Atlas-3

Recalibrating our understanding of bird populations for better decision-making over the next 20 years

Mike Burrell

Erin Extended Learning Opportunities

November 6, 2025

Ontario

Outline

1. Background
2. Why is it important?
3. Coverage
4. Early results
5. What's next?

White-throated Sparrow by Scott Leslie

Project partners

BIRDS CANADA OISEAUX CANADA

OFO

Ontario

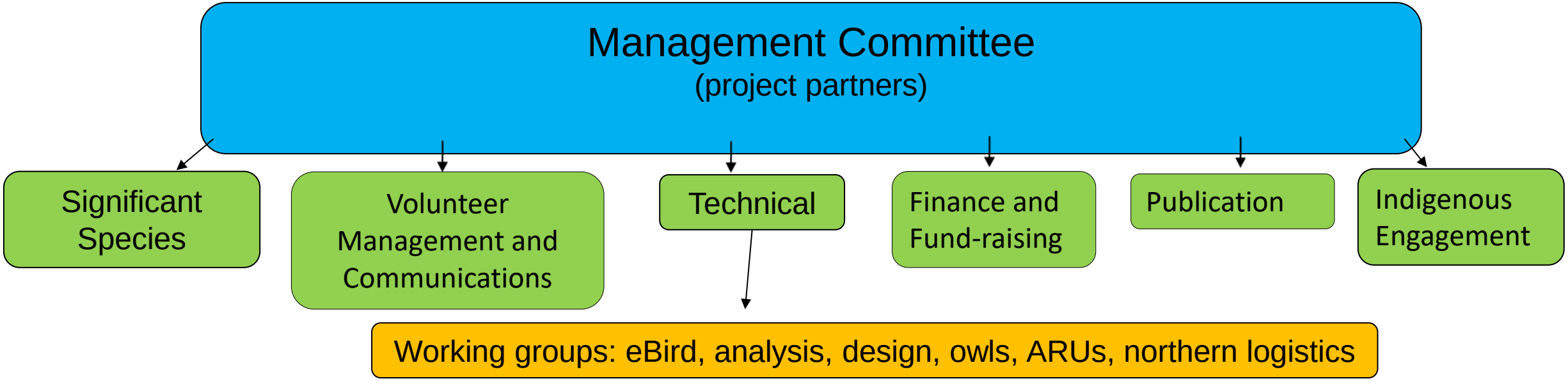
This project was undertaken in partnership with
Ce projet a été réalisé en partenariat avec

