

DRAFT Government Response Statement
to the
Recovery Strategy for the Hoptree Borer in Ontario

1 **Hoptree Borer**

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 Hoptree Borer \(*Prays atomocella*\) in Ontario](#) was
24 completed on December 7, 2018.

25 Hoptree Borer is a small moth with forewings that are pure white with black spots and a 26 wingspan of 17 to 20 mm. Hoptree Borer is dependent on its host plant the Common 27 Hoptree (<i>Ptelea trifoliata</i>), which is listed as special concern on the Species at Risk in 28 Ontario (SARO) List.

29 **Protecting and Recovering Hoptree Borer**

30 Hoptree Borer is listed as an endangered species under the ESA, which protects both
31 the insect and its habitat. The ESA prohibits harm or harassment of the species and

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

34 Globally, the distribution of Hoptree Borer is not well known, but the species generally
35 occurs from the southern Great Lakes region through the midwestern United States to
36 south-central Texas, coinciding with the distribution of its larval host species, the
37 Common Hoptree. Hoptree Borer is considered to be rare throughout its range and is
38 not found in all locations where Common Hoptree occurs.

39 In Canada, Hoptree Borer are only found in Ontario and population levels and trends
40 are generally unknown. There are seven confirmed records of the species in the
41 province consisting of adults on the west side of Point Pelee National Park on the north
42 shore of Lake Erie, and larvae on Pelee Island. In 2016, additional evidence of Hoptree
43 Borer larval feeding damage was found on Common Hoptrees on Pelee Island.

44 Hoptree Borer is a small, highly specialized moth dependent on its only host species,
45 the Common Hoptree, which is primarily restricted to sandy shorelines. Hoptree Borer
46 likely deposits eggs during mid to late June, and larvae then bore into the twigs of
47 Common Hoptree, creating a cavity in the stem. Larvae feed on leaves and other plant
48 tissue until late summer or fall and likely overwinter in the cavity. The following spring,
49 larvae resume feeding on young shoots of Common Hoptree until they are ready to
50 pupate. Adults emerge shortly thereafter and lay eggs on Common Hoptree shoots.
51 Dispersal and migration have not been documented and are likely limited by the
52 discontinuous distribution of Common Hoptree in Ontario.

53 Common Hoptrees are found in seven core areas along the north shore of Lake Erie
54 and Lake Erie islands (Middle Island, Pelee Island, the Essex County shoreline
55 including mainland Point Pelee National Park, Walpole Island First Nation, Rondeau
56 Provincial Park, Port Burwell Provincial Park, Regional Municipality of Niagara). Within
57 these core areas, Hoptree Borer has only been documented on the Essex County
58 shoreline (Point Pelee National Park) and Pelee Island. Hoptree Borer has only been
59 found at sites where Common Hoptree grows abundantly (1,000 to 10,000 mature
60 Common Hoptrees) on sandy shorelines and has not been found in smaller isolated
61 Common Hoptree populations.

62 In 2017, Hoptree Borer's host plant, Common Hoptree, was down-listed provincially
63 from threatened to special concern based on the [Committee on the Status of Species at
64 Risk in Ontario's \(COSSARO\) assessment](#). Focussed survey efforts resulted in a
65 significant increase to the number of known individuals since the species was first listed
66 in Ontario.

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67 Undiscovered populations of Hoptree Borer may exist elsewhere in Ontario within the
68 range of Common Hoptree as little survey effort has been dedicated to smaller moths
69 (e.g., Hoptree Borer) in most jurisdictions. Given the population size of Common
70 Hoptrees and proximity of other Hoptree Borer observations, further searches are
71 warranted on Middle Island, Essex County west of Point Pelee and Pelee Island.
72 Hoptree Borer are unlikely to be found within the remaining Common Hoptree core
73 areas due to smaller Common Hoptree population levels, geographic isolation,
74 unfavourable climate conditions, or a combination of these factors. Targeted surveys for
75 Hoptree Borer in Rondeau Provincial Park and the Niagara region occurred in 2014 and
76 indicate the species is absent in these areas.

