best for the species. Research is also
203 needed to better understand the biology of the species, how habitat conditions may
204 influence growth and reproduction, and what approaches may be used to effectively
205 address other threats. Filling these knowledge gaps will allow for more fulsome
206 approaches to the recovery of Small-flowered Lipocarpha.

207 **Actions:**

- 208 3. **(High)** Undertake appropriate actions to investigate Small-
209 flowered Lipocarpha population dynamics at the local and
210 landscape scale and impacts from known threats. Related
211 research actions may include:
- 212 ○ evaluating long-term population trends and assessing the
213 influences of water management regime changes;
 - 214 ○ examining the reproductive biology of the species and
215 increasing understanding of seed banking and dispersal;
216 and
 - 217 ○ improving understanding of the species' habitat
218 requirements, including identifying factors or changes
219 that may render a site unsuitable for germination, growth
220 and reproduction.
- 221 4. Evaluate detectability of Small-flowered Lipocarpha plants and
222 seeds under varying conditions to inform monitoring efforts.
- 223 5. Investigate potential threats to the species and methods for
224 mitigating impacts including:
- 225 ○ evaluating impacts to the species from competition with
226 native and non-native vegetation; and
 - 227 ○ identifying suitable best management practices (e.g.
228 invasive plant removal, terrestrial vegetation
229 management) for the habitat in which it is found.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

230 **Focus Area: Management and Habitat Protection**
231 Objective: Maintain or improve the quality of habitat available for Small-
232 flowered Lipocarpha, and where feasible and appropriate,
233 undertake habitat restoration activities.

234 Small-flowered Lipocarpha has specific habitat needs that are typically met in a narrow
235 strip along the water's edge. Its habitat is limited in scope due to these restrictions and
236 requires certain levels of appropriate disturbance. Although nearly all Ontario
237 populations are on publicly managed lands where impacts from development and
238 deliberate habitat alteration are unlikely, broad-scale water management activities,
239 which may impact multiple sites concurrently, can have a significant effect on the
240 persistence of the species. A collaborative approach is needed to effectively implement
241 broadscale measures to maintain suitable habitat where it exists and restore sites
242 where appropriate. On the ground actions, such as invasive species management and
243 site-level restoration may need to be implemented to ensure existing populations are
244 not crowded out by other species. Encouraging an adaptive approach and the use of
245 best management practices by those involved will help support the recovery of the
246 species..

- 247 **Actions:**
- 248 6. **(High)** Collaborate with partners and appropriate organizations
249 to identify and promote adaptive water management regime
250 practices that maintain Small-flowered Lipocarpha habitat.
 - 251 7. Where deemed necessary and where there are willing partners,
252 undertake on-the-ground efforts to restore, maintain or enhance
253 Small-flowered Lipocarpha habitat within Ontario in
254 collaboration with organizations, agencies and interested
255 Indigenous communities and organizations. This may include:
 - 256 ○ implementing habitat restoration at the Holiday Beach
257 site or other suitable sites to restore functional
258 populations if viable seed is found; and
 - 259 ○ developing best management practices for long-term
260 habitat maintenance.
 - 261 8. Work collaboratively with appropriate agencies, land managers,
262 and indigenous communities develop strategies to remove
263 and/or monitor the presence and impacts of invasive plants
264 (e.g., European Common Reed) in areas with or adjacent to
265 populations.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

266 9. Implement approaches to avoid or reduce impacts of
267 recreational activities on Small-flowered Lipocarpha and its
268 habitat where it occurs through the installation of signs, barriers,
269 or other methods.

270 **Focus Area:** **Outreach and Awareness**
271 **Objective:** Increase public awareness of and participation in efforts to
272 minimize threats to Small-flowered Lipocarpha.

273 Although almost all of the existing Small-flowered Lipocarpha populations occur on
274 publicly managed lands, some of the sites where they can be found are in areas that
275 may experience high levels of recreational use, such as those found in Ontario Parks or
276 on Crown Land. If plants are found or re-established at the Holiday Beach location,
277 recreational use of that Conservation Authority may also pose a risk to this small and
278 discrete plant. Therefore, the education and involvement of the public is a key factor in
279 supporting recovery of the species, particularly to help manage the threat of damage
280 occurring incidentally to the species from trampling and foot traffic.

281 **Actions:**
282 10. Promote awareness about Small-flowered Lipocarpha among
283 land owners, land managers and land users by sharing
284 information on:
285 ○ how to identify the species;
286 ○ the species' habitat requirements;
287 ○ protection afforded to the species and its habitat under
288 the ESA; and,
289 ○ actions that can be taken to reduce threats to the species
290 and its habitat (e.g., distributing best management
291 practices for recreational activities to land users).

292 **Implementing Actions**

293 Financial support for the implementation of actions may be available through the
294 Species at Risk Stewardship Program. Conservation partners are encouraged to
295 discuss project proposals related to the actions in this response statement with the
296 Ministry of the Environment, Conservation and Parks staff. The Ontario government can
297 also advise if any authorizations under the ESA or other legislation may be required to
298 undertake the project.

DRAFT Government Response Statement
to the
Recovery Strategy for the Small-flowered Lipocarpha in Ontario

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

303 **Reviewing Progress**

304 The ESA requires the Ontario government to conduct a review of progress towards
305 protecting and recovering a species no later than the time specified in the species'
306 government response statement, or not later than five years after the government
307 response statement is published if no time is specified. The review will help identify if
308 adjustments are needed to achieve the protection and recovery of Small-flowered
309 Lipocarpha.

310 **Acknowledgement**

311 We would like to thank all those who participated in the development of the Recovery
312 Strategy for the Small-flowered Lipocarpha (*Lipocarpha micrantha*) in Ontario for their
313 dedication to protecting and recovering species at risk.

314 **For Additional Information:**

315 Visit the species at risk website at ontario.ca/speciesatrisk
316 Contact the Ministry of the Environment, Conservation and Parks
317 1-800-565-4923
318 TTY 1-855-515-2759
319 www.ontario.ca/environment
320