

# Monitoring the State of Ontario's Migratory Landbirds



## Ontario's Migratory Landbirds: Who are they?

Red-winged Blackbird Photo: Ron Ridout

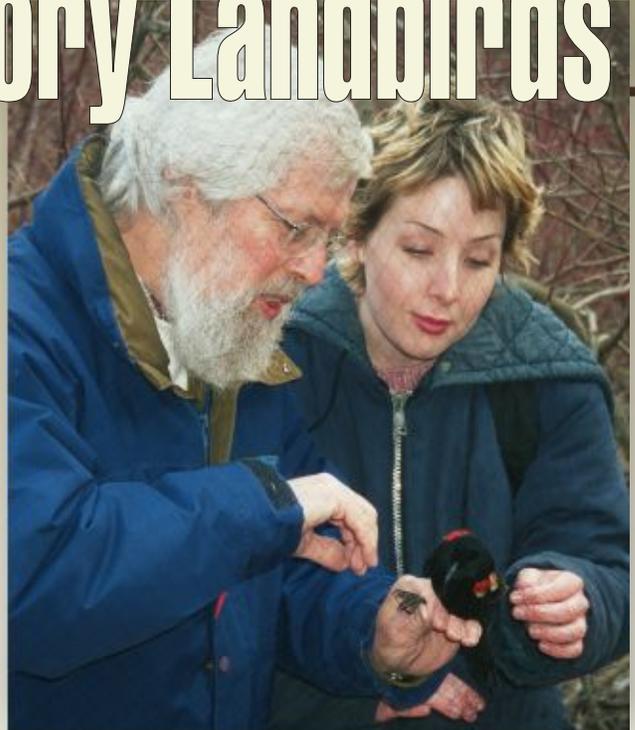


Photo: Ron Ridout

**B**irds are a large and diverse group. For conservation planning purposes, birds are often placed into one of four broad categories: landbirds, shorebirds, waterbirds, and waterfowl. Songbirds (passerines and their close relatives), along with hawks, owls, and grouse, are called “landbirds” because their life cycle is largely terrestrial.

Landbirds make up about half of all bird species that regularly occur in Ontario, and more than 80% of these landbirds are migratory. Ontario's migratory landbirds include species that breed in all habitats and regions of Ontario - from the Hudson Bay tundra to the farm fields and Carolinian forests of southwestern Ontario. During the winter months, these same species can be found anywhere from southern Ontario to the northern parts of South America.

This report covers the 145 species of migratory landbirds that breed regularly in Ontario. It does not deal with landbirds that are non-migratory, year-round residents.

## The Value of Birds

Birds are a highly valued component of Ontario's biodiversity for many reasons:

- ◆ As a group, birds are the most visible and best-known wildlife in Ontario.
- ◆ Birds are ecologically important, providing critical natural services such as insect pest control, plant pollination, and seed dispersal services that benefit forestry and agriculture.
- ◆ Birds are effective indicators of overall biodiversity, and efforts to conserve birds will also result in the conservation of many other species of wildlife and a wide range of habitats.
- ◆ Birds are of considerable economic importance, as a source of recreation and sustenance activities that involve some five million people and generate more than one billion dollars in economic activity annually in Ontario.
- ◆ Birds are culturally important as symbols of freedom, beauty, and inspiration.

## Migratory Birds Know

### No Borders

A migratory bird's view of the world is very different from the human perspective. Political boundaries have no meaning for birds. Birds that we think of as “ours” often actually spend most of their lives outside of Ontario.

For example, a Canada Warbler hatched in northern Ontario will start to migrate southwards by mid August. By the end of September, it will have moved through Central America and be nearing its wintering grounds in the northern Andes of South America. It will remain on its wintering territory for up to 5 months. In early spring, it will be on its way back north, finally reaching its breeding area in Ontario in late May. Once it has found a mate, it will spend the next few months building a nest, laying eggs, and caring for its young, before heading south again. Thus, an adult Canada Warbler may spend as little as 3 months in Canada, with the rest of the year being spent on migration or on its wintering grounds!

Migratory birds know no borders, and so their conservation requires international cooperation.



Canada Warbler Photo: Jim Flynn

## Why Monitor Migratory Landbirds?

**W**hy should we be concerned about the state of migratory landbirds in Ontario? Why do we need to know whether bird populations are increasing or decreasing especially for species that are widespread and abundant, such as the American Robin? There are a number of important reasons.

### Monitoring for conservation

Governments and conservation organizations in Ontario, Canada, and around the world have committed to maintaining the earth's biological diversity. Birds are a highly valued component of Ontario's biological diversity.

The history of the Passenger Pigeon provides the best argument for monitoring all birds, including common species, in order to conserve biodiversity. At the time of European settlement, the Passenger Pigeon was by far the most abundant bird in North America, with a population of 3 to 5 billion individuals. Within about 50 years (1865-1914), this species went from super-abundant to extinct. In the absence of monitoring programs, by the time anyone realized that this species was in serious trouble, it was too late.

Bird conservation in Ontario is increasingly part of a broad, continental initiative -- the North American Bird Conservation Initiative (NABCI). Under NABCI, continental and regional conservation plans are being prepared for landbirds, waterbirds, waterfowl, and shorebirds. Monitoring is an integral part of these conservation plans. Long-term monitoring is needed to identify those species in particular need of management action, to determine the response of bird populations to conservation actions, and to evaluate the effectiveness of management plans.

The international partnership coordinating the conservation of landbirds is known as Partners in Flight (PIF). PIF has recently published the North American Landbird Conservation Plan, which provides a continental synthesis of the priorities and objectives that will guide landbird conservation actions at regional, national, and international scales.

## Monitoring birds as bio-indicators

Another reason to monitor birds is that they are good indicators of environmental health. Birds are sensitive to many kinds of environmental disturbances. Healthy bird populations require healthy ecosystems, which are also needed by all wildlife and people. Changes in bird populations can signal changes in habitat, climate, or pollution levels. Certain bird species are particularly sensitive to toxic chemicals and are considered bio-sentinels.

