

**Ontario Species at Risk Evaluation Report for**  
**Canada Warbler**  
**Paruline du Canada**  
**(*Cardellina canadensis*)**

Committee on the Status of Species at Risk in Ontario  
(COSSARO)

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Assessed by COSSARO as Special Concern

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## Paruline du Canada (*Cardellina canadensis*)

La paruline du Canada (*Cardellina canadensis*) est classée dans la catégorie des espèces préoccupantes en Ontario par le CDSEPO.

La paruline du Canada (*Cardellina canadensis*) est un petit oiseau chanteur aux couleurs vives, mesurant de 12 à 15 cm de longueur. Comme de nombreux oiseaux chanteurs, les mâles arborent généralement des couleurs plus vives que les femelles et les jeunes. Leur queue bleu-gris et leurs parties supérieures contrastent avec leur gorge et leur poitrine jaunes. Des lignes noires forment un collier autour de la poitrine des oiseaux des deux sexes, mais de manière moins définie chez les femelles. Le bec est fin et des « lunettes » jaunes entourent les yeux. Les adultes conservent le même plumage toute l'année. La couleur de son plumage, plus particulièrement le collier sur sa poitrine, et son chant permettent de distinguer la paruline du Canada de la plupart des autres espèces de parulines nichant au Canada.

Quatre-vingts pour cent de l'aire de reproduction de ce petit oiseau chanteur, qui hiverne dans le nord de la cordillère des Andes, se trouve au Canada. Le déclin à long terme de la population canadienne a commencé à ralentir en 2003, et les effectifs connaissent une hausse stable depuis 2012, le taux de croissance global de la dernière décennie s'élevant à 46 %. Toutefois, d'importantes menaces persistent, notamment le défrichage des forêts en Amérique du Sud aux fins d'élevage du bétail et d'autres activités agricoles. Le statut de la menace pour l'espèce reflète l'amélioration notable de la tendance de la population, mais le risque qu'elle soit à nouveau menacée demeure préoccupant, si les menaces ne sont pas gérées efficacement dans toute son aire de répartition.

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## Executive summary

The Canada Warbler (*Cardellina canadensis*) is a small, brightly coloured songbird 12 to 15 cm in length. As with many songbirds, males are typically more brightly coloured than the females and immatures. Males have a bluish-grey tail and upper parts contrasting with a yellow throat and breast. In both males and females, black stripes form a collar on the breast, although this collar is less defined in the females. The bill is thin and there are yellow “spectacles” round the eyes. The adult plumages are similar throughout the year. The colour of the plumage, especially the collar on the breast, and the song of the Canada Warbler differentiate it from most other species of warblers that breed in Canada. This small songbird has 80% of its breeding range in Canada and winters in the northern Andes Mountains. Long-term declines of the Canadian population began to slow down in 2003 and numbers have steadily increased since 2012, with an overall growth of 46% over the past decade. However, significant threats persist, most notably clearing of forests in South America for livestock farming and other agriculture. The threat status reflects the substantial improvement in population trend, but concern remains that the species is at risk of becoming Threatened again if threats are not managed effectively.

# 1. Eligibility for Ontario status assessment

## 1.1. Eligibility conditions

### 1.1.1. Taxonomic distinctness

The Canada Warbler (*Cardellina canadensis*) is recognized as a distinct taxon. There are no subspecies of Canada Warbler (Conway 1999) and no known distinctions between populations.

### 1.1.2. Designatable Units

There are no subspecies of Canada Warbler (Conway 1999) and no known distinctions between populations. COSEWIC (2020) recognize only one designatable unit across the Canadian range. Only one designatable unit is recognized at the provincial level.

### 1.1.3. Native status

The Canada Warbler (*Cardellina canadensis*) is native to Canada and Ontario, and much of its global breeding range occurs in Canada (COSEWIC 2020, NatureServe 2021).

### 1.1.4. Occurrence

The Canada Warbler (*Cardellina canadensis*) is known to occur in Ontario.

## 1.2. Eligibility results

The Canada Warbler (*Cardellina canadensis*) is eligible for status assessment in Ontario.

