POPULATION STATUS OF CANADA'S MIGRATORY BIRDS

CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS



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Environment and Climate Change Canada Public Inquiries Centre 12th Floor Fontaine Building 200 Sacré-Coeur Blvd Gatineau QC K1A 0H3

Telephone: 1-800-668-6767 (in Canada only) or 819-938-3860

Fax: 819-938-3318

Email: ec.enviroinfo.ec@canada.ca

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CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS

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December 2019

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Population status of Canada's migratory birds

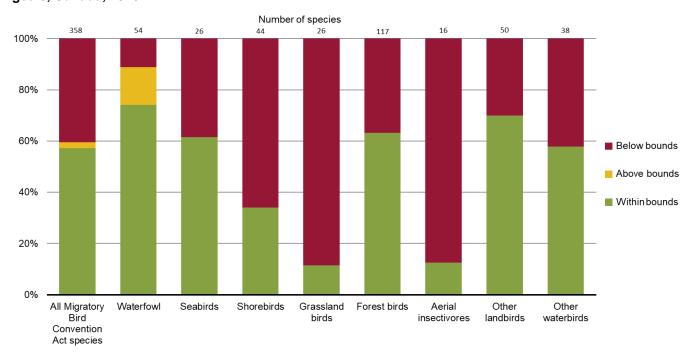
Birds are important to Canadians for many reasons, including the important ecological services they provide such as controlling insect and rodent populations and dispersing seeds. They also provide opportunities for bird watching and hunting. The indicator reports the proportion of bird species listed in the *Migratory Birds Convention Act* whose populations fall within acceptable bounds and provides a snapshot of the general state of birds in Canada. ¹

Key results

In 2016, of the 358 bird species with adequate monitoring data:

- 57% had populations within acceptable bounds
- waterfowl and forest birds were the 2 groups with the highest proportion of populations within acceptable bounds (74% and 63%, respectively)
- only 12% of grassland and aerial insectivore birds had populations within acceptable bounds
- 12% of waterfowl had populations above acceptable bounds

Figure 1. Status of bird species listed in the *Migratory Birds Convention Act* in relation to population goals, Canada, 2016



Data for Figure 1

Note: The grouping of bird species is the same as in the <u>State of Canada's Birds</u> but includes only birds listed in the <u>Migratory Birds</u> Convention Act. "Species" as used here includes 354 species, 14 subspecies and 52 populations of birds. Fifty-four (54) species and 8 populations have insufficient data to be assessed and are not included in the figure. Of the 358 species with adequate monitoring data, 13 species are included in more than one category based on their feeding and habitat requirements, but are only included once in the total. For example, species grouped in the feeding behaviour category aerial insectivores may also be included in the habitat grouping forest birds. **Source:** Canadian Wildlife Service, Environment and Climate Change Canada (2019).

www.canada.ca/environmental-indicators

¹ All species that are listed in the *Migratory Birds Convention Act* and that regularly occur in Canada are considered. "Species" as used here include subspecies and populations of relevance to management.

Populations of waterfowl have benefited from efforts to conserve, enhance and restore wetlands. Many geese species, a type of waterfowl, have also taken advantage of the increased availability of waste grain in harvested farm fields.² Populations of some Arctic geese species have increased to the point that they are now above acceptable bounds.

Of the 26 species of Canadian seabirds with sufficient data, 62% (16 species) have populations that fall within acceptable bounds. It should be noted, however, that not enough information is available for 49% (25 species) of seabirds to determine whether their populations fall within acceptable bounds.

Canada has lost 40% of shorebird populations and about 60% of grassland bird and aerial insectivore populations since 1970, with aerial insectivores and grassland birds representing the majority (80%) of birds recently assessed as endangered or threatened.²

Conserving Canada's birds requires a range of actions. At the end of the 19th century, many species of North American birds had been hunted almost to extinction. Increasing awareness of their plight led to national and international protections, including the Migratory Birds Convention, signed by Canada and the United States in 1916. This convention has provided the foundation for nearly a century of international cooperation on bird conservation. Commercial harvesting of birds was banned and regulations were enacted to promote sustainable recreational hunting in both countries. Many species such as herons and egrets, along with some waterfowl species, have recovered as a result of these protective measures. Habitat conservation is essential for the survival of birds, not just in Canada, but also along migratory routes, in wintering ranges and throughout the entire annual cycle.

