

O Canada Warbler, We Stand on Guard for Thee



by Becky Stewart, Becky Whittam, and Jon McCracken
Photos by Robert Taylor

Called “the biggest Irish twitch of all time” and “an absolute stunner,” a young Canada Warbler made Irish birding history, and the national TV news, when it appeared in a sycamore tree in Kilbaha, Ireland on October 9, 2006. Over 500 birders traveled to the area, several by chartered flight, just to catch a glimpse of this very lost bird.

Here in Canada, the Canada Warbler breeding population is estimated to be between 1.2 and 2.7 million individuals. While it is not exceptionally abundant by landbird standards, the species hardly qualifies as a rarity here. However, if conservation action isn't taken, the Canada Warbler may become just that. Results from the Breeding Bird Survey suggest that Canada Warbler populations have declined by an average of 4.5% per year since 1968 (Figure 1). Only 40 years ago, the population numbered somewhere between 10 and 16 million individuals. This substantial and rapid decline led the national Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to designate the Canada Warbler as *Threatened* in April 2008.

COSEWIC isn't the only group to recognize the Canada Warbler as threatened. The North American Bird Conservation Initiative has listed the Canada Warbler as a species of high conservation priority. Unfortunately, the factors causing its decline are complex and not entirely clear. The Canada Warbler is one of the least-studied wood-warblers and we know very little about its breeding ecology, habitat use, and the potential negative impacts of habitat and environmental change. But let's begin with what we do know about this 'necklaced warbler.'

Eighty-five percent of all Canada Warblers breed in Canada, where their range extends from the southeastern tip of Yukon to the Maritimes (Figure 2). The highest population densities are in New Brunswick, Ontario, and Québec. Across the country, Canada Warblers are found in a variety of forest types, from conifer swamps to riparian woodlands; they are most common in cool, damp, mixed deciduous-coniferous forests with dense understoreys.

A well-developed understorey is a nesting requirement. Canada Warblers build their nests on or near the ground, amongst tightly packed ferns or thickets, in upturned tree root masses, fallen logs,

stumps, and recessed pockets of moss hummocks. Because of their preference for dense habitats, Canada Warblers (although brightly coloured and highly active foragers) are more frequently heard than seen. Their song begins with a single chip and a distinct pause followed by a variable jumble of short, abrupt notes (described by some as a 'backwards Common Yellowthroat' song). Canada Warbler males often continue to sing late into the nesting season.

Despite their name, Canada Warblers spend relatively little time in Canada. Arriving on their breeding grounds in late May and leaving before the end of August, they are often referred to as “one of the

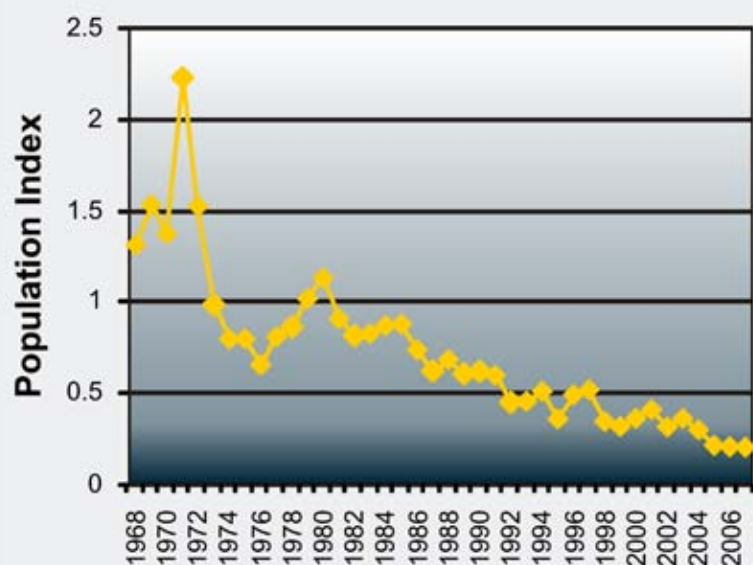


Figure 1. Annual population change of Canada Warbler from 1968-2007, based upon the Breeding Bird Survey in Canada./**Figure 1.** Changements dans l'effectif de la Paruline du Canada, 1968-2007.