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Ontario Nature

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

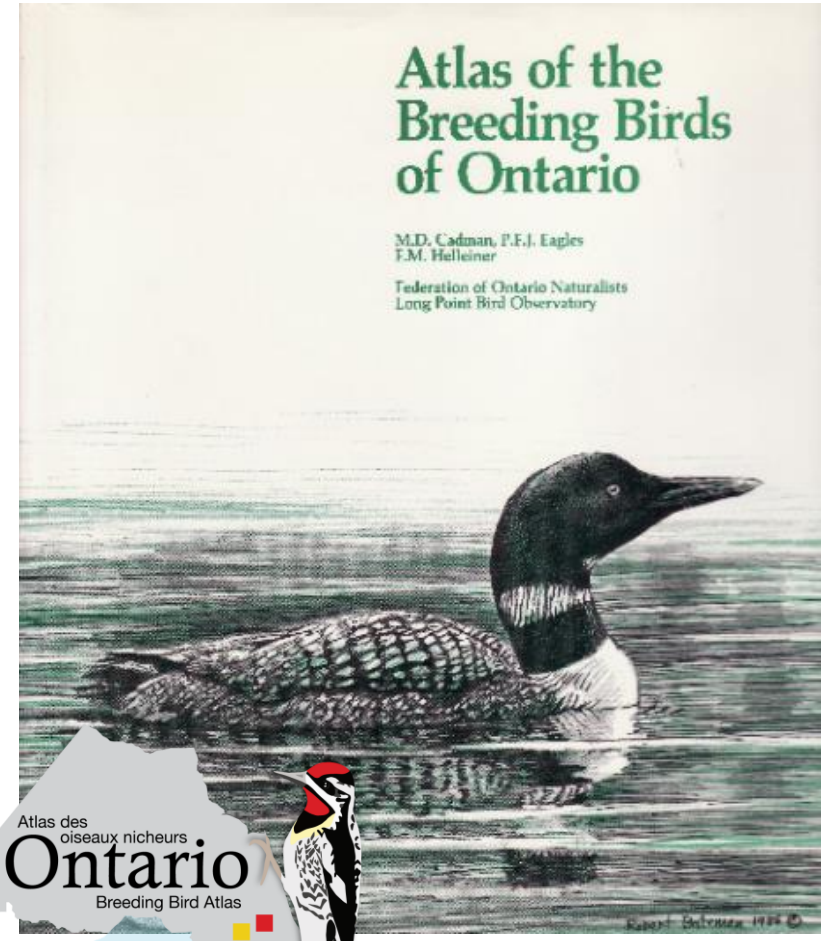
Atlas-3 structure



- Staff: Coordinator and project manager, database manager, GIS/mapping manager, technicians, field crews
- 47 Regions with Regional Coordinators