77 Knowledge gaps exist regarding the distribution and population levels of Hoptree Borer
78 and the life cycle of Hoptree Borer in Canada. Current information on the biology of
79 Hoptree Borer is largely inferred from Hoptree Borer in the United States or other
80 closely related species. The species' dispersal capabilities, migration and adult feeding
81 behaviour are also unknown.

82 The main threats identified for Hoptree Borer are habitat related and are those identified
83 for its host species, Common Hoptree – the loss of suitable habitat from the alteration of
84 natural dune processes, vegetation succession, and competition from invasive species
85 such as Norway Maple (*Acer platanoides*), White Mulberry (*Morus alba*) and White
86 Sweet Clover (*Melilotus albus*). Common Hoptree is typically found on the outer edge of
87 shoreline vegetation in naturally dynamic dune habitat maintained by the erosion and
88 deposition of sand. Consequently, shoreline hardening (e.g., construction of seawalls)
89 threatens habitat availability by altering these natural dune processes by reducing the
90 level of sand deposition resulting in the loss of beach and dune habitat. In addition, fire
91 suppression allows successional forests to develop, shading out Common Hoptree.
92 Invasive species may threaten Hoptree Borer by directly competing with its host
93 species, Common Hoptree, by limiting seedling establishment. Suitable habitat may
94 also be lost to invasive plant species indirectly through outcompeting other plants that
95 may be used by Hoptree Borer as adult nectar sources. Threats to Hoptree Borer and
96 its host, Common Hoptree, also include shoreline development (e.g., cottage
97 development and beach grooming) and recreational activities (e.g., trampling and all
98 terrain vehicle (ATV) use). Common Hoptree may be impacted in some areas by
99 Double-crested Cormorants (*Phalacrocorax auritus*) from deposition of guano (feces).
100 Common Hoptrees on Middle Island are managed federally by Parks Canada as it
101 occurs within Point Pelee National Park.

102 Potential threats to Hoptree Borer include control measures for Gypsy Moth (*Lymantria*
103 *dispar dispar*) from ground and aerial spraying of the pesticide BtK (*Bacillus*

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104 *thuringiensis var. kurstaki*) and competition for resources from other insects. Several
105 insect species are dependent on Common Hoptree and feed on the twigs, leaves and
106 nectar, and the direct impacts of the interspecific competition for resources to Hoptree
107 Borer and its host are unknown. Hoptree Borer may also be impacted by higher
108 predation pressure from migratory birds on Point Pelee.

109 Given that Hoptree Borer is a specialist species that relies on its host, recovery efforts
110 for Hoptree Borer will focus on maintaining and protecting habitat including its host
111 species, the Common Hoptree, in areas where Hoptree Borer is found while filling
112 knowledge gaps related to the species' biology, ecology and population level/trends.
113 Further surveys in suitable habitat will improve knowledge of the distribution of Hoptree
114 Borer and inform priority areas for recovery implementation. Ecosystem-focussed
115 recovery efforts (including research) are encouraged for Hoptree Borer and its host to
116 ensure threats are mitigated effectively and in consideration of complex ecological
117 relationships.

Government's Recovery Goal

The government's goal for the recovery of Hoptree Borer is to maintain the distribution of the species at existing locations in Ontario by filling knowledge gaps and managing threats to the species and to its host species.

Actions

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

Government-led Actions

To help protect and recover Hoptree Borer, the government will directly undertake the following actions:

- Continue to monitor and manage provincially protected areas with Hoptree Borer and Common Hoptree in a manner consistent with park management plans (e.g., Fish Point Provincial Park).