forest has been cleared for agriculture and oil and gas development. It should be noted that Canada Warblers can breed successfully in regenerating forest stands if they are managed as mixed deciduous-coniferous stands with high shrub densities, a structurally complex forest floor, and residual trees to serve as song perches. However, managed stands are temporary and only serve as suitable Canada Warbler breeding habitat for 6 to 20 years post-harvest.

Another, perhaps surprising, factor that may be adversely affecting Canada Warbler in some regions is the recent population growth of white-tailed deer in North America. High levels of browsing pressure reduce understorey vegetation and thus breeding habitat in localized areas of high deer abundance. In addition, although the Canada Warbler is not a spruce budworm specialist like the Tennessee Warbler, some biologists suggest that its population size corresponds with patterns of spruce budworm outbreaks. Spruce budworm management and the resulting decline in outbreaks in recent decades could be adversely affecting Canada Warbler populations, but the mechanisms are not at all clear.

In South America, where the species spends the bulk of its time, pressures are particularly great. Human population growth rates are high and habitat is being lost at an unprecedented rate. In fact, the forests of the northern Andes are among

last warblers to arrive and one of the first to depart” for their wintering grounds in South America. As they make their way south, Canada Warblers pass through as many as 10 countries. Whether they are pausing to refuel at a floodplain forest in North Carolina or a black mangrove forest in western Panama, a well-developed shrub layer is a key feature of any Canada Warbler stopover site.

The Canada Warbler is one of only 30 migrant bird species that overwinter in South America’s Andean forests. The bulk of the population appears to overwinter in the dense undergrowth of Colombia’s primary forests in the northern Andes, at elevations of 1000 to 2100 m. They are also found in second-growth forests, shrubby forest edges, coffee plantations, and other more open areas such as hedgerows. Farther south, in Ecuador and Peru, Canada Warblers are most common in rainforests on the Andes eastern slopes but can also be found in adjacent lowlands, at elevations ranging from 300 to 1700 m. On their wintering grounds, Canada Warblers join mixed-species foraging flocks that include other migrants like Blackburnian and Cerulean warblers as well as several resident bird species.

The potential factors contributing to this species’ decline are numerous and complex. Habitat loss and degradation on the breeding grounds are one possibility. Forestry practices that reduce the shrub layer in managed forest stands decrease

the amount of suitable breeding habitat available. Canada Warblers may also be sensitive to forest fragmentation; some research has found that they occur most frequently in large contiguous forest patches (over 3000 hectares) and are entirely absent from forest patches under 187 hectares.

In eastern North America, the draining of swamp forests for agriculture, commercial, and residential development has resulted in extensive habitat loss, while in western Canada, boreal mixed-wood



Figure 2. Canada Warbler range./**Figure 2.** Aire de répartition de la Paruline du Canada. Source: Data provided by NatureServe in collaboration with Robert Ridgely, James Zook, The Nature Conservancy - Migratory Bird Program, Conservation International - CABS, World Wildlife Fund - US, and Environment Canada - WILDSPACE.

the most threatened in the world. Since the 1970s, more than 90% of the northern Andes' primary forests, including 95% of the cloud rainforest, have been cleared and converted to coffee, coca, and cacao (chocolate) plantations, dairy farms, illegal drug farms, and other agricultural uses. Additional habitat loss is associated with pipeline development, road construction, and non-selective herbicide spraying aimed at removing illegal drug crops. Ecuador and Peru's cloud forests are under similar pressures, although deforestation is occurring at a somewhat lesser rate.