- 1700 participants

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Atlas-1
1981-1985



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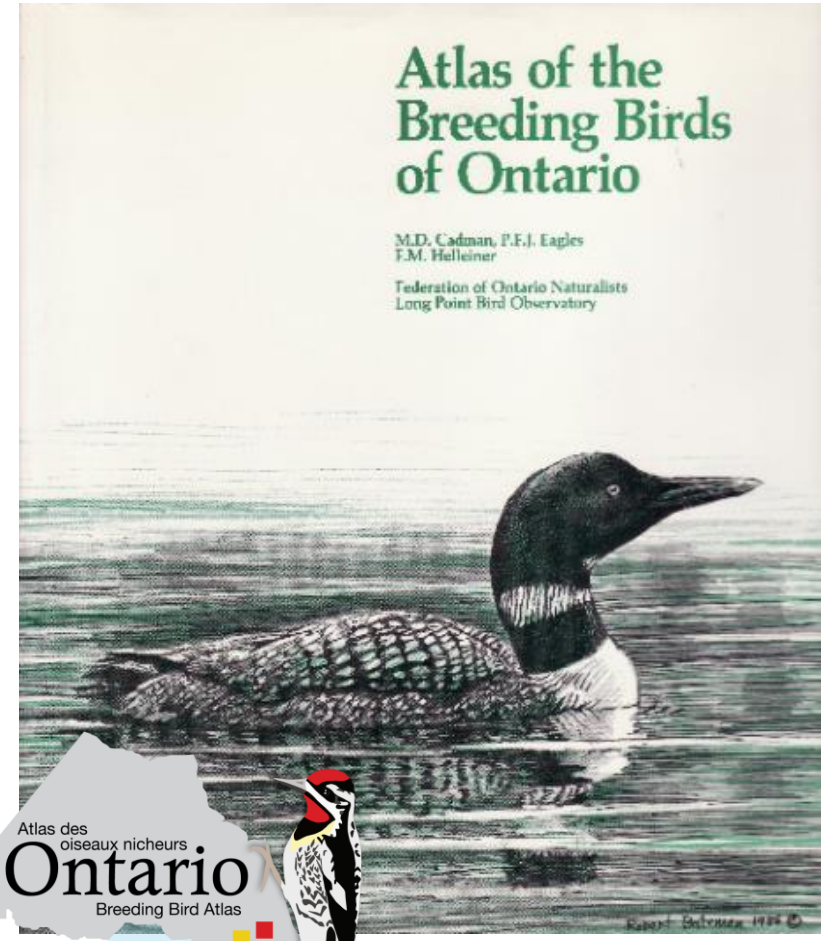
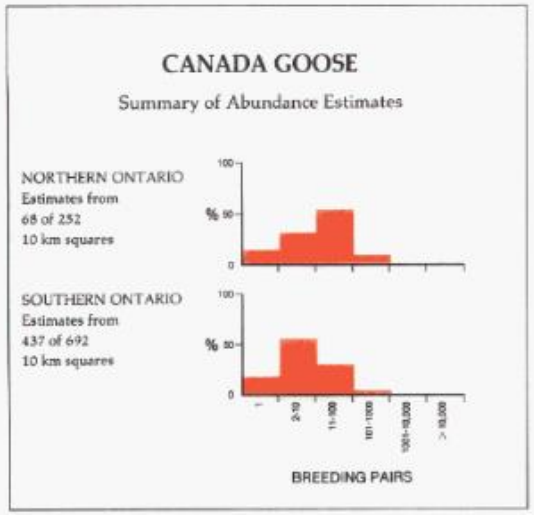
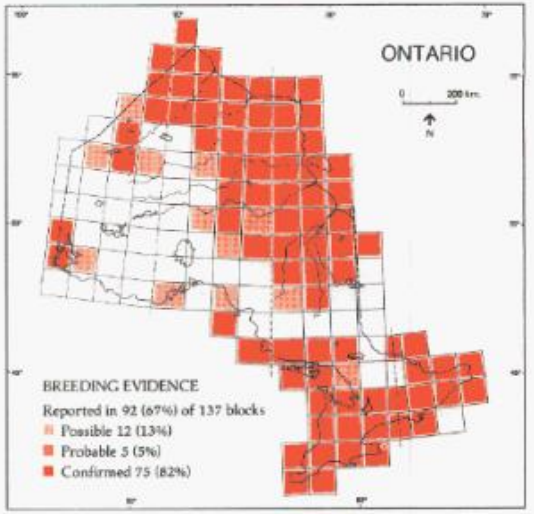
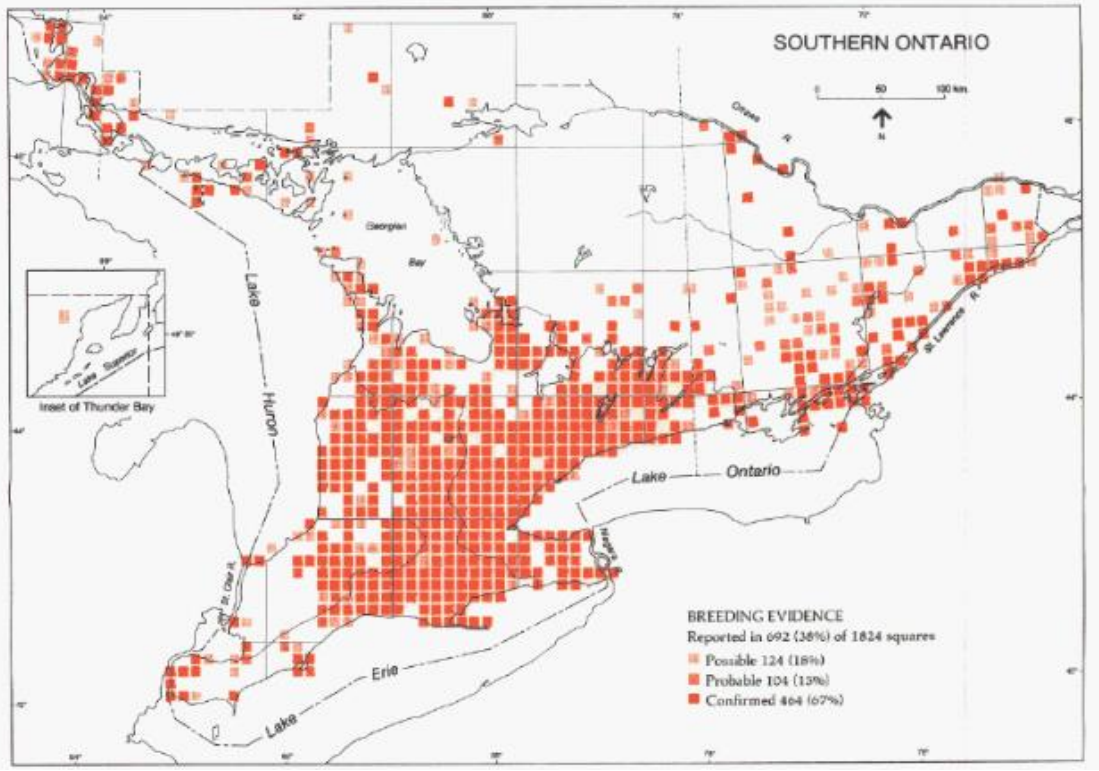
1981-1985



