

1 **Cerulean Warbler**

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 Ontario government’s legislative
6 commitment to protecting and recovering species at risk and their habitats.

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

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

23 The [Recovery Strategy for the Cerulean Warbler \(*Setophaga cerulea*\) in Ontario](#) was
24 completed on September 6, 2022.

25 Cerulean Warbler is a small songbird – about 10 to 12 cm long. The adult male is deep
26 blue on top, with white underparts and a distinctive blue-black band across the throat.
27 The adult female is blue-green on top, with whitish underparts that often appear to have
28 a yellowish tint, and yellow-white eyebrows. Both males and females have two
29 prominent white wing bars and white tail spots.

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30 **Protecting and Recovering Cerulean Warbler**

31 Cerulean Warbler is listed as a threatened species under the ESA, which protects both
32 the animal and its habitat. The ESA prohibits harm or harassment of the species and
33 damage or destruction of its habitat without authorization or complying with the
34 requirements of a regulatory exemption.

35 Cerulean Warbler also receives protection under the *Migratory Birds Convention Act*,
36 1994, which protects adults and young birds, as well as their nests and eggs in Canada.

37 Cerulean Warbler's breeding range is large and extends from extreme southwestern
38 Quebec and southern Ontario west to Minnesota and Nebraska and south to Texas and
39 other Gulf states across to North Carolina. The species travels through Central America
40 on its migration to and from its wintering grounds in northern South America, on the
41 Andes Mountains in Colombia, Ecuador, Venezuela, Peru and Bolivia.

42 In Ontario, the species' range extends from the northern shore of Lake Erie to southern
43 Georgian Bay and east to the Ottawa Valley. Cerulean Warbler's distribution within this
44 range is concentrated in two bands: one in the Carolinian Zone from southern Lake
45 Huron to western Lake Ontario, and another that stretches from southern Georgian Bay
46 to the Frontenac Axis, where a relatively large proportion of the population occurs.

47 Cerulean Warbler has high breeding site and migration route fidelity; individuals tend to
48 return to the same nesting site every year as well as to the same wintering grounds they
49 used in the previous non-breeding season.

50 Cerulean Warbler has specific breeding habitat requirements both at the landscape
51 scale and site scale. At the landscape scale, Cerulean Warbler breeding habitat
52 appears to be associated with large continuous forested areas. The minimum forest
53 patch size for successful nesting is not well understood and recommendations have
54 varied from 20 to 1600 ha in size. Nesting sites are usually located away from abrupt
55 forest edges but are associated with gaps in the interior forest. These types of sites are
56 typically mature deciduous forests, with open understories for easy foraging. Cerulean
57 Warbler territories are also often associated with sloping terrain, which allows more light
58 to reach the forest understory and encourages plant diversity and an abundance of
59 insect prey.

60 The diet of Cerulean Warbler consists almost exclusively of insects; however, the
61 species will also consume nectar during the non-breeding season.

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62 The primary threat to Cerulean Warbler in its Ontario breeding range is the loss and
63 degradation of forest habitat. Much of the species' range has been impacted by
64 historical forest habitat loss, and/or habitat fragmentation - both of which have greatly
65 contributed to the population's decline.

66 Much of the species' current habitat is located in protected areas and is likely to be
67 stable over the long-term. However, a considerable amount of the species' historical
68 habitat has been lost. This loss likely continues to affect the species' local populations
69 and may have resulted in sub-populations that are not viable. Any additional loss of
70 habitat could significantly affect the ability of the species to recover.

71 Logging and wood harvesting may present a threat to Cerulean Warbler, since it can
72 result in fragmented forests or forests that lack mature trees. While Cerulean Warblers
73 have been found to increase in abundance in moderately harvested stands, in some
74 cases their reproductive success in these stands can be lower compared to
75 unharvested stands. As a result, it can be possible that moderately harvested forests
76 may pose an ecological trap that attracts Cerulean Warblers but ultimately acts as a
77 sink population (population where death rate is greater than birth rate, thus cannot be
78 maintained without immigration) and contributes to a net decline in the species'
79 population.

80 Additional threats to Cerulean Warbler include the development of transportation
81 corridors, changes to natural ecosystems (e.g. decrease in insect prey due to
82 insecticides, defoliation of/damage to trees that Cerulean Warblers rely on), invasive
83 species (e.g. those that predate nests and/or use Cerulean Warbler to raise their
84 young), and climate change (i.e. changes in food availability, temperature extremes
85 reducing nesting success). The overall impacts of most of these threats are not well
86 understood and require further investigation.

87 Recovering and protecting Cerulean Warbler will require maintenance and protection of
88 large continuous sections of deciduous forest to address the threat of habitat loss and
89 fragmentation and enable the species to breed successfully in Ontario. Many of the
90 other threats facing Cerulean Warblers have been estimated to have low or unknown
91 impacts. However, the cumulative effect of all these threats acting together likely results
92 in significant impacts on the population, and therefore, implementing best management
93 practices that address these threats should help with the species' recovery and
94 protection. Further investigation of these threats will help to fill in the knowledge gaps
95 surrounding the species and inform future conservation efforts. To effectively execute
96 these conservations efforts and achieve the recovery goals, much of this work will

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97 require collaboration with stakeholders within Ontario and abroad, since Cerulean
98 Warbler is a migratory species facing threats throughout its entire range.

