

DRAFT Government Response Statement
to the
Recovery Strategy for the Spotted Turtle in Ontario

1 **Spotted Turtle**

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
10 achieve recovery of a species.

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

24 The [Recovery Strategy for the Spotted Turtle \(*Clemmys guttata*\) in Ontario](#) was
25 completed on December 5, 2019.

26 Spotted Turtle is a small freshwater turtle that has a smooth, black shell with
27 scattered yellow-orange spots. It has a distinctive orange spot behind each eye, and
28 its head and limbs are typically black with orange or yellow spots. Turtles play an
29 important role in Indigenous spiritual beliefs and ceremonies.

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31 **Protecting and Recovering Spotted Turtle**

32 Spotted Turtle 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
34 species and damage or destruction of its habitat without authorization. Such
35 authorization would require that conditions established by the Ontario government
36 be met. In addition to protection under the ESA, Spotted Turtle is also listed under
37 Schedule 9 of the *Fish and Wildlife Conservation Act, 1997* (FWCA) as a Specially
38 Protected Reptile.

39 The Spotted Turtle is found in eastern North America and occurs in isolated
40 populations from Michigan, Ontario and Maine in the north to central Florida in the
41 south. In Canada, the species is currently thought to be restricted to Ontario, where
42 it occurs in small, isolated populations throughout southern and central Ontario. A
43 few historic records exist for the province of Quebec; however, as there are no
44 recent records of the species, the presence of Spotted Turtle cannot be confirmed.

45 The total Canadian population of Spotted Turtle was recently estimated at 2,000 to
46 3,000 individuals; however, based on current mortality rates, a projected population
47 decline of 40 percent or more is expected over the next 3 generations
48 (approximately 120 years). Of 109 known occurrences of the species in Ontario, the
49 majority are considered historical (no observations within the last 20 years). The
50 species has been documented as recently extant at only 25 sites in the province. It
51 is challenging to determine whether the species is still present at locations with
52 historical occurrences, as Spotted Turtle can be difficult to survey at low densities.
53 Most the species' local populations (i.e., subpopulations) are believed to contain
54 small numbers of individuals and may be vulnerable to local extirpation.

55 Spotted Turtles require access to a diversity of both aquatic and terrestrial habitat
56 types throughout the year to meet their biological needs. Due to its varied habitat
57 needs, it is important that Spotted Turtle are able to move freely throughout their
58 habitat. Spotted Turtles often use the same path to move between habitats from
59 year to year.

60 Spotted Turtles rely on aquatic habitats for many of their life processes, including
61 hibernation, breeding, foraging, and seasonal movements. Aquatic habitats typically
62 used by the species include shallow wetlands that are rich in organic matter (e.g.,
63 swamps, bogs, fens and marshes), and have also been observed using ponds,
64 creeks, drainage ditches and other aquatic environments. Spotted Turtles hibernate
65 during the winter in shallow, underwater hibernacula, either individually or in groups

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66 and emerge from hibernation in the early spring and aggregate in aquatic habitats to
67 breed. They have been known to return to the same hibernation and breeding areas
68 year after year. Spotted Turtles feed on a variety of items including aquatic insects,
69 fish, tadpoles and salamanders and vegetation.

70 Terrestrial habitats used by Spotted Turtle include shoreline areas, beaches, rock
71 outcrops, upland forests, open fields and meadows. The species uses terrestrial
72 habitats for nesting, regulating body temperature, seasonal movement and in
73 periods of summer inactivity. Spotted Turtles lay their eggs in the spring. Three to
74 seven eggs are typically laid in nests excavated in well-drained soils exposed to full
75 sunlight. During the active season, Spotted Turtles often bask along the water's
76 edge, on vegetation clumps, or under dense vegetation near aquatic habitats in
77 order to take advantage of warm air temperatures. They also use shallow aquatic
78 sites with floating or emergent vegetation to regulate their body temperature. In the
79 summer months, it is common for Spotted Turtles to move into terrestrial
80 environments and become inactive for days to weeks to thermoregulate or because
81 of changes in water depth or food abundance.