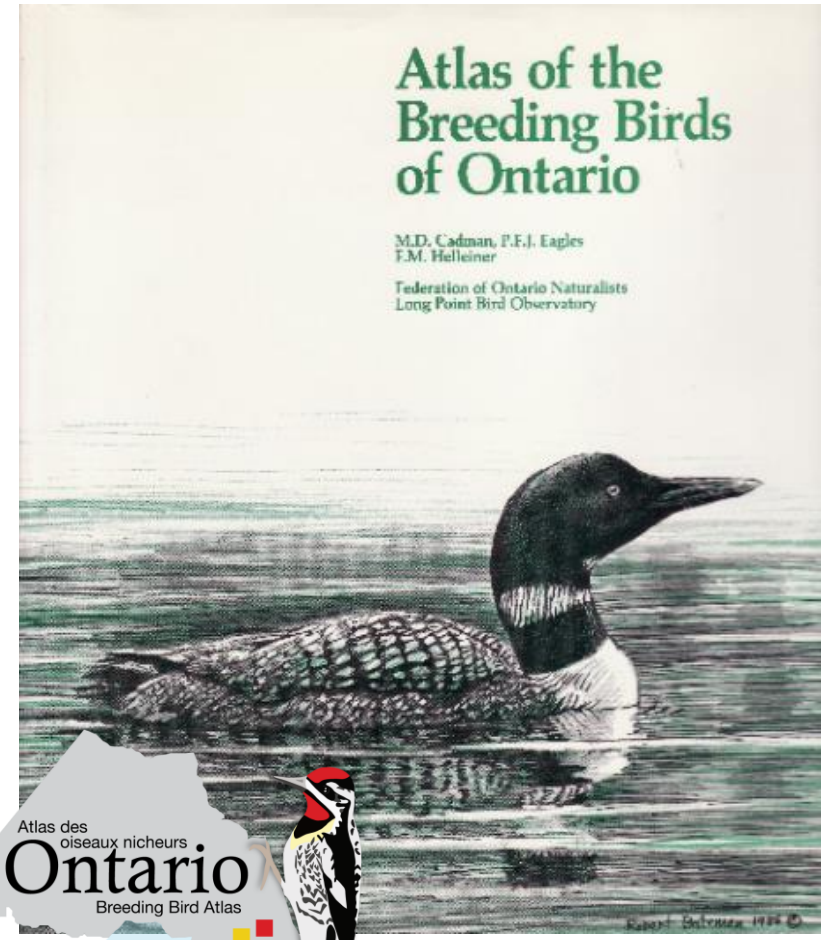


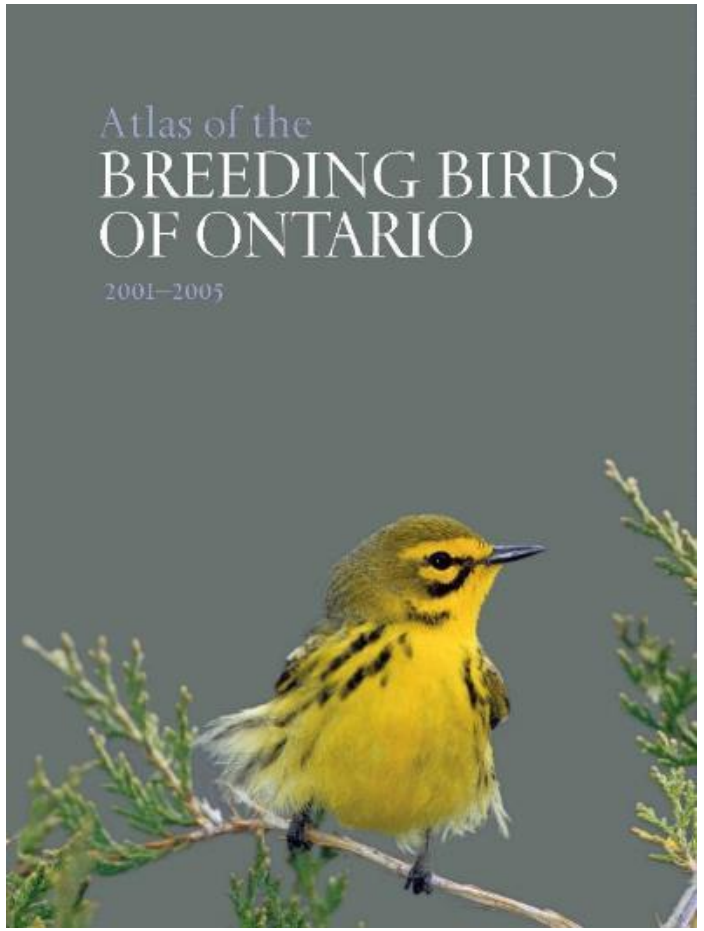




Atlas-1
1981-1985

Atlas-2
2001-2005





Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Atlas-2
2001-2005

Purple Martin

Hirondelle noire

Progne subis

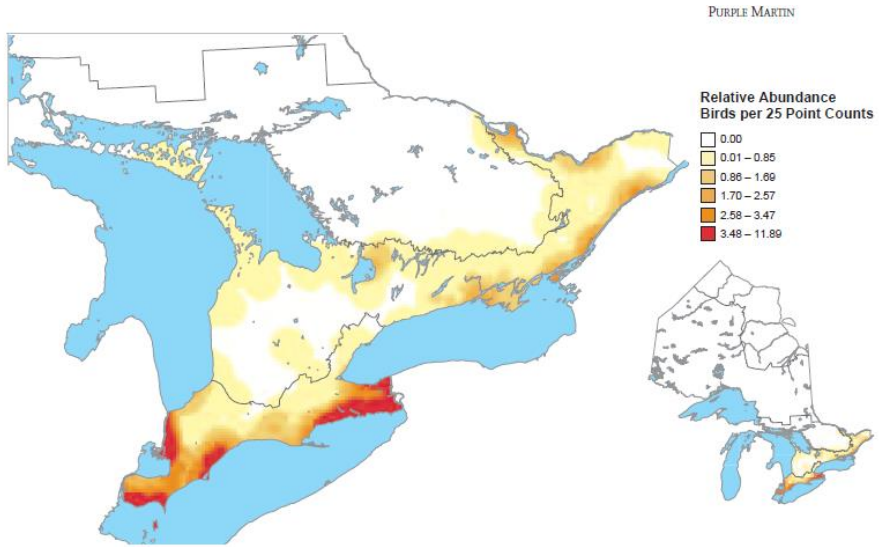
Eleanor Kee Wellman

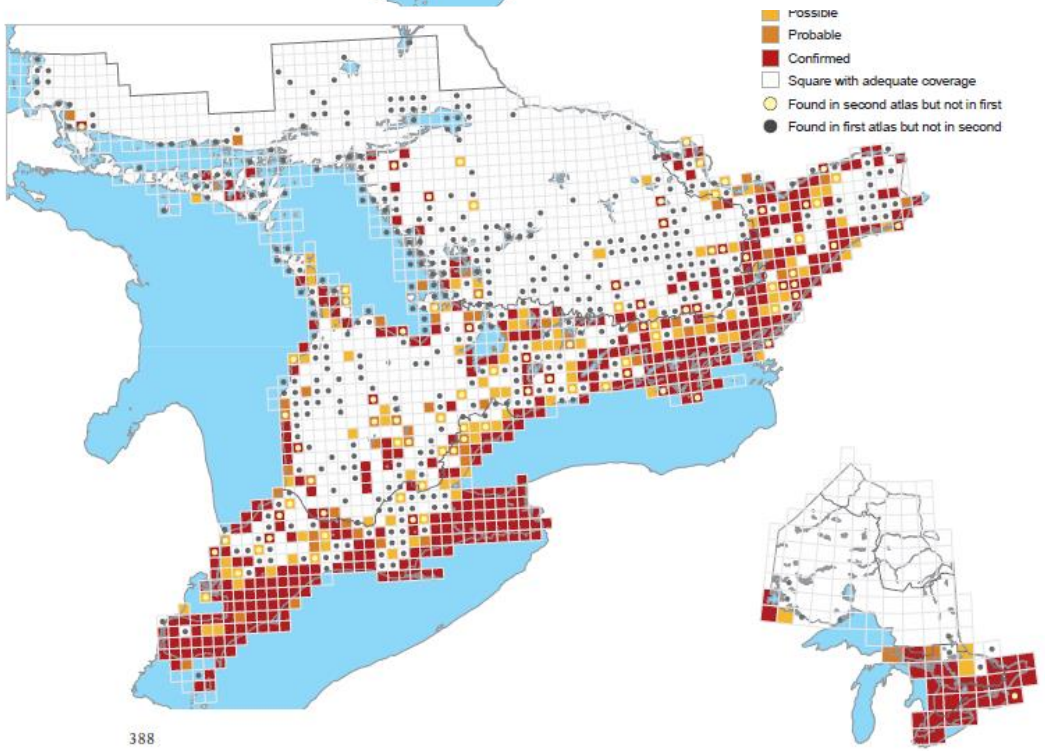
The Purple Martin is North America's largest swallow. Because of its habit of nesting socially in artificial nest boxes, it is well known, especially to those living near lar[illegible]odies in southern Ontario. It breeds t[illegible]n North[illegible]erica north to the Boreal [illegible]he w[illegible]t is absent from much of

Distribution and population status: There is evidence that the Purple Martin withdrew from the northern edge of its range in the last century, as the species no longer occurs in the Northwest Territories and its occurrence in British Columbia has contracted southward (Brown 1997). In Ontario, since the first atlas, the northern edge of the range has withdrawn from Lake Temagami, Thunder Bay, and Dryden and now occurs in the Rainy River area, near Sault Ste. Marie, and just north of North Bay. The second atlas shows a marked reduction throughout much of the species' Ontario range, with the most evident decreases in northern and inland areas. Overall, the probability of observation declined 46% between atlases.

