

DRAFT Government Response Statement
to the
Recovery Strategy for the Spiny Softshell in Ontario

1 **Spiny Softshell**

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 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 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 Spiny Softshell \(*Apalone spinifera*\) in Ontario](#) was
24 completed on December 5, 2019.

25 The Spiny Softshell is a medium to large-sized aquatic turtle with a flat, leathery shell.
26 The species has deeply webbed feet that are well adapted for swimming, a long neck,
27 and an elongated snout. It relies primarily on aquatic habitat and uses terrestrial habitat
28 only for nesting and rare overland movements between bodies of water (e.g., rivers and
29 lakes). Turtles play an important role in Indigenous beliefs and ceremonies.

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31 **Protecting and Recovering Spiny Softshell**

32 The Spiny Softshell is listed as an endangered species under the ESA, which protects
33 both the animal and its habitat. The ESA prohibits harm or harassment of the species
34 and damage or destruction of its habitat without authorization. Such authorization would
35 require that conditions established by the Ontario government be met. In addition to
36 protection under the ESA, Spiny Softshell is also listed under Schedule 9 of the *Fish
37 and Wildlife Conservation Act, 1997* (FWCA) as a Specially Protected Reptile.

38 The Spiny Softshell can be found throughout the eastern half of North America from the
39 Great Lakes south to the Gulf of Mexico and extending into the central and western
40 parts of the United States. In Canada, the species historically occurred throughout the
41 lower Great Lakes/St. Lawrence River basin, from the upper St. Lawrence to lower Lake
42 Huron; including three major rivers and one lake in Quebec. Today, the Canadian
43 distribution of the Spiny Softshell in Canada is limited to a small number of isolated local
44 populations (i.e., sub-populations) scattered throughout the species' historical range.

45 In Ontario, Spiny Softshells occur in southwestern Ontario within coastal areas and in
46 major rivers/tributaries of Lake Erie, Lake St. Clair and Lake Huron. Twelve local
47 populations are considered extant, and 7 local populations (i.e., sub-populations) are
48 considered historical as they have not been recently surveyed. The species is
49 considered extirpated from Lake Ontario and the Ottawa River. However, abundant
50 suitable habitat for the species remains on the Ottawa River near Westmeath. A large
51 number of individuals are found in four main geographic areas: two areas on Lake Erie
52 and two major southwestern Ontario river systems.

53 While the total Ontario population abundance is not fully understood, it is estimated to
54 be at least 900 mature individuals. The 2016 Committee on the Status of Endangered
55 Wildlife in Canada (COSEWIC) report indicates that over the last two decades the
56 number of mature adults in some local populations may have declined as much as 45
57 percent. Many local populations contain small numbers of individuals and ongoing
58 declines are predicted based on current threats.

59 Spiny Softshells depend primarily on aquatic habitat, and terrestrial habitat use is limited
60 to nesting, basking along shorelines and rare movements between adjacent water-
61 bodies. The species is typically associated with larger waterbodies such as rivers or
62 lakes but may also occur in streams, marshes, ponds and wetlands in close proximity to
63 large bodies of water. As the species uses a variety of aquatic habitats to carry out its
64 life processes, it is therefore important that these habitats are linked. Spiny Softshells
65 use vegetated, shallow, muddy areas in rivers and lakes to regulate body temperature,

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66 hibernate in deep pools within the stream, river, or lake where they spend the majority
67 of the time during the active season, and nest on sand beaches, sand/gravel bars.
68 Spiny Softshells are primarily carnivorous, feeding mainly on live or dead crayfish,
69 insects, and fish. Important foraging areas are riffles, creeks, inlets, muddy/sandy areas
70 and vegetated bays.