82 Spotted Turtles are long-lived, with some individuals potentially living for more than
83 100 years. However, they do not reach sexual maturity until 11 to 15 years of age,
84 produce relatively few eggs, and have very low nest and hatchling survival. These
85 life history characteristics make the species highly sensitive to losses from additive
86 adult mortality, and even slight increases in annual adult mortality can result in long-
87 term population declines.

88 According to the recovery strategy, the most significant threats to Spotted Turtle are
89 mortality on roads and from off-road vehicles, illegal collection, and the introduction
90 and spread of invasive species. Other threats include habitat loss, degradation and
91 fragmentation, human subsidized predators (those that occur in higher abundances
92 resulting from increased food resources from human sources e.g., raccoons
93 (*Procyon lotor*)), pollution, disturbance from human activities, forestry, climate
94 change and natural systems modifications, such as water-level management.

95 Since even slight increases in annual adult mortality can result in chronic declines in
96 turtle populations, road mortality is a serious threat to all turtle species, particularly
97 those that travel overland frequently, like the Spotted Turtle. The use of off-road
98 vehicles can also result in harm due to collisions, as well as damage and destruction
99 of wetland habitats. Roads may also present barriers to movement, and
100 maintenance activities associated with road networks (such as grading or vegetation
101 clearing) may result in negative impacts on Spotted Turtles and their habitat. In

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102 some cases, agricultural activities, such as the use of heavy machinery and
103 trampling by livestock may harm or kill turtles.

104 Many turtle species, including Spotted Turtle, are impacted by illegal collection for
105 use as pets, food and traditional remedies. Their use of communal hibernation
106 areas, mating aggregation sites, and mass emergence from hibernation makes
107 Spotted Turtles particularly susceptible to illegal collection.

108 Since European settlement, land conversion for agriculture and development has
109 been a significant threat to Spotted Turtle in Ontario, eliminating the majority of the
110 species' habitat in the southern part of the province (south of the Precambrian
111 Shield) and restricting remaining populations to small, isolated habitat patches. Land
112 conversion continues to pose a threat to the species, but to a lesser degree than in
113 the past. Infilling or draining of wetlands eliminates turtle habitat, and activities that
114 alter water regimes in wetlands can also result in loss or degradation of aquatic
115 habitat for the species, as well as nesting and basking sites. Furthermore, changes
116 to the water table that occur during hibernation, such as those caused by ditching or
117 drainage activities, can result in mass-mortality of hibernating Spotted Turtles. It is
118 thought that, in some cases, suppression of the natural fire regime can impact the
119 species due to the encroachment of vegetation such as trees and shrubs into
120 wetlands, which causes the habitat to become less suitable for Spotted Turtle. The
121 introduction of exotic plant species can alter the quality or availability of turtle
122 habitat. The European Reed (also known as Phragmites) (*Phragmites australis* ssp.
123 *australis*) has invaded many wetlands and coastal areas and may have resulted in
124 altered habitat conditions. The release of non-native pet turtles, such as the Red-
125 eared Slider (*Trachemys scripta*) can also impact turtles via transmission of disease.

126 The Spotted Turtle is a long-lived species with life-history characteristics that
127 significantly limit its ability to recover from declines. The small and highly
128 fragmented nature of Spotted Turtle populations, particularly in southern Ontario,
129 makes the species particularly vulnerable to local extirpations. As a result of these
130 limitations, actions must occur over a long timeframe in order to successfully
131 recover the species and support the viability of local populations. In some instances,
132 management approaches that reduce nest predation and improve recruitment,
133 including head-starting (a conservation technique in which young turtles or eggs are
134 reared in captivity until they attain a larger size prior to release into the wild), may be
135 warranted to support the long-term viability of some local populations. Mitigating
136 threats and improving habitat availability and connectivity will be key to ensuring the
137 long-term persistence of the species in Ontario. Given the threat of illegal collection,

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138 caution should be exercised when sharing information to support recovery actions to
139 ensure risk to the species is not increased.