Although we have not yet pinpointed the source of the declines, it is important that Canadians work to keep our Canada Warbler common. Here are some actions we can take as individuals to improve the odds for this declining species.

Drink Shade-grown, Bird Friendly Coffee

North Americans drink 300 million cups of coffee per day and import 1.5 billion kilograms of coffee each year. Some practices are placing enormous pressure on already dwindling tropical ecosystems. In the last 20 years, the high demand for coffee (and chocolate) have led to monoculture sun-coffee and cacao plantations, which produce substantially increased yields, but support little wildlife, and require intense management (including the use of chemical fertilizers and insecticides).

On the other hand, shade-grown coffee is grown using traditional agroforestry techniques where coffee bushes are planted under a forest overstorey and a mixture of nitrogen-fixing tree species are planted to supply shade. Up to 40 tree species can be found in some shade-coffee plantations. This multi-layered vegetation structure provides food and cover for many bird species. In fact, of all the agricultural systems in the tropics, shade-coffee plantations host some of the highest numbers of migratory birds, often only exceeded by primary forests. In Colombia, where Canada Warblers overwinter, 69% of coffee plantations are cultivated in open sun and are of little benefit to either migrant or resident bird species.

As consumers, we can influence the industry by purchasing only shade-grown coffee. If you can't buy it where you live, request that it be made available. And be sure and tell your coffee- and chocolate-

loving friends about the troubles faced by the Canada Warbler and many other Canadian birds. Although citizen scientists, researchers, and birdwatchers are only too aware of the plights faced by songbirds, many people simply don't know about these problems and how their everyday choices impact birds.

Be Habitat Stewards

Those of us who own a woodlot or can influence the management of crown or private forests can work to safeguard Canada Warbler habitat by protecting or encouraging the protection of large, contiguous patches of riparian woodland and swamps. We can also use or encourage the use of forest practices that protect or create a dense shrub layer and maintain structural complexity. Promoting wide riparian and wetland buffers will also benefit this and many other species.

Participate in Breeding Bird Atlases

Breeding bird atlases are currently underway in the Maritimes and British Columbia, and are scheduled to begin in Manitoba and Québec in the next two years. Thousands of citizen scientists collect the information that is needed to map the distribution and abundance of breeding birds. The results are subsequently used to assess the status of species, identify

areas of high importance, set conservation priorities, and frame conservation actions.

What is Needed at the International Level?

Conservation of migratory birds poses numerous challenges, one of the greatest being a requirement for coordinated planning and action across geopolitical borders. At Bird Studies Canada, we hope to see the formation of an international Canada Warbler working group, similar to what is in place already for some other species like Cerulean Warbler, Golden-winged Warbler, and Rusty Blackbird. The group would consist of scientists, land managers, conservation planners, and industry representatives from across North and South America. A great deal of research is needed to determine the key limiting factors and to best target stewardship and management actions on the breeding and wintering grounds.

Of all the birds that are declining in North America, Canadians should feel a particular sense of stewardship for this small bright warbler that shares our country's name and provides an emblem for Bird Studies Canada's goals and actions. By starting now, we can hope that in 20 years, birders won't feel compelled to charter flights to 'twitch' the lone, singing Canada Warbler just spotted east of St. Leonard, New Brunswick.



La Paruline du Canada, espèce menacée

Non seulement la Paruline du Canada évoque-t-elle notre pays, mais elle constitue l'emblème d'Études d'Oiseaux Canada et de nos activités scientifiques et objectifs de conservation.

Le nombre de nicheurs au Canada qui appartiennent à cette espèce oscille entre 1,2 et 2,7 millions selon les estimations. Les données du Relevé des oiseaux nicheurs révèle que l'effectif a chuté de 4,5 % par année depuis 1968. Il y a seulement 40 ans, la population était de 10 à 16 millions. Devant cette baisse marquée et rapide, le Comité sur la situation des espèces en péril au Canada (COSEPAC) a classé la Paruline du Canada parmi les espèces *menacées* en avril 2008.