71 Spiny Softshells are long-lived, with some individuals living for more than 50 years.
72 However, individuals do not reach sexual maturity until they are at least 12 to 15 years
73 of age, and nest and hatchling survival rates are extremely low. These life history
74 characteristics make the species highly sensitive to losses from additive adult mortality,
75 and even slight increases in annual adult mortality can result in long-term population
76 declines. The life cycle includes a long hibernation period and a short active growing
77 season. Females typically deposit a single clutch of 12 to 18 eggs annually in June or
78 July, but some females lay two clutches in one year. One study in a protected area in
79 Ontario suggests the clutch size can be as high as 43 eggs.

80 As a highly aquatic species, the loss or alteration of shoreline and aquatic habitats from
81 rural and urban development or the construction and maintenance of roads, bridges and
82 dams are significant threats to Spiny Softshell. In many areas, shorelines are reinforced
83 to prevent erosion using metal, concrete walls, or rip-rap (i.e., stone walls). This
84 hardening of the shoreline reduces the access and availability of nesting, foraging, and
85 basking habitat. Dredging poses a direct threat of injury or mortality to turtles and can
86 also impact the species habitat, including important hibernation sites.

87 Water control structures such as dams and locks can restrict the movement of turtles in
88 aquatic environments by creating barriers. Water control operations also affect Spiny
89 Softshell habitat by altering upstream and downstream water levels, sediment transport,
90 the temperature regime, and oxygen levels which may all affect the habitat suitability of
91 hibernating, nesting, basking and foraging habitat. Fluctuating water levels due to water
92 control structures can also directly impact Spiny Softshell as increased water levels
93 during spring and summer can flood nests and decreased water levels during the winter
94 may lead to the freezing and mortality of hibernating turtles.

95 Other significant threats include accidental injury and mortality from boat collisions,
96 commercial and recreational fishing by-catch, the illegal collection of Spiny Softshell for
97 pet, food or traditional medicines trades, and the invasion of non-native and invasive
98 species (e.g., European Reed, also known as *Phragmites (Phragmites australis ssp.*
99 *australis)*) that reduces the availability of open areas for nesting and alters the
100 temperature regimes at the nesting site. Unsustainably high levels of nest predation
101 from raccoons (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum

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102 (*Didelphis virginiana*), red fox (*Vulpes vulpes*), American Mink (*Neovison vison*) and
103 coyotes (*Canis latrans*) also pose a serious threat to some local populations, effectively
104 eliminating recruitment. Trampling by livestock can have significant localized impacts,
105 including damage to nests, as well as injury or mortality of nesting females. Road injury
106 and mortality in the proximity of dam structures has also been identified as a threat.

107 Disturbance from human activities (e.g., disturbance on sandy beaches), pollution and
108 climate change also impact the species, although these impacts are poorly understood.
109 Changes in patterns of precipitation, water levels, and extreme weather caused by
110 climate change may also be limiting Spiny Softshell by changing habitat availability
111 (e.g., flooding of nests along shorelines), although the extent of the impact is unclear.

112 Although large amounts of previously suitable habitat have now been altered, suitable
113 habitat remains available within the species' range and more could be made available
114 through mitigating threats and maintaining and restoring habitat (e.g., shorelines and
115 nesting habitat) to better increase the viability of local populations and improve
116 connectivity. Maintaining habitat connectivity will help enable the species to maintain
117 gene flow and naturally colonize areas where they formerly occurred or where there is
118 suitable habitat adjacent to occupied sites. Management approaches that reduce nest
119 predation and improve recruitment, including head-starting (a conservation technique in
120 which young turtles or eggs are reared in captivity until they attain a larger size prior to
121 release into the wild) may be warranted to support the long-term viability of some local
122 populations. Further research is needed to determine when and where these techniques
123 may be necessary and feasible to support the recovery of the species. Improving
124 knowledge of species distribution, population viability and trends, biology, habitat use,
125 and threats will help determine where recovery efforts are best focused. Raising
126 awareness of how to reduce threats to the species and promoting local stewardship will
127 help engage the public in protection and recovery efforts for the species and its habitat.
128 Given the threat of illegal collection, caution should be exercised when sharing
129 information to support recovery actions to ensure risk to the species is not increased.