140 **Government's Recovery Goal**

141 The government's goal for the recovery of Spotted Turtle is to support the long-term
142 viability of existing local populations and, where biologically and technically feasible,
143 support increases in their distribution and abundance, by mitigating threats,
144 maintaining or increasing suitable habitat, improving habitat connectivity between
145 local populations, and improving recruitment.

146 **Actions**

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

155 **Government-led Actions**

156 To help protect and recover Spotted Turtle, the government will directly undertake
157 the following actions:

- 158
- Continue to protect Spotted Turtle and its habitat through the ESA.

159

 - Undertake communications and outreach to increase public awareness of
160 species at risk in Ontario (e.g., through Ontario Parks Discovery Program,
161 where appropriate).

162

 - Continue to monitor populations and mitigate threats to Spotted Turtle and its
163 habitat in provincially protected areas, where feasible and appropriate.

164

 - Educate other agencies and authorities involved in planning and
165 environmental assessment processes on the protection requirements under
166 the ESA, including appropriate survey techniques.

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- 167 • Encourage the submission of Spotted Turtle data to Ontario’s central
168 repository (Natural Heritage Information Centre, NHIC) through the [NHIC](#)
169 [\(Rare species of Ontario project\) in iNaturalist](#) or directly through the [NHIC](#).

- 170 • Continue to support conservation, agency, municipal and industry partners,
171 and Indigenous communities and organizations to undertake activities to
172 protect and recover Spotted Turtle. Support will be provided where
173 appropriate through funding, agreements, permits (including conditions)
174 and/or advisory services.

- 175 • Continue to implement Ontario’s *Invasive Species Act* to control the spread of
176 invasive species (e.g., European Reed, also known as Phragmites) that
177 threaten Spotted Turtle by restricting the importation, deposition, release,
178 breeding/growing, buying, selling, leasing or trading of invasive species.

- 179 • Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to
180 address the invasive species (e.g., European Reed) that threaten Spotted
181 Turtle.

- 182 • Conduct a review of progress toward the protection and recovery of Spotted
183 Turtle within ten years of the publication of this document. Additional time is
184 necessary to complete the review of progress for this species given its slow
185 rate of reproduction and the length of time expected to complete and
186 measure progress towards implementing recovery actions.

187 **Government-supported Actions**

188 The government endorses the following actions as being necessary for the
189 protection and recovery of Spotted Turtle. Actions identified as “high” may be given
190 priority consideration for funding under the Species at Risk Stewardship Program.
191 Where reasonable, the government will also consider the priority assigned to these
192 actions when reviewing and issuing authorizations under the ESA. Other
193 organizations are encouraged to consider these priorities when developing projects
194 or mitigation plans related to species at risk.

195 Focus Area:	Research and Monitoring
196 Objective:	Increase knowledge of Spotted Turtle distribution, population 197 levels and status as well as biology, habitat use, threats, and 198 recovery techniques.

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199 Efforts to track abundance and evaluate local population viability are important to
200 understanding the status of Spotted Turtle in the province and to identify local
201 populations that may not be viable without further management efforts. As many
202 local populations are thought to be small and may not be viable, recovery
203 techniques to improve recruitment (e.g., head-starting: a conservation technique in
204 which young turtles or eggs are reared in captivity until they attain a larger size prior
205 to release into the wild) may be required to ensure their long-term viability. It is
206 important to evaluate and adapt these techniques in order to improve their success.
207 There are still several knowledge gaps related to the threats impacting Spotted
208 Turtle, as well as the species' biology and ecology. Filling these knowledge gaps will
209 help to direct effective protection and recovery efforts for the species. Recovery
210 efforts for Spotted Turtle may be further improved by working with interested
211 Indigenous communities and Knowledge Holders to understand Traditional
212 Ecological Knowledge of the species and encourage its integration into collaborative
213 management actions. Targeted surveys will also refine our knowledge on the
214 species distribution and population levels especially in areas that are under-
215 surveyed (e.g., historical locations, suitable habitat on the Precambrian Shield).
216 Wherever possible, surveys to determine whether Spotted Turtle are present should
217 be implemented according to the [Survey Protocol for Spotted Turtle in Ontario](#).