About the indicator

What the indicator measures

The indicator reports the proportion of bird species listed in the *Migratory Birds Convention Act* whose populations fall within, or are above or below national population goals. It provides a snapshot assessment of the state of bird populations in Canada.

Some bird species are managed towards specific population levels (for example, some hunted species or species of conservation concern). While the indicator reports whether species' populations are within acceptable bounds, it does not indicate if management goals are being met.

Why this indicator is important

Birds are important to Canadians. Bird watching is a popular activity and millions of Canadians feed birds in their backyards. Waterfowl hunting contributes to tourism, provides food and maintains traditions. Birds also provide ecological benefits by controlling insect and rodent populations, dispersing seeds, pollinating plants and playing other key roles in the functioning of ecosystems. These ecosystem services contribute to our economy and our well-being.

Bird populations fluctuate naturally in response to ecological conditions, but negative changes in bird populations reflect the overall effect of many different factors, including habitat loss, pollution, agricultural impacts, climate change, invasive species and hunting as well as other sources of direct mortality, such as collisions with windows and cat predation.

Because birds are sensitive to environmental changes, they can be used as an indicator of ecosystem health and the state of biodiversity. Tracking the status of Canada's birds can help identify the impact of these changes. When species' populations do not fall within acceptable bounds, conservation actions can be taken to improve trends over time.



Healthy wildlife populations

² North American Bird Conservation Initiative-Canada (2019) State of Canada's Birds 2019. Retrieved on June 14, 2019.

This indicator supports the measurement of progress towards the following 2019 to 2022 Federal Sustainable Development Strategy long-term goal: All species have healthy and viable populations. It is used to assess progress towards the target: By 2025, increase the percentage of migratory bird species whose populations' sizes fall within an acceptable range – neither too low nor too high – from a baseline of 57% in 2013.

Related indicators

The <u>Trends in Canada's bird populations</u> indicator reports average population trends of various groups of native Canadian bird species.

The <u>Status of wild species</u> indicator reports extinction risks across a broad set of species and can reveal early signs of trouble before species reach a critical condition.

The <u>Changes in the status of wildlife species at risk</u> indicator tracks changes in the status of species at risk assessed by the <u>Committee on the Status of Endangered Wildlife in Canada</u>.

The <u>Global trends in bird species survival</u> indicator provides a measure of the aggregated extinction risk over time and is an indication of the changing status of global bird biodiversity.

The Canadian species index indicator tracks average population trends for vertebrate species in Canada.

Data sources and methods

Data sources

Data on Canada's migratory bird species' populations draw from various monitoring programs that use a range of methods designed to survey different bird species or types of habitat.

More information

Many monitoring programs are designed by biologists, but enlist the help of volunteers in data collection. Some volunteer programs, like the North American Breeding Bird Survey, nocturnal owl surveys and marsh monitoring surveys take place during the breeding season. Other programs monitor birds during migration (for example, the Canadian Migration Monitoring Network and shorebird migration surveys) or in winter (Christmas Bird Count and Project FeederWatch). Checklist programs like eBird and Étude des populations d'oiseaux du Québec (in French only) encourage birders to record their observations every time they go birding.

Other programs, such as surveys of breeding waterfowl, Arctic shorebirds and colonial seabirds, are conducted entirely by biologists.

Environment and Climate Change Canada's Canadian Wildlife Service collates the data from many of these monitoring programs, often in collaboration with <u>Bird Studies Canada</u>, <u>Ducks Unlimited Canada</u> and <u>Nature Canada</u>. Results are reported in the <u>State of Canada's Birds 2019</u> report and the <u>Status of Birds in Canada 2019</u> website.

Species are classified into taxonomic or ecological groups with similar habitat or feeding requirements; the groups used here are drawn from the <u>State of Canada's Birds 2019</u>. All bird species are included in the "All *Migratory Bird Convention Act* species" category.

Methods

The indicator summarizes the proportion of birds that regularly occur in Canada and are listed in the *Migratory Birds Convention Act* whose populations fall within or outside acceptable bounds. These population goals are guided by what constitutes a "healthy" population level and are determined using a science-based assessment of the minimum number of individuals required to sustain a population.