Government's Recovery Goal

130 The government's goal for the recovery of Spiny Softshell is to support the long-term
131 viability of existing local populations and, where biologically and technically feasible,
132 support increases in the distribution and abundance of the species by managing and
133 restoring the species' habitat, improving habitat connectivity between local populations,
134 reducing threats, and improving recruitment.
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Actions

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

144 **Government-led Actions**

145 To help protect and recover Spiny Softshell, the government will directly undertake the
146 following actions:

- 147 • Continue to protect Spiny Softshell and its habitat through the ESA.
- 148 • Undertake communications and outreach to increase public awareness of
149 species at risk in Ontario (e.g., through Ontario Parks Discovery Program, where
150 appropriate).
- 151 • Continue to monitor populations and mitigate threats to Spiny Softshell and its
152 habitat in provincially protected areas, where feasible and appropriate.
- 153 • Educate other agencies and authorities involved in planning and environmental
154 assessment processes on the protection requirements under the ESA.
- 155 • Encourage the submission of Spiny Softshell data to Ontario's central repository
156 (Natural Heritage Information Centre, NHIC) through the [NHIC \(Rare species of
157 Ontario\) project in iNaturalist](#) or directly through the [NHIC](#).
- 158 • Continue to support conservation, agency, municipal and industry partners, and
159 Indigenous communities and organizations to undertake activities to protect and
160 recover Spiny Softshell. Support will be provided where appropriate through
161 funding, agreements, permits (including conditions) and/or advisory services
- 162 • Continue to implement Ontario's *Invasive Species Act* to control the spread of
163 invasive species (e.g., European Reed also known as Phragmites) that threaten
164 Spiny Softshell by restricting the importation, deposition, release,
165 breeding/growing, buying, selling, leasing or trading of invasive species.
- 166 • Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to
167 address the invasive species (e.g., European Reed) that threaten Spiny Softshell.

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- Conduct a review of progress toward the protection and recovery of Spiny Softshell within ten years of the publication of this document. Additional time is necessary to complete the review of progress for this species given its slow rate of reproduction and the length of time expected to complete and measure progress towards implementing recovery actions.

173 **Government-supported Actions**

174 The government endorses the following actions as being necessary for the protection
175 and recovery of Spiny Softshell. Actions identified as “high” may be given priority
176 consideration for funding under the Species at Risk Stewardship Program. Where
177 reasonable, the government will also consider the priority assigned to these actions
178 when reviewing and issuing authorizations under the ESA. Other organizations are
179 encouraged to consider these priorities when developing projects or mitigation plans
180 related to species at risk.

181	Focus Area:	Management
182	Objective:	Maintain or improve the quality of habitat, increase connectivity, 183 reduce threats, and improve recruitment.

184 The majority of Spiny Softshell populations are found in an urbanized landscape where
185 development pressure continues to increase. As such, improving habitat suitability and
186 connectivity is a key component of landscape-level, habitat-focussed recovery actions
187 for this species. As land ownership varies across the species’ distribution, and it is
188 largely found in urban areas and along shorelines on private land, a collaborative
189 approach to habitat management is critical to the protection and recovery of this
190 species. Coordinated threat mitigation approaches, particularly site-specific mitigation
191 plans, are critical to compliment habitat management activities and ensure that local
192 populations remain viable over the long-term. Where actions to improve recruitment
193 (e.g., nest caging and head-starting) are deemed necessary, implementation should
194 occur concurrently with the mitigation of existing threats and the protection,
195 management and/or restoration of required habitat for the long-term survival of the local
196 population. Threat mitigation and habitat management techniques should be conducted
197 in a manner that does not increase risk to the species and adheres to best science
198 advice and stewardship and or/recovery approaches developed by qualified
199 professionals and/or organizations.