99 **Government's Recovery Goal**

100 The government's short-term goal for the recovery of Cerulean Warbler is to halt the
101 population decline by mitigating threats, maintaining and increasing its habitat and
102 expanding knowledge on the species. The long-term goal is to maintain a stable, self-
103 sustaining population, and where biologically and technically feasible, increase the
104 species' abundance and the area it occupies within its current Ontario range.

105 **Actions**

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

113 **Government-led Actions**

114 To help protect and recover Cerulean Warbler, the government will directly undertake
115 the following actions:

- 116
- Continue to protect Cerulean Warbler and its habitat through the ESA.
 - 117 • Undertake communications and outreach to increase public awareness of
118 species at risk in Ontario (e.g. through Ontario Parks Discovery Program, where
119 appropriate).
 - 120 • Continue to monitor populations and mitigate threats to the species and its
121 habitat in provincially protected areas, where feasible and appropriate.
 - 122 • Educate other agencies and authorities involved in planning and environmental
123 assessment processes on the protection requirements under the ESA.
 - 124 • Continue to support conservation, agency, municipal and industry partners, and
125 Indigenous communities and organizations to undertake activities to protect and

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126 recover Cerulean Warbler. Support will be provided where appropriate through
127 funding, agreements, permits and/or advisory services.

128 • Work with all levels of government, communities and sectors to take action on
129 climate change, and to report on progress in reducing greenhouse gas
130 emissions.

131 • Encourage the submission of Cerulean Warbler data to the Ontario's central
132 repository through the [NHIC \(Rare species of Ontario\) project in iNaturalist](#) or
133 directly through the [Natural Heritage Information Centre](#).

134 • Continue to implement the *Ontario Invasive Species Strategic Plan (2012)* to
135 address the invasive species (e.g. *Spongy Moth (Limantria dispar dispar)*,
136 *Butternut canker (Ophiognomonia clavignenti-juglandacearum)*, *Asian Long-*
137 *horned Beetle (Anoplophora glabripennis)*, *Beech Bark Disease (Cryptococcus*
138 *fagisuga/Neonectria sp. complex)*) that threaten Cerulean Warbler and its habitat.

139 • Continue to manage Crown forests in a manner that minimizes adverse impacts
140 to species at risk and their habitats.

141 • Conduct a review of progress toward the protection and recovery of Cerulean
142 Warbler within five years of the publication of this document.

143 **Government-supported Actions**

144 The government endorses the following actions as being necessary for the protection
145 and recovery of Cerulean Warbler. Actions identified as “high” may be given priority
146 consideration for funding under the Species at Risk Stewardship Program. Where
147 reasonable, the government will also consider the priority assigned to these actions
148 when reviewing and issuing authorizations under the ESA. Other organizations are
149 encouraged to consider these priorities when developing projects or mitigation plans
150 related to species at risk.

151 Focus Area:	Protection and Management
152 Objective:	Maintain, improve the quality of, and where feasible, increase the 153 availability of suitable habitat in Ontario for Cerulean Warbler.

154 The actions outlined below will contribute to Cerulean Warbler protection and recovery
155 by addressing threats facing the species. Habitat loss and degradation have been the
156 primary cause of historic Cerulean Warbler decline. Encouraging the protection of the
157 species' remaining habitat, and reforestation to increase habitat availability, are

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158 important measures that should help to prevent or slow Cerulean Warbler population
159 decline and support increases in abundance. These efforts may also benefit other
160 species that inhabit mature forests. Best management practices should be implemented
161 when harvesting mature deciduous forests or individual mature deciduous trees to avoid
162 or minimize impacts on Cerulean Warbler habitat. Insecticides have been shown to
163 cause declines in insect abundance which in turn lowers prey availability for Cerulean
164 Warbler. Cerulean Warbler is also affected by several invasive species whose impacts
165 vary from defoliation to nest predation. Additionally, Cerulean Warbler is a migratory
166 species whose wintering grounds lie in Central and South America. Consequently,
167 individuals breeding in Ontario rely on habitat outside the province. The species'
168 wintering and migratory grounds face many of the same threats which contribute to
169 Cerulean Warbler decline in Ontario. To effectively provide protection and recovery for
170 Cerulean Warbler, Ontario stakeholders will need to work collaboratively with
171 international organizations on conservation efforts.