Within southern Ontario, the northern edge of the Purple Martin's range shifted a significant 56 km south between atlases, which is the third-largest retraction of any species, exceeded only by the Cooper's Hawk (57 km) and Loggerhead Shrike (80 km). The largest decline was in the Southern Shield region, where the probability of observation declined by 80% between atlases. The species was not found breeding around Sudbury or Lake Nipissing during the second atlas. Regional Coordinators indicated that the Purple Martin has been extirpated from the Haliburton region, and that the nesting box of the last known colony in Muskoka was destroyed in a storm in 2005.

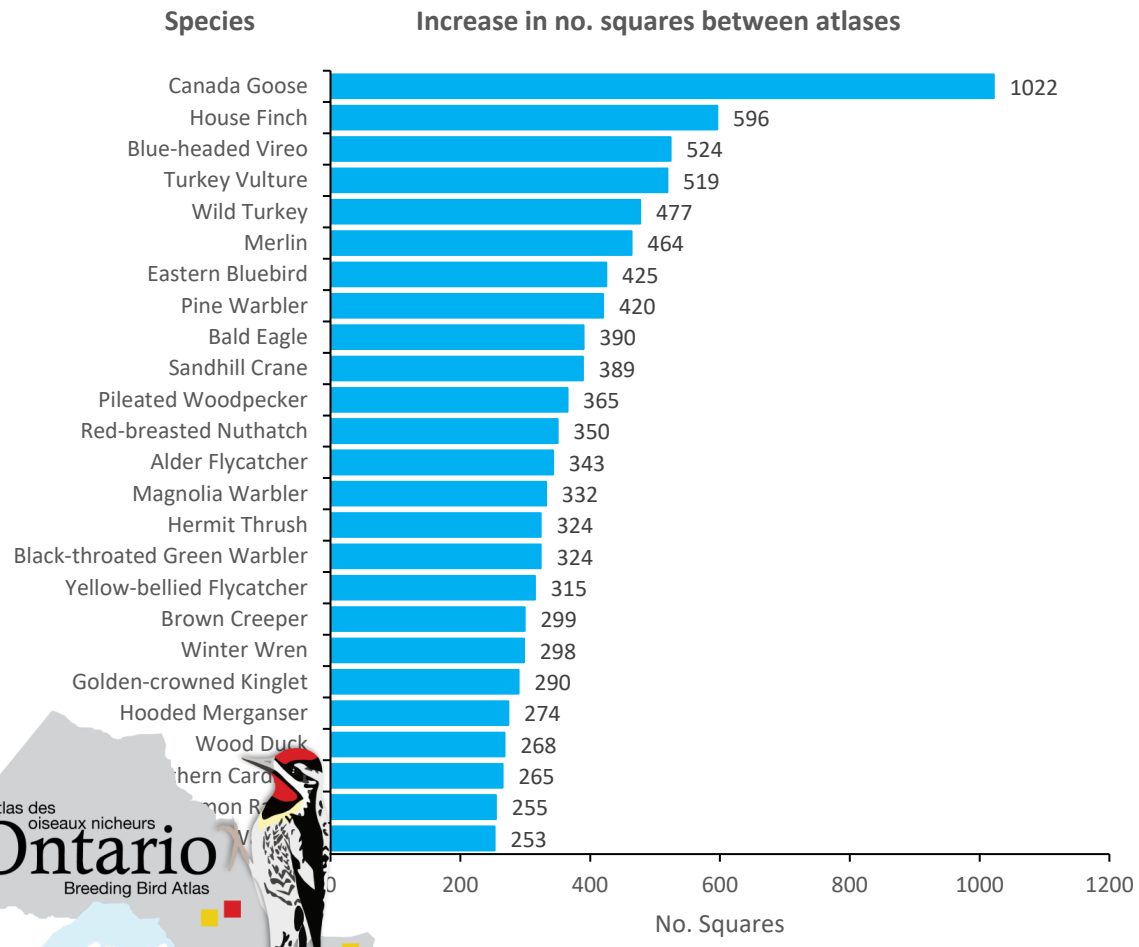
South of the Shield, the most evident declines are in inland areas and on the Bruce Peninsula. The Purple Martin was