## Migratory birds as ambassadors

Migratory birds are wonderful ambassadors for the environment. Because people recognize the value of birds, they can understand the need to protect birds, their habitats, and the environment. Migratory birds are particularly important as ambassadors because they are international travellers and draw attention to the interconnectedness of the global environment.

## Threats Facing Ontario's Migratory Landbirds

**M**igratory birds are under pressure on many fronts. The most immediate threat is habitat loss and degradation on their breeding grounds, wintering grounds, and at migratory stopovers. Many of Ontario's migratory landbirds winter in areas that are undergoing large-scale land use changes, especially expansion and intensification of agriculture, with the associated loss of forest, shrub, wetland, and grassland habitats. Habitat loss, degradation, and fragmentation are also of concern on the breeding grounds - particularly in southern Ontario and in the boreal forest.

Other pressures include climate change, pollution, the ecological impact of invasive species, the spread of avian diseases, and collisions with man-made structures. Problems facing Ontario's migratory birds are not restricted to this province. Solving these problems requires international cooperation and coordination, which in turn depend upon grassroots local and regional actions.

### **Birds are excellent environmental indicators because:**

- ◆ They are present in all habitats.
- ◆ They respond quickly to environmental change.
- ◆ Many species are sensitive to toxic chemicals, and therefore are bio-sentinels – much like how coal miners once used canaries to test for the presence of toxic gases.
- ◆ They are highly mobile and will either desert habitats that no longer meet their environmental needs or colonize habitats that have been altered and now satisfy their needs.
- ◆ They are well known and well studied. Historical data on bird species' distribution and abundance exist, and additional data are relatively inexpensive to collect.
- ◆ They are relatively easy to detect and count, and volunteer-based programs can be used to monitor them across large regions.
- ◆ They have widespread popular appeal and, therefore, make good flagship species for conservation.

## How Do We Monitor Landbirds?

**C**ompared to other organisms, Ontario's migratory landbirds are well known and easy to monitor. During the breeding season, landbirds can be readily detected, identified, and counted. Because landbirds are both familiar and fascinating to many people, large-scale monitoring programs can rely on a large volunteer corps of amateur bird watchers (“Citizen Scientists”) to collect data across large geographic areas.

A variety of volunteer-based monitoring programs are tracking the ups and downs of Ontario's landbird populations. These programs are delivered by government and (increasingly) non-government organizations like Bird Studies Canada.



Photo: Ron Ridout



Photo: Ron Ridout

Bruce Peninsula Bird Observatory, and Pelee Island Bird Observatory. Four additional stations focus on monitoring migrating populations of hawks, eagles, and falcons – Greater Toronto Raptor Watch, Niagara Peninsula Hawk Watch, Hawk Cliff, and Holiday Beach Migration Observatory.

### **Monitoring landbirds on their breeding grounds**

The primary long-term bird monitoring program in Ontario is the North American Breeding Bird Survey (BBS). Since 1968, highly skilled volunteers have spent a day each summer surveying birds along roadside routes established across the province.

The largest monitoring program in terms of volunteer involvement is the Ontario Breeding Bird Atlas. Ontario's first Atlas project was completed from 1981-85. Fieldwork for the second Ontario Atlas spans the period from 2001-05. By comparing species distributions from the first and second Atlases, we can view an exceptionally detailed picture of changes that have occurred in the province's bird life over the past 20 years.

### **Other bird monitoring programs in Ontario**

The Forest Bird Monitoring Program (FBMP) and Marsh Monitoring Program (MMP) were developed to monitor birds breeding in specific habitats that are not well sampled by the roadside BBS survey. Launched in 1987 by the Canadian Wildlife Service, the FBMP targets birds breeding in mature forest-interior habitats. Since 1995, the MMP (a joint program of Bird Studies Canada and Environment Canada) has been monitoring birds breeding in marsh habitats around the Great Lakes basin.

Other special surveys, such as the Ontario Nocturnal Owl Survey, have been developed to monitor species that are not well monitored by other programs. Various intensive surveys have also been developed to monitor endangered species. Finally, the Christmas Bird Count and Project FeederWatch track the winter distribution and abundance of birds across North America.

### **Monitoring landbirds on migration**

Since 1960, Long Point Bird Observatory (LPBO) volunteers have been tracking the number of landbirds at Long Point, on the north shore of Lake Erie, every day during spring and fall migration. LPBO pioneered the concept of migration monitoring in North America. The premise of migration monitoring is that the number of birds detected at a migration concentration site can be used to generate population indices that can in turn be used to determine long-term trends. Migration monitoring is the only cost-effective means of monitoring populations of birds that breed in remote, inaccessible parts of northern Ontario.

Since 1991, many additional stations have started migration monitoring programs in Ontario and across Canada. These stations have banded together, under the auspices of Bird Studies Canada and the Canadian Wildlife Service, to form the Canadian Migration Monitoring Network. Eight such stations now operate in Ontario – Innis Point Bird Observatory, Prince Edward Point Bird Observatory, Thunder Cape Bird Observatory, Toronto Bird Observatory, Haldimand Bird Observatory, Long Point Bird Observatory,



Snow Buntings Photo: Ron Ridout

## How Are Monitoring Data Used?

Effective monitoring programs must not only produce reliable data, but must help inform decision-making by resource managers and governments. Some examples are outlined in this section.

### Bird conservation planning

In North America, landbird conservation plans are being developed at the continental and regional levels, including a plan for Ontario. Monitoring data are used in these plans to assess the conservation status of all species and identify those that are most in need of attention. Monitoring data are also used to determine if the conservation actions resulting from these plans are effective in achieving population objectives (e.g., increasing populations to reach target levels).