# 2. Background information

## 2.1. Current designations

- GRANK: G5 (NatureServe 2021)
- IUCN: Least Concern (Birdlife International 2016)
- NRANK Canada: N4B, N3M
- COSEWIC: Special Concern (COSEWIC 2020)
- SARA: Threatened (2010, status change pending)
- ESA 2007: Special Concern
- SRANK: S4B (ranked in 2016)

## 2.2. Distribution in Ontario

In Ontario, Canada Warbler ranges across north-central and southern Ontario (Favourable Lake in the north, south to Elgin County; Cadman et al. 1987). Ontario makes up a significant portion of the species' breeding range, and some of the highest densities (males/ha) of the species are found across central Ontario (BAM 2021).

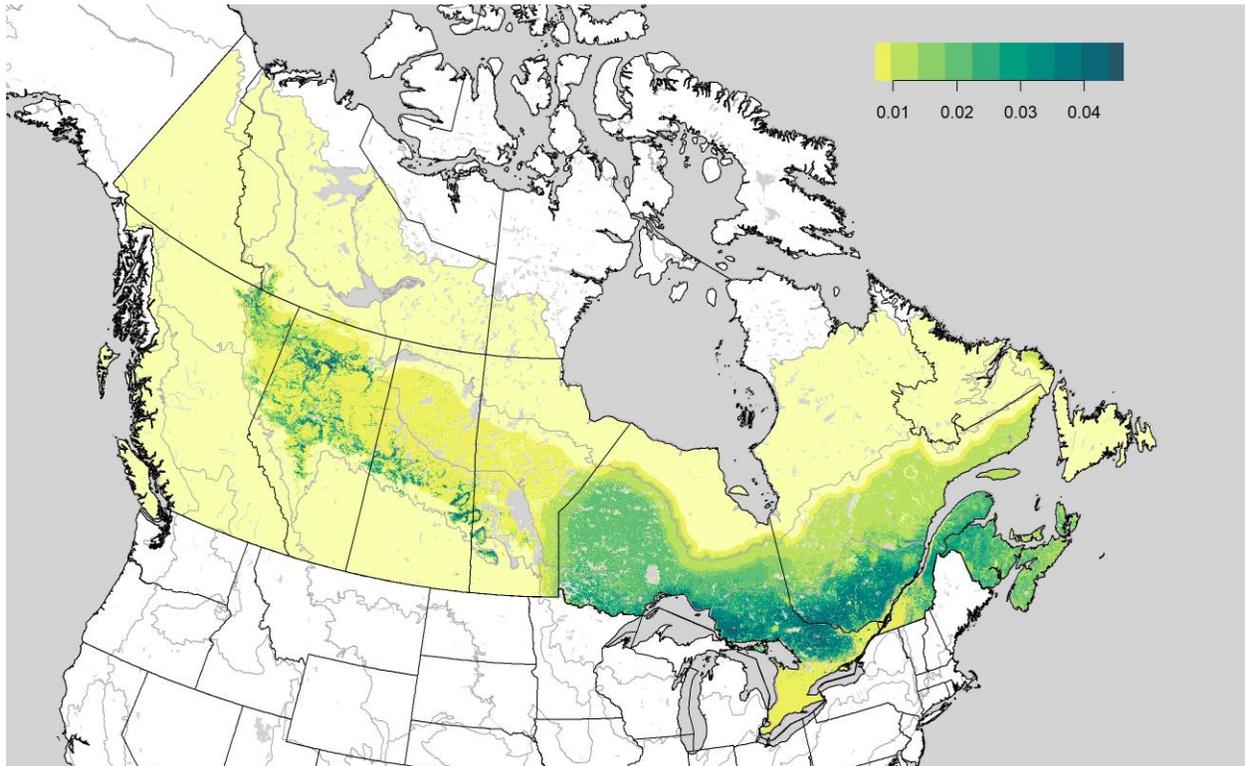


Figure 1: Density map of Canada Warbler (average density, males/ha). BAM (2021)



Figure 2: Element occurrences of Canada Warbler in Ontario (2010-2018). EOO estimated to be 1,115,243 km<sup>2</sup>, IAO estimated to be 10,108 km<sup>2</sup> (GeoCat).

## 2.3. Distribution, status and the broader biologically relevant

## geographic range outside Ontario

The Canada Warbler breeds across the southern boreal region of Canada and across much of southeastern Canada, northeastern United States, the Great Lakes region, and in a disjunct area of the southern Appalachian Mountains in eastern Tennessee, western South Carolina, and extreme northern Georgia (Conway 1999). In the United States it breeds in northeastern Minnesota, northeastern Wisconsin, the western and northern peninsula of Michigan, central Pennsylvania, northwestern New Jersey, southern Connecticut, southern Rhode Island, and southeastern Massachusetts (Conway 1999). Its range extends south through the southern Appalachian Mountains in eastern Tennessee, western South Carolina, and extreme northern Georgia (Conway 1999).