More information

It is possible for a situation of overpopulation to occur when a species is so abundant that it has negative impacts on other species or habitats, or conflicts with human uses (for example causing excessive crop

damage). Therefore, population bounds may have minimum and maximum levels; a maximum level may not be defined unless it is relevant.

In the case of species for which management goals have been established (for example, long-term recovery goals for species at risk), the same goals have been used in this indicator, when possible. Where continental or regional goals exist for harvested bird species, the goals have been adapted to the national level based on the species' distribution. In cases where different management goals exist for distinct populations within a species, each population is treated as separate species in the indicator.

A distinct population is a set of individuals from the same species that share the same habitat and location. Subspecies are geographically or otherwise distinct groups in a species between which there is little demographic or genetic exchange.

Prior to 2014, population goals did not exist for most bird species. Goals were established for these species, taking into account current and historical abundance, habitat capacity, the amount of information available, the ecological function of the species, and societal needs. Natural variations in numbers are known to occur in response to changing ecological conditions, and were taken into account when developing goals. Goals may be revised over time.

Recent changes

The specific groupings included have been updated to match the <u>State of Canada's Birds 2019</u> report. Individual species' assessments have also been updated.

Caveats and limitations

Species whose populations fall within acceptable bounds may still be of conservation concern. Examples might include cases where trends are negative or where a species remains at the lower end of the acceptable bound for a number of years. Similarly, if populations for a group of related species remains near the boundaries of the acceptable bounds, it may signal the need for management or conservation intervention. However, it is important to note that natural fluctuations do occur and population estimates are rarely exact.

The indicator is restricted to species regularly occurring in Canada and listed in the *Migratory Birds Convention Act*. While the act covers most groups of migratory birds, groups of species such as birds of prey and corvids (crows and jays) are not included. In addition, not all species in the act are migratory (such as, the Downy Woodpecker, American Dipper and Black Oystercatcher). "Species" as used in the indicator includes subspecies and populations of relevance to the management goals for the species.

Population estimates contain some uncertainty and results should be interpreted with this in mind.

Resources

References

Environment and Climate Change Canada (2019) <u>Status of Birds in Canada 2019</u>. Retrieved on September 17, 2019.

North American Bird Conservation Initiative-Canada (2019) <u>State of Canada's Birds 2019</u>. Retrieved on June 14, 2019.

Annex

Annex A. Data tables for the figures presented in this document

Table A.1. Data for Figure 1. Status of bird species listed in the *Migratory Birds Convention Act* in relation to population goals, Canada, 2016

Ecological group	Status in relation to population goal	Species	Species count
Waterfowl	Above bounds	Canada Goose (Ontario Temperate Breeders), Canada Goose (Prairies Temperate Breeders), Canada Goose (Quebec Temperate Breeders), Canada Goose (Southern BC Temperate Breeders), Greater Snow Goose, Lesser Snow Goose (Midcontinent), Lesser Snow Goose (Western Arctic), Ross's Goose	8
Waterfowl	Within bounds	American Black Duck, Barrow's Goldeneye (Eastern), Barrow's Goldeneye (Western), Blue-winged Teal, Brant (Eastern High Arctic), Brant (Western High-Arctic), Bufflehead, Cackling Goose, Canada Goose (Maritime Temperate Breeders), Canada Goose (North Atlantic population), Canada Goose (Southern Hudson Bay population), Canvasback, Common Eider (Northern), Common Goldeneye (Eastern), Common Goldeneye (Western), Common Merganser, Gadwall, Greater White-fronted Goose, Green-winged Teal (Eastern), Green-winged Teal (Western), Harlequin Duck (Eastern), Harlequin Duck (Western), Hooded Merganser, King Eider, Mallard (Eastern), Mallard (Western), Northern Shoveler, Red-breasted Merganser, Redhead, Ringnecked Duck (Eastern), Ring-necked Duck (Western), Ruddy Duck, Sandhill Crane, Trumpeter Swan (Interior), Trumpeter Swan (Pacific Coast), Trumpeter Swan (Rocky Mountain), Tundra Swan (Eastern), Tundra Swan (Western), Wood Duck (Eastern), Wood Duck (Western)	40
Waterfowl	Below bounds	American Wigeon, Canada Goose (Atlantic population), Common Eider (American), Common Eider (Pacific), Lesser Scaup, Northern Pintail	6
Waterfowl	Insufficient data	Black Scoter (Eastern), Black Scoter (Western), Canada Goose (Central/Northern British Columbia Breeders), Cinnamon Teal, Common Eider (Hudson Bay), Greater Scaup, Long-tailed Duck, Surf Scoter (Eastern), Surf Scoter (Western), White-winged Scoter (Western)	11
Seabirds	Within bounds	Atlantic Puffin, Black Guillemot, Black-legged Kittiwake (Arctic Population), Cassin's Auklet, Common Murre, Glaucous-winged Gull, Great Black-backed Gull, Herring Gull, Laughing Gull, Lesser Black-backed Gull, Northern Gannet, Pigeon Guillemot, Razorbill, Rhinoceros Auklet, Thick-billed Murre, Tufted Puffin	16
Seabirds	Below bounds	Ancient Murrelet, Black-legged Kittiwake (Atlantic Population), Ivory Gull, Manx Shearwater, Northern Fulmar, Pink-footed Shearwater, Roseate Tern, Ross's Gull, Short-tailed Albatross, Common Tern ^[A]	10