### Species at risk status assessments

Monitoring data are used extensively to assess the status of species that are considered rare or declining and therefore at risk of extinction. Monitoring data also tell us whether recovery actions are effective in reversing declines and recovering populations. For example, the Eastern Bluebird was formerly considered Threatened in Ontario. As a result of nest box programs and other conservation actions, the bluebird population has made a dramatic comeback, and it is no longer considered to be at risk. Monitoring data show that since 1968, the Ontario bluebird population has increased by more than 7% annually.

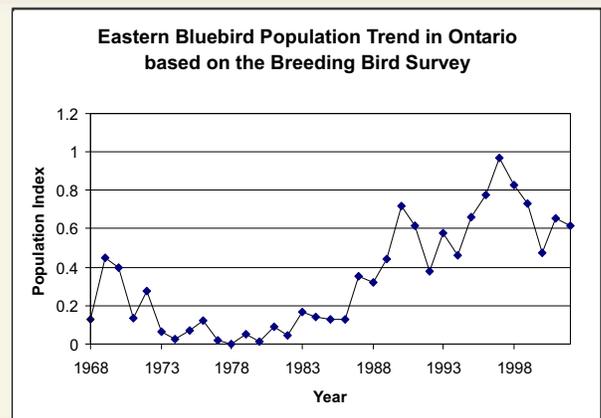


## Ontario's Wildlife Assessment Program

One example of an application of bird monitoring data by resource managers is the Ontario Ministry of Natural Resources' Wildlife Assessment Program. The Class Environmental Assessment for Timber Management on Crown Land in Ontario requires the Ministry to monitor populations of representative forest vertebrates. As such, 92 focal species have been selected for monitoring because they are potentially affected by forestry activities. Of these, 51 are birds, 32 of which are migratory landbirds. Since most of these focal species breed in forest habitats in northern Ontario, migration monitoring provides the most cost-effective means of tracking their population trends.



Eastern Bluebird Photos: Ron Ridout



## Ontario's Migratory Landbirds: A Continental Perspective

The conservation status of landbirds in North America was recently assessed as part of the continental landbird conservation planning process. Forty-three of the species covered in this report were identified as Species of Continental Importance, including 16 that are on the Partners in Flight Watch List and 37 that are identified as Stewardship Species. The Watch List includes species for which there are range-wide concerns and that are most in need of conservation action in North America. Stewardship Species have a high percent of their global population restricted to a single bio-region.

From a continental or global perspective, most migratory landbirds breeding in Ontario are widespread to very widespread, and common to abundant. However, about a quarter of the species included in this report have been identified as of conservation concern from a continental perspective because of their limited geographic distribution, relatively small population size, or declining population trends.

Although we are concerned about all bird species, Ontario has a particular responsibility for ensuring the conservation of those species for which the province supports a substantial portion of the global population. Migratory landbirds for which Ontario has a very high conservation responsibility are:

- Bay-breasted Warbler
- Blackburnian Warbler
- Black-throated Green Warbler
- Canada Warbler
- Chestnut-sided Warbler
- Connecticut Warbler
- Mourning Warbler
- Northern Shrike
- Ovenbird
- Smith's Longspur
- Veery

## The State of Ontario's Migratory Landbirds

So what have we learned about the state of Ontario's migratory landbird populations from monitoring programs? This section summarizes available information, highlights those species and groups of species whose populations or distributions have changed over the past few decades, and interprets the observed trends in terms of species conservation needs or links to changes in environmental conditions.

The 145 species covered in this report have been grouped into eight suites, most of which are based on broad habitat requirements, including woodland, shrubland, grassland, and wetland habitats. Another suite includes aerial insectivores, which are birds that breed in various habitats, but share a common foraging strategy of feeding on flying insects. The habitat generalist suite is a catchall category that includes widespread, non-specialized species that occupy a variety of habitats. The geographically restricted suite includes all species whose breeding distribution in Ontario is restricted to a single region. Finally, the migratory raptor suite includes hawks, falcons, eagles, and owls.

A brief synopsis of the state of each suite of birds is presented. Somewhat more detailed information is summarized in separate tables (along with an accompanying legend) at the end of this report.



American Goldfinch Photo: Ron Ridout

## Forest species

Ontario's forest habitats are very diverse, ranging from the Carolinian forests in the southwest to the northern boreal forests. Ontario's woodland bird life is similarly diverse, and Ontario has a high conservation responsibility for many forest bird species.

This large suite includes 44 species that breed exclusively in woodlands (Table 1). Most of these species are widespread in the province, but four breed mostly in southern Ontario (Cerulean Warbler, Yellow-throated Vireo, Wood Thrush, and Great Crested Flycatcher). The Northern Parula is found almost entirely in central Ontario.

Many forest birds are tracked by several monitoring programs, but no one program covers the entire Ontario range of a species. Differences in the trends for some species (e.g., Ruby-crowned Kinglet) generated by breeding bird versus migration monitoring programs may reflect regional differences between populations occurring in southern versus northern Ontario.

The overall state of woodland landbirds in Ontario is mixed, but species with increasing populations outnumber those with declining trends. Populations of some insectivorous forest birds are known to fluctuate in synchrony with outbreaks of forest insects such as the spruce budworm.

A few woodland species show persistent declining trends. The Cerulean Warbler has undergone a severe range-wide decline across North America, according to continental BBS data. BBS and Atlas data indicate that the Olive-sided Flycatcher has undergone a severe decline in Ontario over the past three decades. Likewise, Rusty Blackbird and Purple Finch populations have declined by more than 50% over the past 30 years, although neither of these northern forest species is well monitored by the BBS. Ruby-crowned Kinglet populations monitored by BBS also show a strong declining trend.