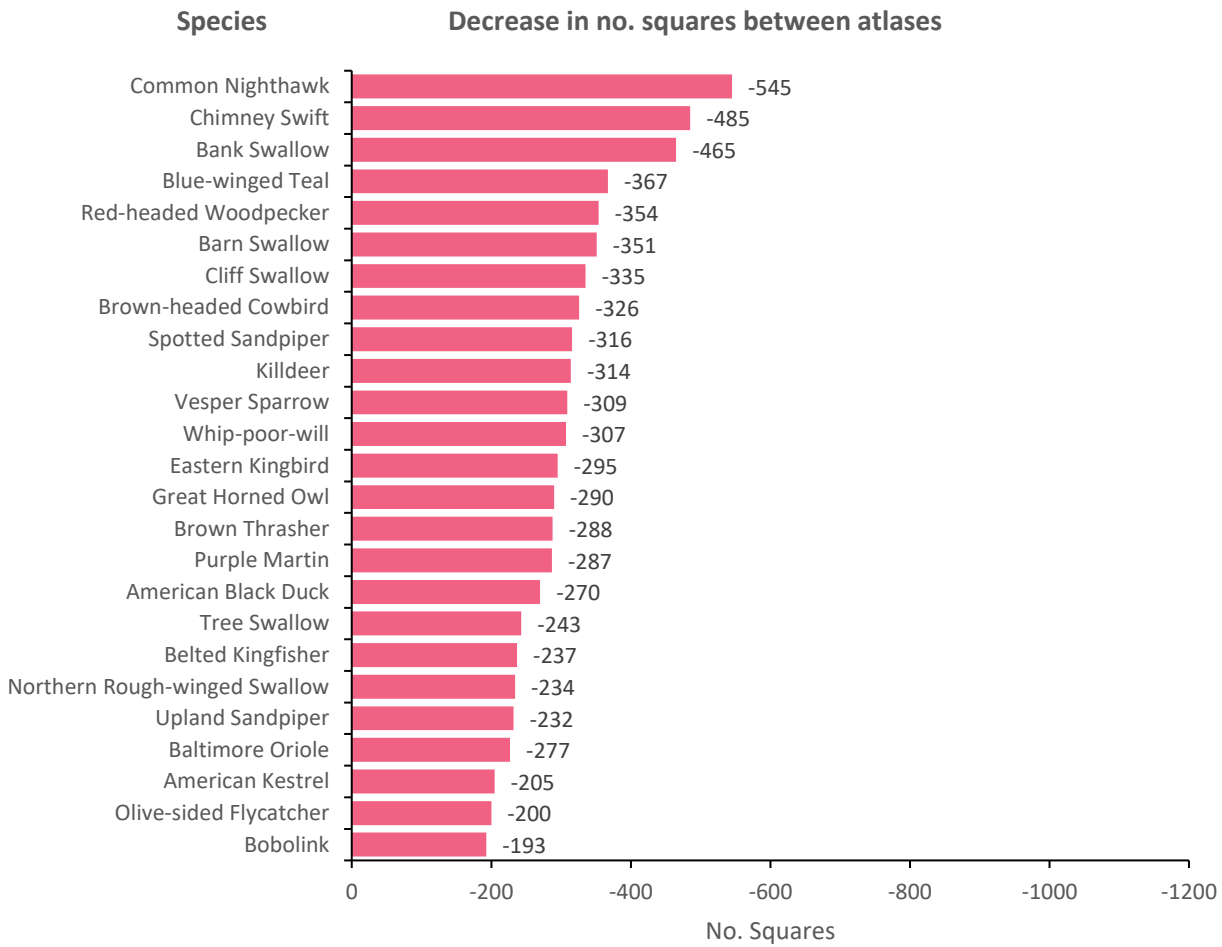




Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Atlas-2
2001-2005

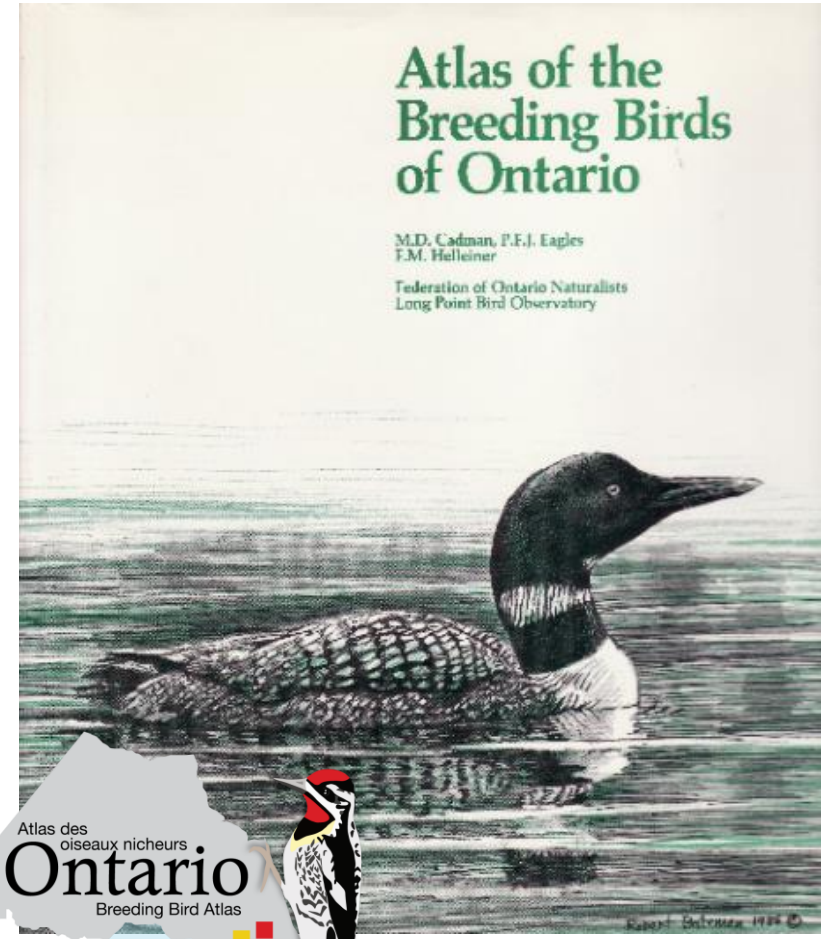