The Canadian range of the Canada Warbler extends from the Maritime provinces to British Columbia, and includes portions of all Canadian provinces and territories except Nunavut and Newfoundland and Labrador. Its breeding range includes the extreme southeastern Yukon (Sinclair et al. 2003), northeastern British Columbia, the southwestern corner of the Northwest Territories, northern and central Alberta, north-central Saskatchewan, central and southeastern Manitoba, north-central and southern Ontario (Favourable Lake in the north, south to Elgin County; Cadman et al. 1987), south-central and southern Quebec, and all of New Brunswick, Prince Edward Island and Nova Scotia (including Cape Breton Island; COSEWIC 2021).

An estimated 80% of the Canada Warbler's global breeding range occurs in Canada (based on range sizes by jurisdiction in PIF Landbird Population Estimates Database 2007), with an extent of occurrence of approximately 2.2 million km<sup>2</sup> (NatureServe 2021). The area of occupancy of the Canada Warbler is approximately 27,000 km<sup>2</sup>. This value is based on the home range estimate of two ha multiplied by a population estimate of 1.35 million pairs, derived from an extrapolation from the Ontario Breeding Bird Atlas (COSEWIC 2021).

Its winter range includes, to the north, the eastern part of the Andes foothills in Venezuela and northern Colombia and, to the south, Ecuador, northern Peru, and the Tepui region of northern Brazil (Robinson et al. 1995; American Ornithologist's Union 1998).

Table 1. Condition of the Species in Adjacent Jurisdictions and Broader Biologically Relevant Geographic Range

<b>Adjacent Jurisdictions</b>	<b>Biologically Relevant to Ontario (n/a, yes, no)</b>	<b>Condition</b>	<b>Notes &amp; Sources</b>
Quebec	Yes	S3	NatureServe 2020
Manitoba	Yes	S3	NatureServe 2020
Michigan	Yes	S5	NatureServe 2020
Minnesota	n/a	SNR	NatureServe 2020
Nunavut	n/a	n/a	
New York	n/a	S5B	NatureServe 2020

<b>Adjacent Jurisdictions</b>	<b>Biologically Relevant to Ontario (n/a, yes, no)</b>	<b>Condition</b>	<b>Notes &amp; Sources</b>
Ohio	n/a	S2	NatureServe 2020
Pennsylvania	Yes	S4B	NatureServe 2020
Wisconsin	Yes	S3B	NatureServe 2020
<i>Other Relevant Jurisdiction</i>			

## 2.4. Ontario conservation responsibility

The Ontario conservation responsibility for this species is high, with a significant portion of the breeding range in this province, and some of the highest breeding bird densities. The breeding area in Ontario represents approximately 50% of the Canadian breeding territory, making this a focal point for the species long-term persistence.

## 2.5. Direct threats

The majority of threats to the species occur on the wintering grounds where livestock production and ranching, logging and wood harvesting, and climate change and severe weather continue to pose a significant threat to the species' long-term persistence.

Based on a threat's calculation, key threats were identified as livestock farming and ranching (IUCN 2.3), primarily on the wintering grounds (medium), logging and wood harvesting (IUCN 5.3), primarily on the wintering grounds, and to a lesser extent on the breeding grounds (medium), climate change and severe weather (IUCN 11), especially drought on the wintering grounds (low), residential and commercial development (IUCN 1), notably collisions with tall buildings on migratory pathways (low), annual and perennial non-timber products (IUCN 2.1), primarily on the wintering grounds (low), energy production and mining (IUCN 3) (low), utility and service lines (IUCN 4.2), especially collisions with communication towers (low) and other ecosystem modifications (IUCN 7.3) (low).

## 2.6. Specialized life history or habitat use characteristics

*None.*

## 3. Ontario status assessment

### 3.1. Application of endangered/threatened status in Ontario

#### 3.1.1. Criterion A – Decline in total number of mature individuals

Not applicable. Population is considered increasing in Canada, with highest breeding

densities found in Ontario, where populations are considered stable or increasing.