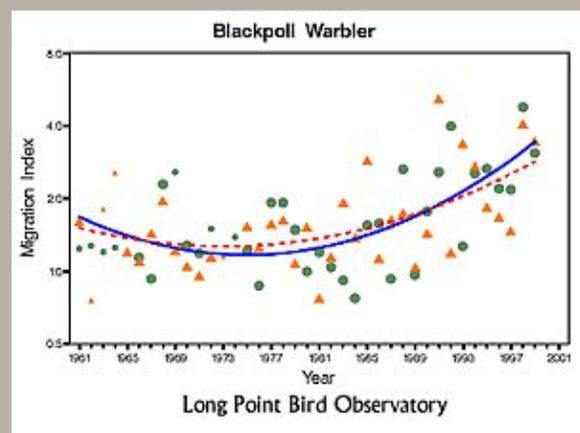
Although a number of woodland species, such as the Blackpoll Warbler, show a long-term positive trend since the 1960s, some of these appear to be experiencing declines in the past decade. Forest birds that are more widespread in southern Ontario during the second Atlas include Pine Warbler, Northern Parula, and Blue-headed Vireo.



Blackpoll Warbler Photo: Jim Flynn

## Woodland Focal Species: Blackpoll Warbler

The Blackpoll Warbler is a common summer resident in the boreal forests of northern Canada. Most of this species' breeding range is outside of the area covered by BBS, so migration monitoring is the only practical method of monitoring this species. Data collected at Long Point Bird Observatory show a long-term increasing trend in the number of Blackpoll Warblers passing through Long Point during spring and fall migration.



## Shrubland species

This suite includes 25 species of migratory landbirds that breed in shrubland habitats, including riparian thickets, shrubby fields, forest edges, and clear cuts (Table 2). Many of these habitats are young successional stages that develop as a result of natural or man-made disturbances such as wildfires, logging, or clearing for agricultural purposes.

Successional shrublands are inherently ephemeral, which means that these species need to constantly seek out new areas to colonize as their open habitats become closed in and forested. As such, this suite is a sensitive indicator of the level of recent environmental disturbances and changing land use.

Seven shrubland species occur only in southern Ontario (Yellow-billed Cuckoo, Eastern Towhee, Field Sparrow, Blue-gray Gnatcatcher, Willow Flycatcher, Blue-winged and Golden-winged warbler). Very limited information is available on population trends for the three northern-breeding warblers: Orange-crowned, Connecticut, and Palm warblers.

The state of shrubland landbirds in Ontario appears to be mixed, with about equal numbers of species showing increases and decreases over the long- and short-terms. Brown Thrasher is the only shrubland species that shows a statistically significant long-term decline. Three of the six species that show long-term increasing trends also show changes in their breeding distribution. The ranges of the Blue-winged Warbler, Golden-winged Warbler, and Blue-gray Gnatcatcher have expanded dramatically northwards into southern Ontario within the past century.



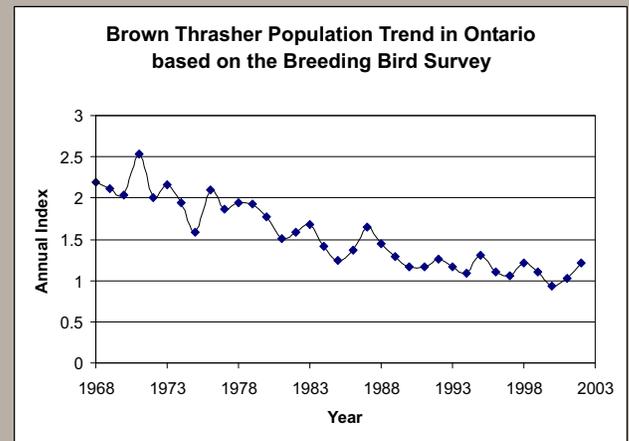
Brown Thrasher Photo: Jim Flynn

### Shrubland Focal Species: Brown Thrasher

The Brown Thrasher is typically found in open shrubland, including hedgerows, shrubby fields, and woodlot edges. Populations of this common species have shown persistent long-term declines throughout its breeding range. This decline has been attributed to changing land use patterns, particularly a decrease in the amount of land used for low intensity farming as a result of retirement of marginal farmland and intensification on productive lands.



Yellow-billed Cuckoo Photo: Jim Flynn



## Grassland species

Although grasslands are not a dominant natural habitat in Ontario, the province does have a variety of native and cultural grassland habitats, including wet meadows, small patches of native tall-grass prairie in southern Ontario, and extensive areas of agricultural grasslands (e.g., pasture, hayfields, grain crops). Ontario encompasses a substantial portion of the global breeding range of Le Conte's Sparrow and Bobolink. Most grassland species are widespread in the province, but Grasshopper Sparrow and Eastern Meadowlark are restricted to southern Ontario.

As is the case for grassland birds throughout Canada, most of Ontario's grassland landbirds are in trouble (Table 3). Five of the nine grassland birds with population trend data show moderate to severe long-term declines. Atlas data also indicate declines in the breeding distribution of most species.

Grassland conversion and agricultural intensification are thought to be the main contributing factors in the decline of grassland birds in Ontario and elsewhere. Many of these species breed mostly in agricultural grasslands and are



Bobolink Photo: Jim Flynn

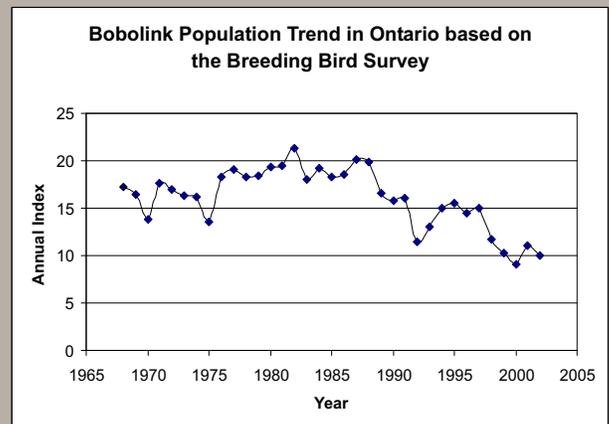
affected by changing management practices, including increased frequency of crop rotation, increased frequency of haying operations, and a reduction in the amount of livestock grazing.