200 **Actions:**

- 201 1. **(High)** Work collaboratively with land owners, land managers,
202 stakeholders, partners, and Indigenous communities and organizations, to

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- 203 develop and implement techniques and best management practices (BMP)
204 to reduce threats to the species and their habitat. Actions should be
205 evaluated and adapted based on best available information and may
206 include:
- 207 ○ alternatives to traditional development, such as using natural forms of
208 shoreline stabilization rather than hardening shorelines with “rip-rap” or
209 stone walls, where appropriate and feasible;
 - 210 ○ mitigation techniques to address new road construction and road
211 mortality, including constructing turtle eco-passages (e.g., fencing and
212 tunnels), identifying and addressing existing road mortality hotspots,
213 and using alternatives to traditional roadway construction techniques
214 in sensitive habitats where possible (e.g., bridges over wetlands),
215 where appropriate and feasible;
 - 216 ○ stewardship activities to reduce disturbance to the species and their
217 habitat (e.g., targeted signage to address local threats);
 - 218 ○ encouraging and implementing techniques to reduce fishing by-catch;
 - 219 ○ controlling invasive species in areas where they pose a direct threat to
220 Spiny Softshell; and,
 - 221 ○ working with local municipalities, conservation authorities and other
222 relevant agencies to implement water management plans that
223 minimize impacts to the species and its habitat, particularly with
224 respect to flooding of nesting habitat during the nesting and incubation
225 period and water drawdowns during the hibernation period.
- 226 2. **(High)** Work with local landowners, land managers, stakeholders,
227 organizations, government agencies, and Indigenous communities and
228 organizations to develop and implement coordinated habitat management
229 plans to increase habitat suitability and connectivity, and create, enhance
230 and restore habitat at priority sites.
- 231 3. Implement, evaluate, adapt and improve techniques to reduce nest
232 predation and improve recruitment, including methods such as nest caging
233 and head-starting in areas where these activities are deemed necessary
234 and appropriate (i.e., recruitment is believed to be insufficient to maintain
235 viable populations).
- 236 4. Work with local land owners, municipalities and community partners to
237 strategically secure Spiny Softshell habitat and encourage long-term
238 protection through existing land securement and stewardship programs
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239 and/or land securement agencies, including land that would support
240 improved habitat connectivity.

241 5. Work collaboratively with relevant government, law enforcement agencies
242 and other partners to develop and implement coordinated strategies to
243 address the threat of illegal collection.

244

245 Focus Area:	Research and Monitoring
246 Objective:	Increase knowledge of population abundance, distribution and 247 trends as well as the species' habitat use and threats.

248 As the species occurs in small, isolated local populations, the systematic monitoring of
249 population abundance is important to understand the status of Spiny Softshell in
250 Ontario, track population trends, and determine local viability. Filling knowledge gaps
251 related to species' biology, population demographics, habitat use, and threats will
252 provide information that is necessary to inform the design and implementation of
253 effective recovery actions. Techniques to improve recruitment (e.g., head-starting) may
254 be required to ensure the long-term viability of some local populations, and the ongoing
255 evaluation of these techniques will allow for a better understanding of how and when to
256 implement them. Spiny Softshell recovery efforts may be further improved by working
257 with interested Indigenous communities and Knowledge Holders to understand
258 Traditional Ecological Knowledge of the species and encourage its integration into
259 collaborative management actions.

260 **Actions:**

261 6. **(High)** Work collaboratively with local landowners, land managers,
262 industry stakeholders, organizations, government agencies, partners and
263 Indigenous communities and organizations to develop and implement a
264 standardized survey and monitoring programs that include:

265 ○ monitoring distribution and abundance of the species at representative
266 sites across its range in Ontario to identify and track changes in
267 population abundance over time;

268 ○ assessing species' presence at sites lacking recent observations
269 (including historical sites and extirpated sites where suitable habitat
270 remains) and refining knowledge of the local and regional distribution
271 of Spiny Softshell in Ontario;