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- Explore taking appropriate management actions in accordance with provincial policy direction on cormorants to support protection and recovery for Hoptree Borer and its host, Common Hoptree.
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- Work with partners and stakeholders to support pollinator health in Ontario through actions such as integrated pest management and education.
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- Collaborate with federal partners, such as Parks Canada, Environment and Climate Change Canada and Canadian Wildlife Service to implement protection and recovery actions for Hoptree Borer and its host species on federal lands.
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- For populations that occur on Pelee Island, explore opportunities to work collaboratively with the Township of Pelee, including the Pelee Island Environmental Advisory Committee, the federal government and local partners to integrate approaches to stewardship, implement recovery actions and explore integrated approaches to managing species at risk.
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- 150
- Continue to implement the [Ontario Invasive Species Strategic Plan \(2012\)](#) to address the invasive species (e.g., Norway Maple) that threaten Hoptree Borer.
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- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
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- Encourage the submission of Hoptree Borer data to the Ontario's central repository through the citizen science project that they receive data from (i.e., [iNaturalist.ca](#)) and directly through the [Natural Heritage Information Centre](#).
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- 157
- Undertake communications and outreach to increase public awareness of species at risk in Ontario.
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- Continue to protect Hoptree Borer and its habitat through the ESA.
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- Support conservation, agency, municipal and industry partners, and Indigenous communities and organizations to undertake activities to protect and recover Hoptree Borer. Support will be provided where appropriate through funding, agreements, permits (including conditions) and/or advisory services.
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- 164
- Encourage collaboration, and establish and communicate annual priority actions for government support in order to reduce duplication of efforts.

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166 **Government-supported Actions**

167 The government endorses the following actions as being necessary for the protection
168 and recovery of Hoptree Borer. Actions identified as “high” may be given priority
169 consideration for funding under the Species at Risk Stewardship Program. Where
170 reasonable, the government will also consider the priority assigned to these actions
171 when reviewing and issuing authorizations under the ESA. Other organizations are
172 encouraged to consider these priorities when developing projects or mitigation plans
173 related to species at risk.

174 **Focus Area: Inventory and Monitoring**

175 Objective: Increase knowledge of the distribution, abundance and habitat
176 conditions of Hoptree Borer and its host species.

177 The population size and trends for Hoptree Borer are generally unknown and very few
178 individuals have been found. To improve knowledge of Hoptree Borer distribution,
179 surveys and inventory are required in suitable areas where Common Hoptree are found
180 in larger stands on sandy shorelines, particularly Middle Island, Essex County west of
181 Point Pelee and unsurveyed areas of Pelee Island. Implementation of a standardized
182 monitoring program for Hoptree Borer and its host will improve knowledge of population
183 sizes and trends over time. Surveys and monitoring should be appropriately timed for
184 Hoptree Borer. In addition, identifying and documenting threats affecting Hoptree Borer
185 and its host, Common Hoptree, will improve our understanding of the extent and
186 severity of threats and enable management approaches to be adjusted accordingly.

187 **Actions:**

- 188 1. **(High)** Conduct surveys in suitable habitat to identify any new
189 populations of Hoptree Borer in priority areas (e.g., Middle
190 Island, Essex County west of Point Pelee, Pelee Island).
- 191 2. **(High)** Develop and implement a standardized monitoring
192 program at locations where Hoptree Borer and its host species
193 are known to occur. The monitoring program will document and
194 assess:
- 195 ○ presence and absence of Hoptree Borer;
 - 196 ○ health of Common Hoptree (including presence of pests
197 and disease);
 - 198 ○ the distribution, population size and trends and extent of
199 feeding damage of other insect species specializing on
200 Common Hoptree;
 - 201 ○ type, quality, and extent of suitable habitat; and,

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- 237 6. Research factors that influence recruitment of the larval host
238 (Common Hoptree) to help improve natural regeneration at sites
239 where Hoptree Borer are found or likely to occur. Some factors
240 include:
- 241 ○ sex ratios;
 - 242 ○ seed production and dispersal;
 - 243 ○ habitat suitability;
 - 244 ○ survivorship and longevity; and,
 - 245 ○ germination.
- 246

247 Focus Area:	Management and Habitat Protection
248 Objective:	Maintain or improve the quality of habitat available for Hoptree 249 Borer and its host species, and reduce threats to the species and 250 its host.