## Grassland Focal Species: Bobolink

Bobolinks breed in suitable grassland habitats across southern and central Ontario. They are found primarily in hayfields and lightly-grazed pastures, but also breed in grain fields, wet meadows, lush fallow fields, and native prairie remnants. Bobolinks are long-distance migrants and spend the winter in grasslands in South America.

Changes in land use patterns during the 20<sup>th</sup> century, particularly a substantial reduction in the extent and type of hayfields, have adversely affected Bobolink populations. Nonetheless, Ontario presently supports about one-fifth of the world's population of Bobolinks and has a high responsibility for the conservation of this species. The BBS trend graph indicates that this species has undergone a substantial decline since the late 1980s. Over the past decade, the population has declined at an average rate of 6.1% annually. The population is down to about half what it was 20 years ago.

Recommended management actions include avoiding disturbing birds during the nesting period, maintaining and creating patches of suitable habitat of at least 10 to 30 hectares, and managing grassland habitats on a rotating basis to create a mosaic of habitat types. These measures will benefit many other grassland birds and other wildlife.



## Wetland species

This category includes only five species that typically nest in marshes and non-wooded riparian areas (Table 4). Other wetland birds that breed in forested or shrubby wetlands are included in those habitat groupings.

BBS data show a long-term decline in the Belted Kingfisher population in Ontario, but this trend appears to have levelled out recently. A persistent, long-term decline is apparent for the Red-winged Blackbird. Meanwhile, populations of Marsh Wrens appear to be on the increase.



Marsh Wren Photo: Jim Flynn

## Habitat generalists

The 17 species in this group breed in a variety of habitats (Table 5). These habitat generalists are widespread and abundant. For example, the American Robin breeds in diverse habitats throughout North America and is the most abundant landbird on the continent, with a total population of some 320 million individuals. Cedar Waxwing is the only one of these widespread species with more than 10% of the total population breeding in the province.

Data from the Atlas project indicate a number of changes in breeding distribution. The Red-headed Woodpecker has undergone a dramatic reduction in distribution. Likewise, both BBS and LPBO data sets indicate that this woodpecker has undergone a severe population decline of more than

50% in 25 years in Ontario. This species is considered Near-Threatened globally due to severe declines throughout its range. Atlas data also suggest that the northern breeding limits of Brown-headed Cowbird, Eastern Kingbird, and Baltimore Oriole have contracted somewhat since the 1980s. BBS data show that cowbird populations have been declining rapidly for at least 30 years, while trends for the other two species have been declining over the past two decades.

In contrast, the Mourning Dove's breeding range has expanded into northern Ontario, and Eastern Bluebirds have become much more common and ubiquitous.

As might be expected, there is no overall tendency for species in this generalist category to be increasing or decreasing. The causes of the changes noted above are not known, but are most likely attributable to changing land use patterns and possibly changes in climatic conditions.



Red-headed Woodpecker Photo: Jim Flynn

## Aerial foragers

The nine species in this suite (Table 6) all catch insects in flight. Swallows and martins are diurnal feeders, while swifts, nighthawks, and Whip-poor-wills feed primarily at dusk and dawn. Species in this suite occupy an array of habitat types.

Around the world, populations of many aerial foraging birds are in decline. The same pattern holds true in Ontario. Atlas and BBS data suggest severe to moderate declines in all aerial foragers. Populations of Chimney Swift and Common Nighthawk have undergone severe long-term declines, and the rate of decline appears to be accelerating.

The cause of the simultaneous decline in widespread populations of diverse aerial foraging species is a mystery. Climate change and changes in the availability of insect prey are possible culprits. The decline of some Barn Swallow populations in Europe has been linked to broad-scale climatic factors on their wintering grounds that appear to influence both over-winter survival and productivity in the following breeding season. Given the diverse habitats used by this group, habitat loss and degradation are unlikely to be the primary cause of the observed declines. Nonetheless, many of these species nest on man-made structures and forage in developed urban and agricultural areas and these populations are affected by changes in construction practices, farming practices, and land use patterns.

A concerted research effort is needed to understand the causes of the declines. Several aerial foraging species nest on man-made structures and could benefit from the creation of predator-resistant nesting structures. Monitoring at artificial nest structures could provide valuable information on productivity and survivorship.



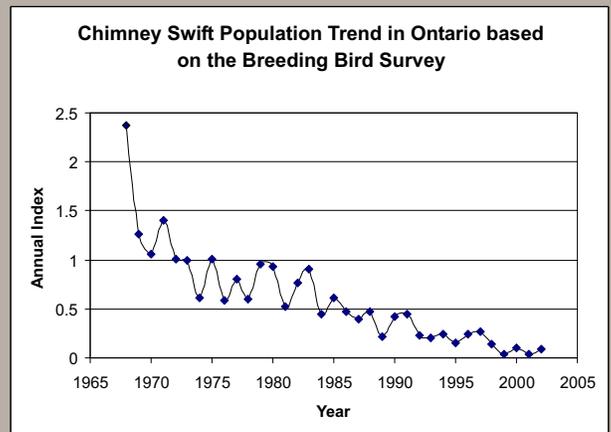
Purple Martin Photo: Ron Ridout



Chimney Swift Photo: Christian Artuso

## Aerial Foraging Focal Species: Chimney Swift

**Historically, Chimney Swifts nested in large standing hollow trees. Following the clearing of forests, this species adapted to nesting in chimneys. The availability of both types of nesting habitat has declined over the past century. Chimney Swift populations may benefit from construction of specially designed nest tower structures, as was case with the Eastern Bluebird nest box program.**



## Species with a restricted breeding distribution

This suite includes 21 species whose Ontario breeding range is restricted to a single ecoregion (Table 7). Ten of these species breed only in the northernmost Hudson Bay Plains region. Ten others breed only in Carolinian zone of southern Ontario. One species, the Western Kingbird, is found only near the western boundary of the province.