### 3.1.2. Criterion B – Small distribution range and decline or fluctuation

Not applicable.

### 3.1.3. Criterion C – Small and declining number of mature individuals

Not applicable.

### 3.1.4. Criterion D – Very small or restricted total population

Not applicable.

### 3.1.5. Criterion E – Quantitative analysis

Not applicable.

## 3.2. Application of Special Concern in Ontario

While populations appear to be stable or increasing in Ontario, the few persisting low threats on the breeding range combined with significant and ongoing threats to the species breeding range suggest that this species remains a species of concern. If threats in South America and along the migration pathway continue, it is possible the species could become at risk of becoming threatened, and therefore the species may qualify for Special Concern.

## 3.3. Status Category Modifiers

### 3.3.1. Ontario's conservation responsibility

Ontario's conservation responsibility is relatively high, with what is likely the majority of the global breeding population occurring here.

### 3.3.2. Status modification based on rescue effect or level of risk in broader biologically relevant range

Not applicable.

## 3.4. Other status categories

### 3.4.1. Data deficient

Not applicable.

### 3.4.2. Extinct or extirpated

Not applicable.

### 3.4.3. Not at risk

Not applicable.

## 4. Summary of Ontario status

Canada Warbler (*Cardellina canadensis*) is classified as Special Concern in Ontario based on failing to meet any criterion threat category, but with persistent low-level threats in Ontario's significant portion of the breeding range, and ongoing significant threats on the species' wintering range in South America making it at risk of becoming threatened.

*This status of this species is consistent with the definition of Special Concern under the Endangered Species Act, 2007.*

## 5. Information sources

ABMI and BAM (Alberta Biodiversity Monitoring Institute and Boreal Avian Modelling Project). 2019. Canada Warbler (*Cardellina canadensis*). Website: <http://abmi.ca/home/data-analytics/biobrowser-home/species-profile?tsn=99001416> [accessed April 2021].

American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington, DC.

BirdLife International. 2016. *Cardellina canadensis*. The IUCN Red List of Threatened Species 2016: e.T22721882A94737489. <https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22721882A94737489.en>. Downloaded on 05 April 2021.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, Ontario. xxii + 706 pp.

Conway, C. J. 1999. Canada Warbler (*Wilsonia canadensis*). In The Birds of North America, No. 421 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

COSEWIC. 2020. IN PRESS. COSEWIC assessment and status report on the Canada Warbler *Cardellina canadensis* in Canada. Committee on the Status of Endangered

Wildlife in Canada. Ottawa. xi + 54 pp. (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>).

COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler *Wilsonia Canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp. ([www.sararegistry.gc.ca/status/status\\_e.cfm](http://www.sararegistry.gc.ca/status/status_e.cfm)).

NatureServe Explorer 2021. *Cardellina canadensis*, Canada Warbler. Accessed April 5, 2021.

Robinson S.K., J.W. Fitzpatrick, and J. Terborgh. 1995. Distribution and habitat use of neotropical migrant landbirds in the Amazon basin and Andes. *Bird Conservation International* 5:305-323.

Sinclair, P.H., W.A. Nixon, C.D. Eckert, and N.L. Hughes. 2003. *Birds of the Yukon Territory*. University of British Columbia Press, Vancouver, British Columbia. 595 pp.

## Appendix 1: Technical summary for Ontario

Species: Canada Warbler (*Cardellina canadensis*)

### Demographic information

Demographic attribute	Value
Generation time. Based on average age of breeding adult: age at first breeding = X year; average life span = Y years.	Approximately 2 years Based on IUCN estimate (Bird <i>et al.</i> 2020)
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	No. Population size has been stable or increasing since 2012
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Not applicable. Population size has been stable or increasing since 2012
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	Population stable or increasing. Inferred based on Breeding Bird Survey data for Canada
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature	unknown

Demographic attribute	Value
individuals over any 10 years, or 3 generations, over a time period including both the past and the future.	
Are the causes of the decline (a) clearly reversible, and (b) understood, and (c) ceased?	a. Unknown b. Yes c. No
Are there extreme fluctuations in number of mature individuals?	No