Ecological group	Status in relation to population goal	Species	Species count
Seabirds	Insufficient data	Bermuda Petrel, Black-footed Albatross, Black-headed Gull, Buller's Shearwater, Dovekie, Flesh-footed Shearwater, Forktailed Storm-Petrel, Glaucous Gull, Great Shearwater, Great Skua, Heermann's Gull, Horned Puffin, Laysan Albatross, Leach's Storm-Petrel, Scripps's Murrelet, Sooty Shearwater, South Polar Skua, Western Gull, Wilson's Storm-Petrel, Arctic Tern, [A] Iceland Gull, [A] Long-tailed Jaeger, [A] Parasitic Jaeger, [A] Pomarine Jaeger, [A] Sabine's Gull	25
Shorebirds	Within bounds	American Avocet, American Woodcock (Central), American Woodcock (Eastern), Baird's Sandpiper, Black Oystercatcher, Black Turnstone, Black-necked Stilt, Least Sandpiper, Purple Sandpiper, Western Sandpiper, White-rumped Sandpiper, Wilson's Phalarope, Wilson's Snipe, Greater Yellowlegs, [A] Solitary Sandpiper.	15
Shorebirds	Below bounds	American Golden-Plover, Black-bellied Plover, Buff-breasted Sandpiper, Dunlin, Eskimo Curlew, Hudsonian Godwit, Killdeer, Marbled Godwit, Pectoral Sandpiper, Piping Plover melodus subspecies, Piping Plover circumcinctus subspecies, Red Knot islandica subspecies, Red Knot rufa subspecies, Red Knot roselaari type, Ruddy Turnstone, Sanderling, Semipalmated Plover, Semipalmated Sandpiper, Short-billed Dowitcher, Spotted Sandpiper, Stilt Sandpiper, Surfbird, Wandering Tattler, Whimbrel, Lesser Yellowlegs, [A] Long-billed Curlew, [A] Mountain Plover, [A] Upland Sandpiper, [A] Willet [A]	29
Shorebirds	Insufficient data	American Oystercatcher, Common Ringed Plover, Long-billed Dowitcher, Red Phalarope, Red-necked Phalarope, Rock Sandpiper, Sharp-tailed Sandpiper	7
Grassland birds	Within bounds	Dickcissel, Grasshopper Sparrow, Western Kingbird	3
Grassland birds	Below bounds	Baird's Sparrow, Bobolink, Chestnut-collared Longspur, Eastern Meadowlark, Grasshopper Sparrow, Henslow's Sparrow, Horned Lark, Horned Lark strigata subspecies, Lark Bunting, Le Conte's Sparrow, Loggerhead Shrike Eastern subspecies, Loggerhead Shrike Prairie subspecies, McCown's Longspur, Savannah Sparrow, Savannah Sparrow princeps subspecies, Sprague's Pipit, Vesper Sparrow affinis subspecies, Vesper Sparrow, Western Meadowlark, Long-billed Curlew, [A] Mountain Plover, [A] Upland Sandpiper, [A] Willet [A]	23