218
219

Actions:

- 220 1. **(High)** Evaluate local population viability to determine which
221 populations of Spotted Turtle are declining or may not be viable
222 without management action.
- 223 2. **(High)** Conduct research to determine the effectiveness of threat
224 mitigation techniques, recovery approaches and best management
225 practices, including:
- 226 ○ techniques to mitigate road mortality;
 - 227 ○ approaches for habitat creation, restoration and improvement;
 - 228 ○ strategies to address illegal collection;
 - 229 ○ techniques for salvage and translocation; and
 - 230 ○ techniques for improving recruitment (e.g., nest protection and
231 incubation, head-starting, predator exclusion).
- 232 3. **(High)** Conduct targeted surveys for Spotted Turtle at sites with
233 suitable habitat and/or historical populations to improve knowledge of
234 current distribution and population size of the species.

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- 235 4. Investigate the severity of threats to local populations and document
236 the frequency, extent, and causal certainty of threats.
- 237 5. Conduct research on species' biology, ecology, and habitat use where
238 knowledge gaps persist, such as:
- 239 ○ minimum habitat and population requirements to ensure the
240 viability of local populations (e.g., suitable habitat size, number of
241 mature individuals);
 - 242 ○ habitat needs and uses for various life stages (e.g., adults,
243 hatchlings and juveniles) and biological processes (e.g., nesting,
244 feeding, and hibernation sites);
 - 245 ○ spatial ecology and temporal use of habitat; and,
 - 246 ○ knowledge of species' demography across the species' range,
247 including population size, age composition, sex ratios and
248 minimum viable population size.
- 249 6. Develop and implement a standardized monitoring program at
250 representative sites across Ontario, including the development and
251 implementation of standardized methodologies (e.g., data collection,
252 handling, marking) to assess population and habitat trends across the
253 species' range.
- 254 7. As appropriate, encourage the recording, sharing and transfer of
255 Traditional Ecological Knowledge on Spotted Turtle, where it has been
256 shared by communities, to increase knowledge of the species and
257 support future recovery efforts.
- 258

259 Focus Area:	Management
260 Objective:	Maintain or improve the quality of habitat, increase connectivity 261 and reduce threats, and improve recruitment.

262 The most serious threats to Spotted Turtle are those that involve the removal of
263 adult turtles from the population (either through collection or mortality), making the
264 mitigation of these threats to Spotted Turtle critical to the long-term persistence of
265 the species in Ontario. Where actions to improve recruitment (e.g., nest caging and
266 head-starting) are deemed necessary, implementation should occur concurrently
267 with the mitigation of existing threats and the protection, management and/or
268 restoration of required habitat for the long-term survival of the local population.
269 Actions that improve habitat connectivity between local populations and protect,
270 maintain or improve suitable habitat are also important for Spotted Turtle recovery

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271 as they contribute to improved adult survival and population viability. A collaborative
272 approach to implementing these actions will help to share responsibilities and
273 lessons learned. Threat mitigation and habitat management techniques should be
274 conducted in a manner that does not increase risk to the species. Wherever
275 possible, road mitigation techniques should adhere to best science advice including
276 government guidance.

277 **Actions:**

278 8. **(High)** In collaboration with landowners, land managers, Indigenous
279 communities and organizations, stakeholders and partners, develop,
280 implement and monitor the effectiveness of mitigation techniques to
281 address threats to Spotted Turtles and their habitat. Actions should be
282 adapted based on feasibility and effectiveness and may include
283 implementing and evaluating:

- 284 ○ mitigation techniques to address new road construction and road
285 mortality, including constructing turtle eco-passages (e.g., fencing
286 and tunnels), identifying and addressing existing road mortality
287 hotspots, and using alternatives to traditional roadway construction
288 techniques in sensitive habitats where possible (e.g., bridges over
289 wetlands);
- 290 ○ approaches to reduce disturbance to the species and its habitat
291 (e.g., targeted signage to address local threats); and,
- 292 ○ controlling invasive species that pose a direct threat to Spotted
293 Turtle.

