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LIVING

Atlas tells bird stories

A lot can happen in 20 years. Who would have thought that bald eagles would become a common nesting species over much of southern Ontario or that the bugling call of sandhill cranes would join the spring bird chorus in many areas? At the same time, few would have expected that the familiar, nasal buzz of the nighthawk would practically disappear from the soundscape of cities across the province. These are some of the stories to emerge from the new Atlas of the Breeding Birds of Ontario, 2001-2005.



OUR CHANGING SEASONS

Drew Monkman

The project set out to update Ontario's first breeding bird atlas, carried out between 1980 and 1985, in order to see what changes have taken place in the province's bird life. Like the first atlas, this new census focused on mapping the distribution of all of Ontario's breeding bird species. By recording the number of locations in which a given species was found, changes in the bird's distribution from two decades ago could be noted. This, in turn, would give some indication of whether the breeding area of a given population is expanding, receding, or staying the same. One significant change this time around, however, was more emphasis on collecting abundance information on these same birds. In other words, the atlas wanted to find out not only where the birds are breeding but in what numbers.

From the spring of 2001 through the fall of 2005, mostly volunteer birders gathered data on all of the bird species breeding in the province. This army of citizen scientists spent more than 152,000 hours collecting data and submitted an astonishing 1.2 million individual breeding bird records. To make sure no stone was left unturned, the southern part of the province was once again divided into 10-by-10 km squares. Volunteer atlasers took responsibility for covering one or more of these squares over the five-year period. Because of its huge size and relative inaccessibility, Northern Ontario was divided into 100-by-100-kilometre blocks. These were atlased by special teams of birders.

I helped out with a square near the village of Douro and another north of Havelock. Essentially what we did was look for evidence of breeding for as many species as possible within each square. This meant listening for singing males, watching for fledglings, searching for nests, or noting any other evidence that birds had decided to raise a family in the square. Different levels of breeding likelihood were assigned. For example, a singing male in the proper habitat at the right time of year was recorded as a possible breeder; a pair of agitated birds meant probable breeders; while finding a nest or young meant confirmed breeders.

Because this method told little about the relative abundance of a given species, a technique called point counts was used as a means of collecting abundance data. This involved standing in an appointed location for five minutes and noting all of the bird species seen or heard during that time. In all, 69,000 point counts were done across the province to provide the first maps of relative abundance for many species.

It came as somewhat of a surprise that Ontario's most abundant bird — by far — is the Nashville warbler at about 15 million individuals. Just a few million behind are other northern species such as white-throated sparrow, yellow-rumped warbler, dark-eyed junco, and chipping sparrow. For many of these very common birds, 90 per cent of the population is located in the vast expanses of northern Ontario.

Over the past 20 years, many of Ontario's 302 breeding species have experienced significant changes in both their distribution and population. The good news is that there are more types of birds increasing than decreasing. According to Mike Cadman, a

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Clockwise, from top left: a loggerhead shrike, bald eagle, eastern meadowlark and a Cooper's hawk.



Karl Egressy, special to The Examiner

biologist with the Canadian Wildlife Service who co-ordinated both atlases, 74 species are significantly more likely to be found now while only 40 species are less likely to be recorded. The status of the other 186 species has stayed more or less the same.

Big birds like raptors, turkeys and sandhill cranes were found to be doing especially well. A 6,000-per-cent increase in turkey numbers was recorded! Among birds of prey expanding their ranges are northern hawk owl, bald eagle, merlin, Cooper's hawk and even the peregrine falcon. Increases in the range and numbers of many of these birds may be explained by a decrease in the number of people shooting them, fewer people living off the land, and the ban on DDT.

A number of other positive trends were noted, as well. Woodland species like thrushes, surprisingly enough, are doing better than they were. Almost one-third of forest-dwelling birds are significantly more prevalent now. Wetland birds, resident species, and short distance migrants are also faring better overall. Short distance migrants are species like American robins that overwinter in the southern U.S. Part of the reason for an increase in their populations may be explained by the greater forest cover that now exists in many states. As for neo-tropical migrants like warblers, orioles and most flycatchers, the picture is more complicated. In general, their numbers are down across southern Ontario but up in the north.

Some species are expanding their range southward. The common raven and yellow rumped warbler have taken advantage of forest expansion into southern Ontario and appear to be recovering some of the traditional nesting territories that they had lost when the land was cleared for agriculture. The sandhill crane, too, is exploding southward and turning up in a number of the larger marshes.

On the other hand, birds like the northern mockingbird, Carolina wren, and the orchard oriole are on the march northward. Mockingbirds are now quite common in Toronto while only a decade ago they were restricted to southwestern Ontario. The jury is still out, however, as to whether these trends are a result of climate change or more habitat available.

As one would expect, the new atlas is also a story of declines. Two groups that are suffering a major decrease in population are grassland birds and aerial foragers. A decline in grassland birds is not surprising since there is a lot less grassland in many areas than there used to be. This is particularly true on the Canadian Shield. The loss of this habitat has been particularly hard on eastern meadowlarks, bobolinks, and savannah sparrows. In fact, 20 of Ontario's 35 grassland birds are now significantly less common than two decades ago.

Why aerial foragers — birds that feed on the wing — have plummeted in numbers is harder to understand. This group includes birds like swallows, whip-poor-wills, nighthawks and chimney swifts. All six of Ontario's swallow species are significantly less common now. The chimney swift, still a common summer bird of downtown Peterborough, is now 46 per cent less prevalent across the province than it used to be. Part of the reason for the decline in swifts and nighthawks may be the loss of nesting habitat in urban areas. Swifts nest in chimneys while nighthawks lay their eggs on flat, gravel roofs. Throughout North America, old chimneys are being modified or removed, and tar is being used on roofs instead of gravel.

One interesting finding was that swallow and purple martin numbers are still fairly healthy along the shores of the Great Lakes but have dropped precipitously around

inland lakes. It is speculated that insect numbers are still strong along the edge of lakes Ontario and Erie but less reliable elsewhere, possibly because of pesticide use.

The atlas also confirmed that three of Ontario's most endangered birds — the loggerhead shrike, Henslow's sparrow, and northern bobwhite — have continued to decline precipitously and are only barely hanging on.

Cadman spoke at the Ontario Nature Conference at Trent University in June, he pointed out that birds are the proverbial "canaries in the coal mine." They are extremely sensitive to changes in habitat, climate, and the environment in general. The atlas data will be very helpful in assessing how regional and global changes in the environment are affecting Ontario's birds.

The atlas will also be an essential resource for environment and resource managers, researchers, birders, and nature enthusiasts for many years to come.

The 700-page book is hardcover and contains full-colour, state-of-the-art maps and photographs which accompany each of the more than 300 species accounts. It should be available by Christmas. The Atlas of the Breeding Birds of Ontario, 2001-2005, can be ordered by going to www.ontarionature.org/shop or by calling toll-free 1-866-900-7100. Advance copies are \$96.00 each (includes shipping, handling, and GST)

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