251 Hoptree Borer is known to occur on private land, federal protected areas and near
252 transmission corridors. As a result, a collaborative approach to habitat management and
253 protection will support coordinated implementation of actions, improve efficiency and
254 prevent duplication of efforts. Major threats to Hoptree Borer and its host includes
255 altered coastal processes, habitat succession and invasive species resulting in the loss
256 of suitable habitat. Landowners and land managers are encouraged to work
257 collaboratively to mitigate threats of altered coastal processes and manage native and
258 non-native vegetation while minimizing impacts to Hoptree Borer, and its host, Common
259 Hoptree. Minimizing further shoreline hardening will allow the natural movement of
260 sediment into the water and encourage the transport of sediment to beaches where the
261 host species grows.

- 262 **Actions:**
- 263 7. **(High)** Work collaboratively with municipalities, conservation
264 partners, land owners and land managers to mitigate threats
265 and develop, implement and evaluate management plans to
266 maintain or improve the quality of Hoptree Borer habitat and that
267 of its host species. Actions may include:
- 268 ○ managing vegetation to improve habitat quality (e.g.,
269 controlling invasive species posing a direct threat such as
270 Norway Maple, White Mulberry and White Sweet Clover)

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- 271 ○ minimizing the use of pesticides and minimizing the use
272 of herbicides on the host species and nectar sources at
273 locations where Hoptree Borer is present; and,
274 ○ where feasible, minimizing further shoreline hardening
275 and barriers that block the natural movement of sediment
276 where Hoptree Borer and its host are present.
- 277 8. Implement approaches to avoid or reduce impacts of
278 recreational activities (e.g., trampling, ATVs) on Hoptree Borer
279 and its host including:
280 ○ redirecting recreational activities away from the species;
281 ○ erecting physical barriers, if appropriate; and,
282 ○ installing signage to alert land users to the presence of
283 the species.
- 284 9. As opportunities arise, work with local land owners and
285 community partners to support the securement of habitat of
286 Hoptree Borer through existing land securement and
287 stewardship programs.

Focus Area:	Awareness
Objective:	Increase public awareness of Hoptree Borer to protect and recover the species and its host.

292 Collaborative efforts are needed to support the persistence of both Hoptree Borer and
293 its host, Common Hoptree. As Hoptree Borer is found on public lands, private lands and
294 near transmission corridors, awareness is a key factor in supporting recovery of the
295 species. By increasing local awareness, individuals can become active stewards and
296 learn how modifying activities can help to protect the species and its host.

- 297 **Actions:**
- 298 10. Collaborate with organizations, landowners, land managers, and
299 Indigenous communities and organizations to promote
300 awareness of Hoptree Borer and its host by sharing information
301 on:
302 ○ how to identify the species;
303 ○ the species' habitat requirements;
304 ○ protection afforded to the species and its habitat under
305 the ESA; and,

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- 306 ○ actions that can be taken to avoid or minimize impacts to
307 the species and its host including reducing use of
308 pesticides.

309 **Implementing Actions**

310 Financial support for the implementation of actions may be available through the
311 Species at Risk Stewardship Program. Conservation partners are encouraged to
312 discuss project proposals related to the actions in this response statement with the
313 program staff. The Ontario government can also advise if any authorizations under the
314 ESA or other legislation may be required to undertake the project.

315 Implementation of the actions may be subject to changing priorities across the multitude
316 of species at risk, available resources and the capacity of partners to undertake
317 recovery activities. Where appropriate, the implementation of actions for multiple
318 species will be coordinated across government response statements.

319 **Reviewing Progress**

320 The ESA requires the Ontario government to conduct a review of progress towards
321 protecting and recovering a species not later than five years from the publication of this
322 response statement. The review will help identify if adjustments are needed to achieve
323 the protection and recovery of Hoptree Borer.

324 **Acknowledgement**

325 We would like to thank all those who participated in the development of the Recovery
326 Strategy for the Hoptree Borer (*Prays atomocella*) in Ontario for their dedication to
327 protecting and recovering species at risk.

328 **For Additional Information:**

329 Visit the species at risk website at ontario.ca/speciesatrisk
330 Contact the Natural Resources Information and Support Centre
331 1-800-667-1940
332 TTY 1-866-686-6072
333 nrisc@ontario.ca