There is relatively little information on the breeding distribution, abundance, and trends for northern-breeding species. Three of these species have relatively restricted global breeding distributions, including Smith's Longspur whose total breeding range is only about 75,000 square kilometres. None of these species are covered by BBS and only three species are monitored on migration in southern Ontario. White-crowned Sparrow populations have increased somewhat according to migration monitoring data. Fox Sparrow migration indices show opposite trends in spring and fall. Human disturbances are generally very low in the northern regions, but climate change models suggest that severe impacts are possible. Migration and wintering surveys will play an important role in monitoring the impact of climate change on northern bird populations.

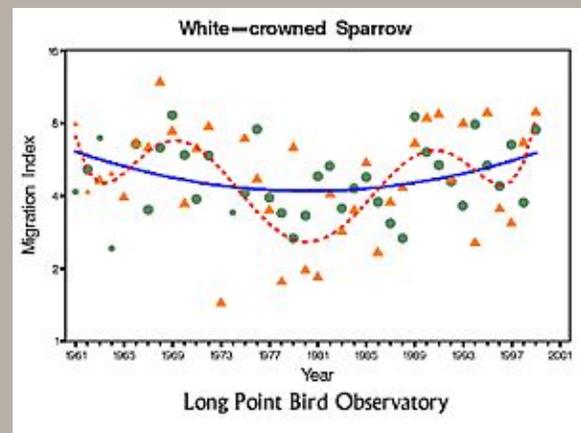
There is good information on the distribution and abundance of most of the southern-breeding species. However, populations of most of these species are too small to be tracked by general monitoring programs. Seven of the 10 species that are restricted to southern Ontario – the most intensively developed part of the province – are considered species at risk. At least one of these species, Loggerhead Shrike, is in serious trouble despite intensive recovery actions. Two species, Hooded Warbler and Orchard Oriole, are expanding their breeding distribution in Ontario. Excellent news!



White-crowned Sparrow Photo: Ron Ridout

### Restricted Range Focal Species: White-crowned Sparrow

In Ontario, the White-crowned Sparrow breeds in shrublands along the tree line of the Hudson Bay Plains. It is a common spring and fall migrant throughout the province. The Ontario population winters in the southeastern United States. Migration data from southern Ontario indicate increasing numbers. Migration monitoring is a practical tool for monitoring the impact of climate change on northern wildlife.



Orchard Oriole Photo: Ron Ridout

## Migratory raptors

Of the 14 species of migratory raptors breeding in Ontario, most have been doing well in recent decades (Table 8). Many of them are continuing to rebound from previous population declines that were attributed to direct human persecution and the wide-scale harmful effects of pesticides (particularly DDT). Nevertheless, several species (Peregrine Falcon, Golden Eagle, Bald Eagle, and Red-shouldered Hawk) are still considered to be at risk in Ontario, and warrant close monitoring and conservation. The only raptor that appears to be experiencing significant declines is the American Kestrel. This decline may be related to a loss in grassland type habitats, which kestrels favour for foraging.



Red-tailed Hawk Photo: Ron Ridout



Turkey Vulture Photo: Ron Ridout



Bald Eagle Photo: Ron Ridout



Photo: Jul Wojnowski

## Call to Action

**B**ecause migratory birds know no borders, this group of birds is a particularly good barometer of the sustainability of human activities in Ontario and the closely linked economies of North America and Latin America.

Ontario's migratory landbirds are under pressure on many fronts, due to the impact of human activities on the environment. Loss of habitat and changing land use patterns are affecting migratory birds at all stages of their life cycle. Climate change is also a growing concern, since fluctuations in climatic conditions are known to greatly influence the productivity and survivorship of landbird populations. The cumulative impact of high rates of predation by domestic cats, and incidental mortality due to collisions with buildings, communication towers, and vehicles are also of concern.

Monitoring bird populations in Ontario is a cost-effective approach to determine if our collective activities are adversely affecting the health of the environment. Even though bird-monitoring efforts are relatively inexpensive when much of the fieldwork can be carried out by volunteers, monitoring programs do require substantial funds for coordinating and training the many volunteers, for managing huge volumes of data, and for data analysis and reporting. To generate meaningful and timely trend information, large-scale monitoring must be done annually over the long-term.

Nevertheless, it is much more expensive to deal with crises than carry out early intervention and prevention programs. The annual costs of trying to save one endangered species can be comparable to the annual costs of monitoring hundreds of species.



Photo: Ron Ridout

## Recommended actions and needs:

- ◆ More effort needs to be made to determine population trends of certain species for which there is currently insufficient information, especially in the north.
- ◆ Research is needed to determine the underlying causes of declines in many species, including aerial foragers, Olive-sided Flycatcher, Purple Finch, and Rusty Blackbird.
- ◆ Conservation efforts are urgently needed to recover grassland birds.
- ◆ Funding and long-term support for monitoring programs is needed.
- ◆ Internship opportunities are needed to train the next generation of skilled volunteers for monitoring programs.

## What you can do to help migratory landbirds:

- ◆ Improve bird habitat in your backyard and neighbourhood;
- ◆ Keep your cats indoors;
- ◆ Participate in bird monitoring programs;
- ◆ Buy bird-friendly products (e.g., shade-grown coffee and certified lumber);
- ◆ Reduce your environmental “footprint”; and
- ◆ Support organizations that are involved in conservation activities.



Blue-winged Warbler Photo: Jim Flynn

## Key to Information in the Tables

Within each suite, species are ordered by level of conservation concern from highest (red and orange dots) to lowest (green and blue dots) concern, as determined by 1) rate of population change (severe decline through to strong increase); then 2) atlas trend; then 3) level of Ontario responsibility; then 4) global population size; then 5) North American/Canadian status; and then alphabetically if there are still ties.