294 9. **(High)** Implement, evaluate, adapt and improve techniques to reduce
295 nest predation and improve recruitment, including methods such as
296 nest caging and head-starting in areas where these activities are
297 deemed necessary and appropriate (i.e., recruitment is believed to be
298 insufficient to maintain viable populations).

299 10. Assess the quantity and quality of suitable habitat available to local
300 populations and identify areas where the amount of suitable habitat
301 may not be sufficient for Spotted Turtle population viability. In
302 collaboration with landowners, land managers, Indigenous
303 communities and organizations, stakeholders and partners, identify
304 and implement actions to increase the quality and quantity of habitat,
305 as appropriate.

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306 11. Work with local land owners, municipalities and community partners
307 to strategically secure Spotted Turtle habitat and encourage long-term
308 protection through existing land securement and stewardship
309 programs and/or land securement agencies, including land that would
310 support improved habitat connectivity.

311 12. Work collaboratively with relevant government and law enforcement
312 agencies and other partners to develop and implement coordinated
313 strategies to address the threat of illegal collection.

314

315	Focus Area:	Stewardship and Awareness
316	Objective:	Increase awareness and promote the protection and
317		stewardship of Spotted Turtle and its habitat in Ontario.

318 Spotted Turtle is found on both public and private lands in Ontario. As a result,
319 several groups and organizations including land owners, land managers, Indigenous
320 communities and organizations, conservation organizations and partners, have a
321 role to play in the protection and recovery of the species. Raising awareness
322 amongst the public, local landowners and organizations of the Spotted Turtle, as
323 well as how to reduce threats to the species, fill knowledge gaps, and maintain or
324 improve habitat will help promote and encourage actions to protect and recover
325 Spotted Turtle in Ontario. Due to the risk of illegal collection of Spotted Turtles,
326 caution should be taken to ensure information sharing to increase awareness is
327 done in a manner that does not increase risk to the species. In addition, road sign
328 placement should follow all necessary protocols (e.g., Ministry of Transportation
329 protocols for wildlife mortality awareness signs on provincial highways).

330

331 **Actions:**

332 13. Promote awareness of Spotted Turtle, including its status and
333 protection under the ESA, and engage the public and stakeholders in
334 Spotted Turtle protection and recovery activities. Actions should be
335 coordinated with other species at risk turtle initiatives where
336 appropriate. This may include:

- 337 ○ developing and evaluating effectiveness of interactive social media
338 and social marketing campaigns to promote Spotted Turtle
339 stewardship and reduce threats such as road mortality and illegal
340 collection;

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- 341 ○ installing turtle crossing signs in high risk areas to educate road
342 users to take caution and reduce their speed during the active
343 season, where appropriate; and,
- 344 ○ educating the public on what to do if they encounter an injured
345 turtle or nest in a high-risk area.

346 **Implementing Actions**

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

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

357 **Reviewing Progress**

358 The ESA requires the Ontario government to conduct a review of progress towards
359 protecting and recovering a species no later than the time specified in the species'
360 government response statement, which has been identified as 10 years in this
361 government response statement. The review will help identify if adjustments are
362 needed to achieve the protection and recovery of Spotted Turtle.

363 **Acknowledgement**

364 We would like to thank all those who participated in the development of Ontario's
365 Recovery Strategy and Government Response Statement for the Spotted Turtle
366 Turtle (*Clemmys guttata*) for their dedication to protecting and recovering species at
367 risk.

368 **For Additional Information:**

369 Visit the species at risk website at ontario.ca/speciesatrisk
370 Contact the Ministry of the Environment, Conservation and Parks
371 1-800-565-4923

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372 TTY 1-855-515-2759

373 www.ontario.ca/environment