272 ○ monitoring emerging and existing threats to the species; and,

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- 273 ○ encouraging participation in citizen science data collection programs
274 (e.g., iNaturalist).
- 275 7. **(High)** Conduct research to evaluate the effectiveness of threat mitigation
276 techniques, recovery approaches and best management practices,
277 including:
- 278 ○ techniques to mitigate impacts of activities, such as shoreline
279 development and dam construction and operation, on nesting sites;
- 280 ○ approaches for habitat creation, restoration and improvement;
- 281 ○ techniques for salvage and translocation; and,
- 282 ○ techniques for improving recruitment (e.g., nest protection and
283 incubation, head-starting, predator exclusion).
- 284 8. Investigate and monitor the severity and potential impacts of threats to
285 local populations such as invasive species, human-subsidized predators,
286 fishing by-catch, illegal collection, pollution and climate change.
- 287 9. Conduct research on species' biology, ecology, habitat use and genetics
288 where knowledge gaps persist, such as:
- 289 ○ minimum habitat and population requirements to ensure local
290 population viability (e.g., suitable habitat size, number of mature
291 individuals);
- 292 ○ habitat needs and use for various life stages (e.g., nesting, feeding,
293 hibernating);
- 294 ○ population genetics and demographics across the species' range; and,
- 295 ○ effects of changes in precipitation, water levels, and extreme weather
296 on local habitat availability and individual survival (e.g., flooding of
297 nests along shorelines).
- 298 10. As appropriate, encourage the recording, sharing and transfer of
299 Traditional Ecological Knowledge on Spiny Softshell, where it has been
300 shared by communities, to increase knowledge of the species and support
301 future recovery efforts.

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304 **Focus Area: Awareness and Stewardship**
305 Objective: Increase awareness and promote the protection and stewardship of
306 Spiny Softshell and its habitat in Ontario.

307 Spiny Softshell is found in a highly modified landscape and continues to experience a
308 variety of threats associated with intensive human use. As a result, several groups and
309 organizations including land owners, land managers, conservation organizations,
310 partners, and Indigenous communities and organizations all have a role to play in the
311 protection and recovery of the species. Engaging the public on Spiny Softshell recovery
312 and promoting local stewardship through tools such as educational campaigns and
313 targeted social media campaigns also plays an important role in species recovery. Due
314 to the risk of illegal collection of Spiny Softshell, caution to be taken to ensure
315 information sharing to increase awareness is done in a manner that does not increase
316 risk to the species.

317 **Actions:**

- 318 11. Promote public awareness of Spiny Softshell, including its status and
319 protection under the ESA, and engage the public in Spiny Softshell
320 stewardship. This may include:
- 321 ○ developing interactive social media and social marketing campaigns
322 to promote Spiny Softshell stewardship and reduce threats such as
323 accidental mortality and illegal collection. Coordinate with other
324 species at risk turtle initiatives where appropriate;
 - 325 ○ working collaboratively with land owners, land managers,
326 municipalities, the public, and other stakeholders to increase their
327 awareness of Spiny Softshell and how to reduce impacts to the
328 species; and,
 - 329 ○ educating the public on what to do if they encounter an injured turtle
330 or a nest in a high-risk area.

331 **Implementing Actions**

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

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

342 **Reviewing Progress**

343 The ESA requires the Ontario government to conduct a review of progress towards
344 protecting and recovering a species no later than the time specified in the species'
345 government response statement, which has been identified as 10 years in this
346 government response statement. The review will help identify if adjustments are needed
347 to achieve the protection and recovery of Spiny Softshell.

348 **Acknowledgement**

349 We would like to thank all those who participated in the development of Ontario's
350 Recovery Strategy and Government Response Statement for the Spiny Softshell
351 (*Apalone spinifera*) for their dedication to protecting and recovering species at risk.

352 **For Additional Information:**

353 Visit the species at risk website at ontario.ca/speciesatrisk
354 Contact the Ministry of the Environment, Conservation and Parks
355 1-800-565-4923
356 TTY 1-855-515-2759
357 www.ontario.ca/environment
358