### Global Population:

Symbol	Population Size	Global Population
●	Rare to very rare	<1,000,000
●	Uncommon	1,000,000 to 3,000,000
○	Common	3,000,000 to 5,000,000
●	Abundant	5,000,000 to 50,000,000
●	Very abundant	>50,000,000

**Risk Status:** Partners In Flight (PIF) conservation status and risk status assigned by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Symbol	PIF Status	COSEWIC Status
●	Watch List	Endangered/Threatened
●	Stewardship List	Special Concern

**ON Responsibility:** Ontario Conservation Responsibility based upon proportion of total breeding range and global population that breeds within Ontario. When breeding range and population estimates differed, the most conservative value was used.

Symbol	Ontario Responsibility	% of total breeding range or total population breeding in Ontario
●	Very High	>30%
●	High	20% to 30%
○	Moderate	10% to 20%
●	Low	5% to 10%
●	Very Low	<5%

**Atlas Trend:** Changes in Ontario breeding distribution between the first and second atlases, based upon 1981-1985 and 2001-2004 data.

Symbol	Atlas Trend	Change from 1 <sup>st</sup> atlas
●	Severe decline	>40% fewer squares
●	Decline	20% to 40% fewer squares
○	Relatively stable	+/- 20% difference
●	Increase	20% - 30% more squares
●	Strong increase	>30% more squares

**Population Trend:** Long-term (generally 33-year period from 1968 to 2003) population trends using best available data.

Trend is statistically significant	Trend is not statistically significant	Population trend	Average annual percentage change
●●	●	Severe decline	> -3%
●●	●	Decline	- 1% to - 3%
?	?	Unknown	Data n/a
○	○	Relatively stable	- 1 % to + 1%
●●	●	Increase	+1% to +3%
●●	●	Strong increase	>+3%

Double symbols indicate statistically significant trend from at least one good source. Where significant trends for BBS and LPBO differ, both are given (BBS followed by LPBO).

**Table 1. The state of migratory forest birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	AtlasTrend	Population Trend
Olive-sided Flycatcher	●	●	●	●	●●
Purple Finch	●		○	○	●●
Dark-eyed Junco	●		●	○	●●
Ruby-crowned Kinglet	●		●	○	●●●
Tennessee Warbler	●	●	○	●	●●
Rusty Blackbird	●	●	○	○	●●
Rose-breasted Grosbeak	○		○	○	●●
Northern Waterthrush	●		○	○	●●●●
Canada Warbler	●	●	●	●	●
Scarlet Tanager	○		●	●	●
Pine Siskin	●		●	●	●
Bay-breasted Warbler	○	●	●	○	●
Cerulean Warbler	●	●●	●	●	?
Cape May Warbler	○	●	●	●	○
Evening Grosbeak	●		●	●	○
Wood Thrush	●	●	●	●	○
Yellow-throated Vireo	●	●	●	●	○
Veery	●		●	○	○
Ovenbird	●		●	○	○
Swainson's Thrush	●		○	○	○
Red-breasted Nuthatch	●		●	○	○
Yellow-bellied Sapsucker	●	●	○	○	●
Pine Warbler	●	●	●	●	●
Least Flycatcher	●		○	●	●●
Great Crested Flycatcher	●		●	●	●●
Eastern Wood-Pewee	●		●	●	●●
Black-throated Green Warbler	●	●	●	○	●●
Blackburnian Warbler	●	●	●	○	●●
Black-and-white Warbler	●		●	○	●●
Magnolia Warbler	●	●	●	○	●●
American Redstart	●		○	○	●●
Philadelphia Vireo	○	●	○	○	●●
Hermit Thrush	●		○	○	●●
Red-eyed Vireo	●		○	○	●●
Yellow-rumped Warbler	●		●	○	●●
Black-throated Blue Warbler	●		●	●	●●
Blue-headed Vireo	●	●	●	●	●●
Yellow-bellied Flycatcher	●	●	○	●	●●
Brown Creeper	●		○	○	●
Golden-crowned Kinglet	●		○	○	●
Northern Parula	●		○	●	●
Warbling Vireo	●		●	●	●●
Winter Wren	●	●	○	○	●●
Blackpoll Warbler	●		●	○	●●

**Table 2. The state of migratory shrubland birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	Atlas Trend	Pop'n Trend
Connecticut Warbler	●	●	●	○	●
Brown Thrasher	●	●	●	●	●●
Yellow-billed Cuckoo	●		●	●	●
Lincoln's Sparrow	●	●	○	○	●
Orange-crowned Warbler	●		●	○	?
Eastern Towhee	●	●	●	●	○
Field Sparrow	●		●	●	●●
Gray Catbird	●		●	●	●●
Mourning Warbler	●	●	●	○	●●
Chestnut-sided Warbler	●	●	●	○	●●
Palm Warbler	●	●	●	○	●●
Nashville Warbler	●	●	●	○	●●
Wilson's Warbler	●		○	○	●●
House Wren	●		●	○	●●
White-throated Sparrow	●	●	●	○	○
Black-billed Cuckoo	●		○	○	○
Clay-colored Sparrow	●		○	○	○
Alder Flycatcher	●	●	○	○	○
Yellow Warbler	●		●	○	○
Song Sparrow	●		●	○	○
Willow Flycatcher	○	●	●	○	●
Blue-gray Gnatcatcher	●		●	●	●
Golden-winged Warbler	●	●	○	●	●●
Chipping Sparrow	●		●	○	●●
Blue-winged Warbler	●	●	●	●	●●

**Table 3. The state of migratory grassland birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	Atlas Trend	Pop'n Trend
Western Meadowlark	●		●	●	●●
Vesper Sparrow	●		●	●	●●
Savannah Sparrow	●		●	○	●●
Bobolink	●		○	●	●
Eastern Meadowlark	●		●	●	●
Grasshopper Sparrow	●	●	●	●	●
Le Conte's Sparrow	●		○	○	?
Brewer's Blackbird	●		●	●	○
Horned Lark	●		●	●	○
Sedge Wren	●		●	●	●