Ecological group	Status in relation to population goal	Species	Species count
Forest birds	Within bounds	Alder Flycatcher, American Goldfinch, American Redstart, Baybreasted Warbler, Black-and-white Warbler, Black-backed Woodpecker, Black-billed Cuckoo, Blackburnian Warbler, Black-capped Chickadee, Black-headed Grosbeak, Black-throated Blue Warbler, Black-throated Green Warbler, Blue-gray Gnatcatcher, Blue-headed Vireo, Bohemian Waxwing, Boreal Chickadee, Brown Creeper, Calliope Hummingbird, Cape May Warbler, Cassin's Vireo, Dark-eyed Junco, Downy Woodpecker, Dusky Flycatcher, Fox Sparrow, Golden-crowned Kinglet, Goldenwinged Warbler, Hairy Woodpecker, Hammond's Flycatcher, Hermit Thrush, Hooded Warbler, Hutton's Vireo, Magnolia Warbler, Mountain Chickadee, Nashville Warbler, Northern Cardinal, Nothern Flicker, Northern Parula, Northern Waterthrush, Orange-crowned Warbler, Ovenbird, Pacific Wren, Pacific-slope Flycatcher, Palm Warbler, Philadelphia Vireo, Pileated Woodpecker, Pine Grosbeak, Pine Warbler, Pygmy Nuthatch, Red Crossbill, Red-bellied Woodpecker, Red-breasted Nuthatch, Red-breasted Sapsucker, Red-eyed Vireo, Red-naped Sapsucker, Ruby-crowned Kinglet, Ruby-throated Hummingbird, Scarlet Tanager, Swainson's Thrush, Tennessee Warbler, Townsend's Solitaire, Tufted Titmouse, Warbling Vireo, Western Bluebird, Western Tanager, White-breasted Nuthatch, White-winged Crossbill, Wilson's Warbler, Winter Wren, Yellow-bellied Flycatcher, Yellow-bellied Sapsucker, Yellow-rumped Warbler, Yellow-throated Vireo, Greater Yellowlegs, [A] Solitary Sandpiper [A]	74
Forest birds	Below bounds	Acadian Flycatcher, Band-tailed Pigeon, Bewick's Wren, Bicknell's Thrush, Black-throated Gray Warbler, Canada Warbler, Cassin's Finch, Cerulean Warbler, Chestnut-backed Chickadee, Chestnut-sided Warbler, Conneticut Warbler, Eastern Kingbird, Evening Grosbeak, Gray-cheeked Thrush, Great Crested Flycatcher, Least Flycatcher, Lewis's Woodpecker, Louisiana Waterthrush, MacGillivray's Warbler, Marbled Murrelet, Mourning Warbler, Pine Siskin, Prothonotary Warbler, Purple Finch, Red Crossbill percna subspecies, Red-headed Woodpecker, Rosebreasted Grosbeak, Rufous Hummingbird, Townsend's Warbler, Varied Thrush, Veery, White-headed Woodpecker, White-throated Sparrow, Williamson's Sapsucker, Willow Flycatcher, Wood Thrush, Yellow-billed Cuckoo, Eastern Whip-poor-will, [A] Eastern Wood-Pewee, [A] Olive-sided Flycatcher, Vaux's Swift, [A] Western Wood-Pewee, [A] Lesser Yellowlegs[A]	43
Forest birds	Insufficient data	American Three-toed Woodpecker, Blackpoll Warbler, Cordilleran Flycatcher	3
Aerial insectivores	Within bounds	Violet-green Swallow, White-throated Swift	2
Aerial insectivores	Below bounds	Bank Swallow, Barn Swallow, Black Swift, Chimney Swift, Cliff Swallow, Common Nighthawk, Northern Rough-winged Swallow, Purple Martin, Tree Swallow, Eastern Whip-poor-will, [A] Eastern Wood-Pewee, [A] Olive-sided Flycatcher, [A] Vaux's Swift, [A] Western Wood-Pewee [A]	14
Aerial insectivores	Insufficient data	Common Poorwill	1