172 **Actions:**

- 173 1. **(High)** As opportunities arise, work with local landowners and community
174 partners to support the securement of Cerulean Warbler habitat through
175 existing land securement and stewardship programs.
- 176 2. In collaboration with landowners, land managers, municipal
177 governments, stewardship organizations, forestry professionals, and
178 Indigenous communities and organizations, develop, refine and
179 implement best management practices (BMPs) that address Cerulean
180 Warbler's local and landscape-scale habitat requirements. BMPs should
181 be considered when developing management plans for harvested forests
182 and woodlots as appropriate. This may include:
 - 183 i. **(High)** promoting deciduous reforestation to increase the size of
184 existing habitat areas (forest patches) and forest cover across the
185 landscape, as well as restoring connectivity between habitat areas
 - 186 ii. **(High)** encouraging the use of forest management and harvesting
187 regimes that are compatible with Cerulean Warbler
 - 188 iii. promoting integrated pest management (IPM) and reducing overall
189 insecticide use
 - 190 iv. monitoring and managing (as appropriate and feasible) invasive
191 species that pose a direct threat to Cerulean Warbler and its habitat
- 192 3. Collaborate with partners and other jurisdictions (international included)
193 on initiatives to conserve key habitats, and address threats to the species
194 occurring outside Ontario (i.e. key migratory and wintering grounds,
195 threats during migration or on wintering grounds).

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196 **Focus Area: Monitoring and Research**
197 Objective: Increase understanding of Cerulean Warbler abundance and
198 population trends, habitat needs (at both the local and landscape
199 scale), threats to the species and the impacts of those threats, and
200 methods for minimizing the identified threats.

201 To ensure Cerulean Warbler recovery efforts are well-informed and focused where they
202 are most needed, it is necessary to improve our understanding of the status of the
203 species and the relative importance of the factors impacting its recovery. Research
204 related to minimal forest patch size and landscape requirements, population dynamics,
205 compatible harvesting practices, invasive species and other threats facing Cerulean
206 Warbler, will help inform future recovery efforts and better inform our understanding of
207 the species' habitat needs.

- 208 **Actions:**
- 209 4. Monitor the species' distribution, population and habitat trends at a local
210 and province-wide scale in Ontario through the Breeding Bird Atlas
211 project along with other programs which are conducted more frequently
212 (e.g. Forest Bird Monitoring Program) to ensure information is up to date.
 - 213 5. Conduct research on the biology and ecology of Cerulean Warbler
214 including:
 - 215 i. the effects of landscape-scale forest configuration and size, and
216 forest patch size on Cerulean Warbler occupancy, productivity and
217 survival in Ontario
 - 218 ii. the effect of various invasive species which have been identified as
219 threats to Cerulean Warbler
 - 220 iii. the effect of harvesting practices and different types of recovery
221 actions on breeding populations (population distribution, density and
222 productivity) across a variety of landscapes
 - 223 iv. the genetic diversity of Cerulean Warbler in Ontario and potential
224 risks to genetic health such as inbreeding and hybridization
 - 225 v. the effect and severity of other threats facing Ontario populations of
226 Cerulean Warblers, and how to mitigate these threats
 - 227 6. Identify or develop species' distribution models to assess changes to the
228 species' range over time.

229 **Focus Area: Awareness and Outreach**
230 Objective: Increase awareness of Cerulean Warbler, its habitat requirements,
231 threats and best management practices to promote its protection
232 and recovery.

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233 Outreach within the province should be focussed on increasing awareness of the
234 species and providing education about the threats that the species faces, best
235 management practices and forest and woodlot management techniques that are
236 compatible with Cerulean Warbler.

237 **Actions:**

- 238 7. **(High)** Collaborate with conservation partners, industry and Indigenous
239 communities and organizations to develop and distribute materials or
240 programs that increase awareness of Cerulean Warbler among
241 landowners, land managers, and land users in Ontario by sharing
242 information on:
- 243 i. show to identify the species
 - 244 ii. the species' habitat requirements, including the importance of
245 deciduous forest
 - 246 iii. the protection afforded to the species and its habitat under the ESA
 - 247 iv. actions that can be taken to avoid or minimize impacts to the species
248 and its habitat, such as implementing best management practices
249 related to forest and woodlot management

250 **Implementing Actions**

251 Financial support for the implementation of actions may be available through the
252 Species at Risk Stewardship Program. Conservation partners are encouraged to
253 discuss project proposals related to the actions in this response statement with Ministry
254 of the Environment, Conservation and Parks staff. The Ontario government can also
255 provide guidance about the requirements of the ESA, whether an authorization or
256 regulatory exemption may be required for the project and, if so, the authorization types
257 and/or conditional exemptions for which the activity may be eligible.

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

262 **Reviewing Progress**

263 The ESA requires the Ontario government to conduct a review of progress towards
264 protecting and recovering a species no later than the time specified in the species'
265 government response statement, which has been identified as five years. The review

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266 will help identify if adjustments are needed to achieve the protection and recovery of
267 Cerulean Warbler.

268 **Acknowledgement**

269 We would like to thank all those who participated in the development of the Recovery
270 Strategy and Government Response Statement for the Cerulean Warbler (*Setophaga*
271 *cerulea*) in Ontario for their dedication to protecting and recovering species at risk.

272 **For Additional Information:**

273 Visit the species at risk website at ontario.ca/speciesatrisk
274 Contact the Ministry of the Environment, Conservation and Parks
275 1-800-565-4923
276 TTY 1-855-515-2759
277 www.ontario.ca/environment