**Table 4. The state of migratory marsh birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	AtlasTrend	Pop'n Trend
Belted Kingfisher	●		●	○	●●
Red-winged Blackbird	●		●	○	●
Yellow-headed Blackbird	●	●	●	○	?
Swamp Sparrow	●	●	○	○	●
Marsh Wren	●		●	○	●

**Table 5. The state of habitat-generalist migratory birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	AtlasTrend	Pop'n Trend
Red-headed Woodpecker	●	●●	●	●	●●
Brown-headed Cowbird	●		●	●	●●
Common Grackle	●		●	○	●●
Northern Flicker	●		●	○	●
Eastern Kingbird	●		●	●	○
Cedar Waxwing	●		○	○	○
Blue Jay	●		●	○	○
American Goldfinch	●		●	○	○
American Crow	●		●	○	○
Baltimore Oriole	●		●	●	●●
Common Yellowthroat	●		●	○	●●
Ruby-throated Hummingbird	●		●	○	●
American Robin	●		●	○	●●
Eastern Phoebe	●		●	○	●●
Indigo Bunting	●		●	○	●●
Mourning Dove	●		●	○	●●
Eastern Bluebird	●		●	●	●●

**Table 6. The state of aerial-foraging migratory birds in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	Atlas Trend	Pop'n Trend
Common Nighthawk	●		●	●	●●
Chimney Swift	●		●	●	●●
Bank Swallow	●		●	●	●●
Tree Swallow	●		●	●	●●
Barn Swallow	●		●	●	●●
Whip-poor-will	●		●	●	●
Purple Martin	●		●	●	●
Cliff Swallow	●		●	●	●
N. Rough-winged Swallow	●		●	●	○

**Table 7. The state of migratory birds with a restricted breeding distribution in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	AtlasTrend	Pop'n Trend
Loggerhead Shrike	○	●	●	●	●
Fox Sparrow	●	●	●	?	●●
Henslow's Sparrow	●	●●	●	●	?
Yellow-breasted Chat	●	(●)	●	●	?
Louisiana Waterthrush	●	●●	●	●	?
Prairie Warbler	●	●	●	●	?
Smith's Longspur	●	●	○	?	?
Northern Shrike	●	●	○	?	?
Nelson's Sharp-tailed Sparrow	●	●	●	?	?
Harris's Sparrow	○	●	●	?	?
American Tree Sparrow	●	●	●	?	?
Lapland Longspur	●	●	●	?	?
American Pipit	●		●	?	?
Prothonotary Warbler	●	●●	●	○	?
White-eyed Vireo	●	●	●	○	?
Acadian Flycatcher	○	●●	●	○	?
Western Kingbird	●		●	○	?
Hooded Warbler	○	●●	●	●	?
Orchard Oriole	○		●	●	?
Gray-cheeked Thrush	●		●	?	○
White-crowned Sparrow	●		●	○	●●

**Table 8. The state of migratory raptors in Ontario.**

Species	Global Population	Risk Status	ON Responsibility	Atlas Trend	Pop'n Trend
American Kestrel	●		●	○	●●
Northern Saw-whet Owl	●		●	○	?
Golden Eagle	●		●	○	?
Broad-winged Hawk	●		○	○	●
Red-tailed Hawk	●		●	○	●
Sharp-shinned Hawk	●		●	●	●
Red-shouldered Hawk	●	●●	●	○	●
Cooper's Hawk	●		●	●	●
Peregrine Falcon	●	●●	●	●	●
Bald Eagle	●	●	●	●	●
Northern Harrier	●		●	○	●●
Osprey	●		●	●	●●
Merlin	●		●	●	●●
Turkey Vulture	○		●	●	●●

## Acknowledgements

This report is dedicated to the thousands of volunteers who contribute freely of their time and skills to collect scientific data on Ontario's migratory landbirds. Without their dedication and ongoing participation in long-term bird monitoring projects, we would know little about the state of Ontario's migratory landbirds. Bird Studies Canada's monitoring programs in Ontario also receive important support from the Ontario Ministry of Natural Resource's Wildlife Assessment Program. Many thanks to Jim Flynn and Ron Ridout for supplying the excellent photographs used in this fact sheet, and to the Ontario Trillium Foundation for financially supporting its production.



Photo: Ron Ridout

## For More Information

Bird Studies Canada: [www.bsc-eoc.org](http://www.bsc-eoc.org)

Canadian Breeding Bird Survey:  
[www.cws-scf.ec.gc.ca/birds/trends/disclaimer\\_e.cfm](http://www.cws-scf.ec.gc.ca/birds/trends/disclaimer_e.cfm)

Ontario Breeding Bird Atlas:  
[www.birdsontario.org/atlas/atlasmain.html](http://www.birdsontario.org/atlas/atlasmain.html)

Canadian Migration Monitoring Network:  
[www.bsc-eoc.org/national/cmmn.html](http://www.bsc-eoc.org/national/cmmn.html)

Ontario Partners in Flight:  
[www.bsc-eoc.org/PIF/PIFOntario.html](http://www.bsc-eoc.org/PIF/PIFOntario.html)

North American Bird Conservation Initiative:  
[www.nabci.net](http://www.nabci.net)

North American Partners in Flight:  
[www.partnersinflight.org](http://www.partnersinflight.org)

Wildlife Watchers Programs:  
[www.on.ec.gc.ca/wildlife/newsletters/watchers03-e.html](http://www.on.ec.gc.ca/wildlife/newsletters/watchers03-e.html)

Wildspace Ontario:  
[www.on.ec.gc.ca/wildlife/wildspace/intro-e.html](http://www.on.ec.gc.ca/wildlife/wildspace/intro-e.html)

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Design and Layout: Ron Ridout and Jon McCracken  
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