Ecological group	Status in relation to population goal	Species	Species count
Other landbirds	Within bounds	American Pipit, American Robin, Anna's Hummingbird, Black-chinned Hummingbird, Blue-winged Warbler, Brewer' Sparrow, Bullock's Oriole, Bushtit, Canyon Wren, Carolina Wren, Cedar Waxing, Chipping Sparrow, Common Redpoll, Eastern Bluebird, Eastern Towhee, Golden-crowned Sparrow, Gray Catbird, Gray Flycatcher, Hoary Redpoll, House Finch, House Wren, Indigo Bunting, Lapland Longspur, Lark Sparrow, Lazuli Bunting, Lincoln's Sparrow, Mountain Bluebird, Mourning Dove, Nothern Mockingbird, Nothern Shrike, Orchard Oriole, Rock Wren, Say's Phoebe, Spotted Towhee, Yellow Warbler	35
Other landbirds	Below bounds	American Tree Sparrow, Baltimore Oriole, Brown Thrasher, Clay-colored Sparrow, Eastern Phoebe, Field Sparrow, Gray-crowned Rosy-Finch, Harris's Sparrow, Kirtland's Warbler, Sage Thrasher, Snow Bunting, Song Sparrow, White-crowned Sparrow, Yellow-breasted Chat auricollis subspecies (Southern Mountain population), Yellow-breasted Chat virens subspecies	15
Other landbirds	Insufficient data	Smith's Longspur, Yellow-breasted Chat, Bluethroat, Eastern Yellow Wagtail, Northern Wheatear, Gray-headed Chickadee, Prairie Warbler, White-eyed Vireo	8
Other waterbirds	Within bounds	American Bittern, American Coot, American Dipper, Bonaparte's Gull, California Gull, Caspian Tern, Common Loon, Eared Grebe, Great Egret, Least Bittern, Marsh Wren, Nelson's Sparrow, Pacific Loon, Pied-billed Grebe, Red-necked Grebe, Red-throated Loon, Ring-billed Gull, Eastern Sandhill Crane, Sedge Wren, Sora, Swamp Sparrow, Virginia Rail	22
Other waterbirds	Below bounds	Black Tern, Black-crowned Night-Heron, Common Gallinule, Common Yellowthroat, Franklin's Gull, Great Blue Heron, Great Blue Heron fannini subspecies, Green Heron, Horned Grebe (Magdalen Islands population), Horned Grebe (Western population), King Rail, Mew Gull, Western Grebe, Whooping Crane, Yellow Rail, Common Tern ^[A]	16
Other waterbirds	Insufficient data	Cattle Egret, Clark's Grebe, Forster's Tern, Little Gull, Snowy Egret, White-faced Ibis, Yellow-billed Loon, Arctic Tern, [A] Iceland Gull, [A] Long-tailed Jaeger, [A] Parasitic Jaeger, [A] Pomarine Jaeger, [A] Sabine's Gull	13
All Migratory Bird Convention Act species	Above bounds	See above groups	8
All Migratory Bird Convention Act species	Within bounds	See above groups	205
All Migratory Bird Convention Act species	Below bounds	See above groups	145
All Migratory Bird Convention Act species	Insufficient data	See above groups	62

Note: [A] Indicates a species that is listed in more than 1 species group. The grouping of bird species is the same as in the State of Canada's Birds but includes only birds listed in the Migratory Birds Convention Act. "Species" as used here includes 354 species, 14 subspecies and 52 populations of birds. Fifty-four (54) species and 8 populations have insufficient data to be assessed. Of the 358 species with adequate monitoring data, 13 species are included in more than one category based on their feeding and habitat requirements, but are only included once in the total. For example, species grouped in the feeding behaviour category aerial insectivores may also be included in the habitat grouping forest birds.

Source: Canadian Wildlife Service, Environment and Climate Change Canada (2019).

Additional information can be obtained at:

Environment and Climate Change Canada
Public Inquiries Centre
12th Floor Fontaine Building
200 Sacré-Coeur Blvd
Gatineau QC K1A 0H3

Telephone: 1-800-668-6767 (in Canada only) or 819-938-3860

Fax: 819-938-3318

Email: ec.enviroinfo.ec@canada.ca