

# Cerulean Warbler

## Ontario Government Response Statement



Photo: Carl Savignac

### Protecting and Recovering Species at Risk in Ontario

Species at risk recovery is a key part of protecting Ontario's biodiversity. *The Endangered Species Act, 2007* (ESA) is the Ontario government's legislative commitment to protecting and recovering species at risk and their habitats.

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

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

The Recovery Strategy for the Cerulean Warbler (*Setophaga cerulea*) in Ontario was completed on September 6, 2022.

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

## Protecting and Recovering Cerulean Warbler

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

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

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

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

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

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

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

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

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

Logging and wood harvesting may present a threat to Cerulean Warbler, since it can result in fragmented forests or forests that lack mature trees. With that said, Cerulean Warblers have been found to increase in abundance in moderately harvested stands, although in some cases their reproductive success in these stands can be lower compared to unharvested stands.

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

Recovering and protecting Cerulean Warbler will require a better understanding of the species' habitat needs and how forest management practices could support the species' recovery. Further investigation will help to fill in the knowledge gaps surrounding the species and inform future conservation efforts. To effectively execute these conservation efforts and achieve the recovery goals, much of this work will require collaboration with stakeholders within Ontario and abroad, since Cerulean Warbler is a migratory species facing threats throughout its entire range.

### **Government's Recovery Goal**

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

## 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 co-operation 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 Cerulean Warbler, the government will directly undertake the following actions:

- Continue to protect Cerulean Warbler and its habitat through the ESA.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario (e.g. through Ontario Parks Discovery Program, where appropriate).
- Continue to monitor populations and mitigate threats to the species and its habitat in provincially protected areas, where feasible and appropriate.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Continue to support conservation, agency, municipal and industry partners, and Indigenous communities and organizations to undertake activities to protect and recover Cerulean Warbler. Support will be provided where appropriate through funding, agreements, permits and/or advisory services.
- Work with all levels of government, communities and sectors to take action on climate change, and to report on progress in reducing greenhouse gas emissions.
- Encourage the submission of Cerulean Warbler data to the Ontario's central repository through the NHIC (Rare species of Ontario) project in iNaturalist or directly through the Natural Heritage Information Centre.
- Continue to implement the *Ontario Invasive Species Strategic Plan* (2012) to address the invasive species (e.g. Spongy Moth (*Limantria dispar dispar*), Butternut canker (*Ophiognomonia clavignenti-juglandacearum*), Beech Bark Disease (*Cryptococcus fagisuga/Neonectria* sp. complex)) that threaten Cerulean Warbler and its habitat.
- Continue to manage Crown forests in a manner that minimizes adverse impacts to species at risk and their habitats.
- Conduct a review of progress toward the protection and recovery of Cerulean Warbler within five years of the publication of this document.

## Government-supported Actions

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

### Focus Area: Protection and Management

**Objective:** Maintain, improve the quality of, and where feasible, increase the availability of suitable habitat in Ontario for Cerulean Warbler.

The actions outlined below will contribute to Cerulean Warbler protection and recovery by addressing threats facing the species. Habitat loss and degradation have been the primary cause of historic Cerulean Warbler decline. Encouraging the protection of the species’ remaining habitat, and reforestation to increase habitat availability, are important measures that should help to prevent or slow Cerulean Warbler population decline and support increases in abundance. These efforts may also benefit other species that inhabit mature forests. Best management practices should be implemented when harvesting mature deciduous forests or individual mature deciduous trees to avoid or minimize impacts on Cerulean Warbler habitat. Insecticides have been shown to cause declines in insect abundance which in turn lowers prey availability for Cerulean Warbler. Cerulean Warbler is also affected by several invasive species whose impacts vary from defoliation to nest predation. Additionally, Cerulean Warbler is a migratory species whose wintering grounds lie in Central and South America. Consequently, individuals breeding in Ontario rely on habitat outside the province. The species’ wintering and migratory grounds face many of the same threats which contribute to Cerulean Warbler decline in Ontario. To effectively provide protection and recovery for Cerulean Warbler, Ontario stakeholders will need to work collaboratively with international organizations on conservation efforts.

#### Actions:

1. **(High)** As opportunities arise, work with local landowners and community partners to support the securement of Cerulean Warbler habitat through existing land securement and stewardship programs.
2. In collaboration with landowners, land managers, municipal governments, stewardship organizations, forestry professionals, and Indigenous communities and organizations, develop, refine and implement best management practices (BMPs) that address Cerulean Warbler’s local and landscape-scale habitat requirements.

BMPs should be considered when developing management plans for harvested forests and woodlots as appropriate.

This may include:

- i. **(High)** promoting deciduous reforestation to increase the size of existing habitat areas (forest patches) and forest cover across the landscape, as well as restoring connectivity between habitat areas
  - ii. **(High)** encouraging the use of forest management and harvesting regimes that are compatible with Cerulean Warbler
  - iii. promoting integrated pest management (IPM) and reducing overall insecticide use
  - iv. monitoring and managing (as appropriate and feasible) invasive species that pose a direct threat to Cerulean Warbler and its habitat
3. Collaborate with partners and other jurisdictions (international included) on initiatives to conserve key habitats, and address threats to the species occurring outside Ontario (i.e. key migratory and wintering grounds, threats during migration or on wintering grounds).

**Focus Area: Monitoring and Research**

**Objective:** Increase understanding of Cerulean Warbler abundance and population trends, habitat needs (at both the local and landscape scale), threats to the species and the impacts of those threats, and methods for minimizing the identified threats.

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

**Actions:**

4. Monitor the species' distribution, population and habitat trends at a local and province-wide scale in Ontario through the Breeding Bird Atlas project along with other programs which are conducted more frequently (e.g. Forest Bird Monitoring Program) to ensure information is up to date.
5. Conduct research on the biology and ecology of Cerulean Warbler including:
  - i. the effects of landscape-scale forest configuration and size, and forest patch size on Cerulean Warbler occupancy, productivity and survival in Ontario



- ii. the effect of various invasive species which have been identified as threats to Cerulean Warbler
  - iii. the effect of harvesting practices and different types of recovery actions on breeding populations (population distribution, density and productivity) across a variety of landscapes
  - iv. the genetic diversity of Cerulean Warbler in Ontario and potential risks to genetic health such as inbreeding and hybridization
  - v. the effect and severity of other threats facing Ontario populations of Cerulean Warblers, and how to mitigate these threats
6. Identify or develop species' distribution models to assess changes to the species' range over time.

**Focus Area: Awareness and Outreach**

**Objective:** Increase awareness of Cerulean Warbler, its habitat requirements, threats and best management practices to promote its protection and recovery.

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

**Actions:**

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

## Implementing Actions

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

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

## Reviewing Progress

The ESA requires the Ontario government to conduct a review of progress towards protecting and recovering a species no later than the time specified in the species' government response statement, which has been identified as five years. The review will help identify if adjustments are needed to achieve the protection and recovery of Cerulean Warbler.

## Acknowledgement

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

### For additional information:

Visit the species at risk website at [ontario.ca/speciesatrisk](http://ontario.ca/speciesatrisk)  
Contact the Ministry of the Environment, Conservation and Parks  
1-800-565-4923  
TTY 1-855-515-2759  
[www.ontario.ca/environment](http://www.ontario.ca/environment)