Quatre-vingt-cinq pour cent des Parulines du Canada nichent ici; leur aire de répartition s'étend du Yukon jusqu'aux Maritimes. C'est au Nouveau Brunswick, en Ontario et au Québec que la densité des populations nicheuses est la plus forte. L'espèce fréquente des forêts de divers types, en particulier les forêts mixtes (de feuillus et de conifères) fraîches et humides où le sous-étage est dense. Bien que la Paruline du Canada arbore un plumage éclatant et qu'elle se déplace beaucoup pour chercher sa nourriture, on la repère plus souvent par son chant que visuellement, car elle préfère les milieux où la végétation est touffue.

Malgré son nom, cette paruline passe relativement peu de temps au Canada. Elle vient occuper son lieu de nidification à la fin mai et repart dès juillet pour ses quartiers d'hiver, en Amérique du Sud. La plupart des individus y vivent dans les montagnes et sur leurs contreforts en Colombie, dans les forêts vierges du nord des Andes, à des élévations de 1 000 à 2 100 mètres. Plus au sud, en Équateur et au Pérou, on trouve la Paruline du Canada en abondance dans les forêts tropicales humides sur les pentes orientales des Andes.

Les causes de la baisse d'effectif de l'espèce sont nombreuses et complexes. Certaines pratiques forestières et sylvicoles entraînent une diminution et une dégradation de l'habitat de l'aire de reproduction. La fragmentation des forêts pourrait aussi entrer en jeu. Dans l'est de l'Amérique du Nord, l'assèchement de forêts marécageuses pour l'exploitation



agricole et commerciale et l'aménagement de zones domiciliaires s'est soldé par d'importantes pertes d'habitat. Par ailleurs, dans l'Ouest canadien, on a fait du déboisement dans la forêt boréale mixte pour l'agriculture et l'exploitation de réserves de pétrole et de gaz.

La hausse récente de la population de cerfs de Virginie sur le continent nord américain pourrait nuire à la Paruline du Canada, car le broutage réduit la végétation du sous étage des forêts et l'habitat de reproduction là où les cerfs sont abondants. La gestion de la tordeuse des bourgeons de l'épinette et, par conséquent, la réduction du nombre d'infestations pourraient aussi être nuisibles pour l'effectif de cette paruline.

En Amérique du Sud, où l'espèce passe la majeure partie de son temps, la pression exercée par les populations humaines est forte et l'habitat s'amenuise à un rythme sans précédent. Depuis les années 1970, plus de 90 % des forêts vierges du nord des Andes, dont 95 % de la forêt pluviale montagnarde, ont été déboisées pour la production de café, de coca et de cacao (chocolat), l'établissement de fermes laitières, la culture de plantes servant à produire des drogues illicites

et pour d'autres usages agricoles. La construction de pipelines et de routes et la pulvérisation non sélective d'herbicides ont entraîné d'autres pertes d'habitat. Les forêts pluviales montagnardes de l'Équateur et du Pérou subissent des pressions comparables.

Dans les prochains mois, Études d'oiseaux Canada espère diriger la formation d'un groupe international de conservation de la Paruline du Canada. L'objectif visé sera d'élaborer une approche rigoureuse sur le plan scientifique afin de stopper, voire de renverser, la chute des effectifs. Il faut mener d'autres recherches pour cibler les mesures d'intendance.

Nous devons lutter pour contrer la menace qui pèse sur la Paruline du Canada. Chaque personne peut faire plusieurs gestes pour aider la cause : entre autres, participer aux travaux d'établissement d'atlas des oiseaux nicheurs, préserver de vastes étendues contiguës de bois riverains et de marécages ou favoriser leur préservation, et boire du café produit sous couvert forestier et sans nuire aux oiseaux pour protéger l'habitat d'hiver de l'espèce.