#### Extent and occupancy information in Ontario

Extent and occupancy attributes	Value
Estimated extent of occurrence (EOO). <i>If value in COSEWIC status report is not applicable, then use <a href="http://geocat.kew.org">geocat.kew.org</a>. State source of estimate.</i>	1,115,243 km <sup>2</sup> Based on GeoCat estimate.
Index of area of occupancy (IAO). <i>If value in COSEWIC status report is not applicable, then use <a href="http://geocat.kew.org">geocat.kew.org</a>. State source of estimate.</i>	10,108 km <sup>2</sup> Based on GeoCat estimate.
Is the total population severely fragmented? i.e., is >50% of its total area of occupancy is in habitat patches that are: (a) smaller than would be required to support a viable population, and (b) separated from other habitat patches by a distance larger than the species can be expected to disperse?	a. No b. No
Number of locations. <i>See Definitions and Abbreviations on COSEWIC and IUCN websites for more information on the term "location". Use plausible range to reflect uncertainty if appropriate.</i>	~12,000 since 2010
Number of NHIC Element Occurrences <i>Request data from MNRF.</i>	>18,000
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	No
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	No
Is there an observed, inferred, or projected continuing decline in number of sub-populations or EOs?	No
Is there an observed, inferred, or projected continuing decline in number of locations?	No
Is there an observed, inferred, or projected continuing decline in [area, extent and/or quality] of habitat?	No
Are there extreme fluctuations in number of populations?	No
Are there extreme fluctuations in number of locations?	No

<b>Extent and occupancy attributes</b>	<b>Value</b>
Are there extreme fluctuations in extent of occurrence?	No
Are there extreme fluctuations in index of area of occupancy?	No

Number of mature individuals in each sub-population or total population (if known)

<b>Sub-population (or total population)</b>	<b>Number of mature individuals</b>
Ontario	unknown

Quantitative analysis (population viability analysis conducted)

N/A

## Threats

Key threats (based on COSEWIC 2020) were identified as:

- I. Livestock farming and ranching (IUCN 2.3), primarily on the wintering grounds – medium threat impact
- II. Logging and wood harvesting (IUCN 5.3), primarily on the wintering grounds, but also to a lesser extent on the breeding grounds – medium threat impact
- III. Climate change and severe weather (IUCN 11), especially drought on the wintering grounds – low to medium threat impact
- IV. Residential and commercial development (IUCN 1), notably collisions with tall – low threat impact
- V. Annual and perennial non-timber products (IUCN 2.1), primarily on the wintering grounds – low threat impact
- VI. Energy production and mining (IUCN 3) – low threat impact
- VII. Utility and service lines (IUCN 4.2), especially collisions with communication towers – low threat impact
- VIII. Other ecosystem modifications (IUCN 7.3) – low threat impact.

## Rescue effect

<b>Rescue effect attribute</b>	<b>Value</b>
Does the broader biologically relevant geographic range for this species extend beyond Ontario?	Yes
Status of outside population(s) most likely to provide immigrants to Ontario	S5
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Yes

<b>Rescue effect attribute</b>	<b>Value</b>
Does the broader biologically relevant geographic range for this species extend beyond Ontario?	Yes
Would immigrants be adapted to survive in Ontario?	Yes
Is there sufficient suitable habitat for immigrants in Ontario?	Yes
Are conditions deteriorating in Ontario?	Unknown
Is the species of conservation concern in bordering jurisdictions?	Yes
Is the Ontario population considered to be a sink?	No
Is rescue from outside populations likely?	Yes

## Sensitive species

No.

## Acronyms

COSEWIC: Committee on the Status of Endangered Wildlife in Canada  
COSSARO: Committee on the Status of Species at Risk in Ontario  
ESA: Endangered Species Act  
EO: Element occurrence (as defined by NHIC)  
EOO: extent of occurrence  
GRANK: global conservation status assessments  
IAO: index of area of occupancy  
IUCN: International Union for Conservation of Nature and Natural Resources  
MNRF: Ministry of Natural Resources and Forestry  
NHIC: Natural Heritage Information Centre  
NNR: Unranked  
NRANK: National conservation status assessment  
SARA: Species at Risk Act  
SNR: unranked  
SRANK: subnational conservation status assessment  
S1: Critically Imperiled  
S2: Imperiled  
S3: Vulnerable  
S4: Apparently Secure  
S5: Secure  
IUCN: International Union for Conservation of Nature and Natural Resources  
CDSEPO: Le Comité de détermination du statut des espèces en péril en Ontario