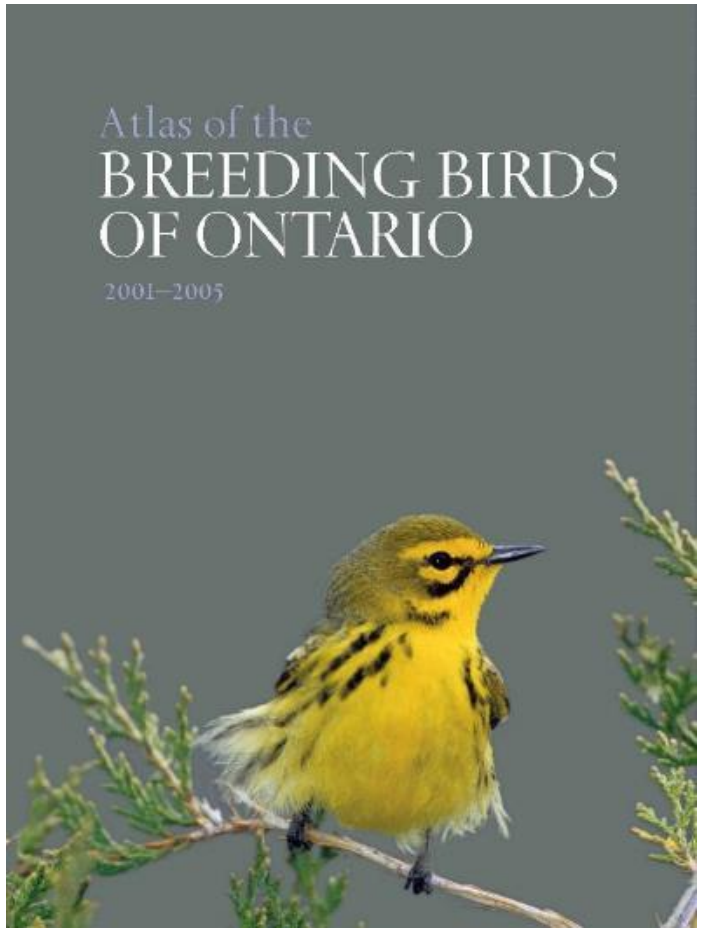


Atlas-1
1981-1985

Atlas-2
2001-2005

Atlas-3
2021-2025





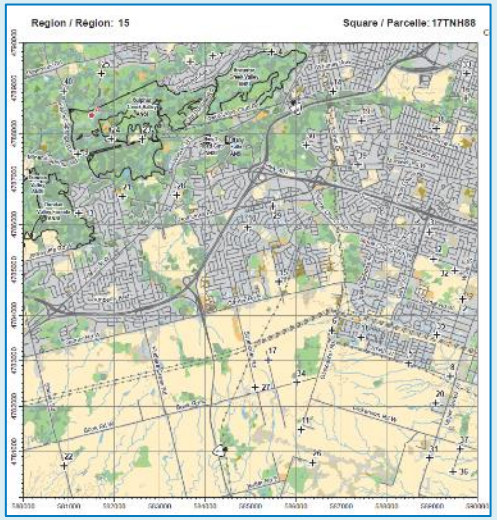
GOALS FOR ATLAS-3

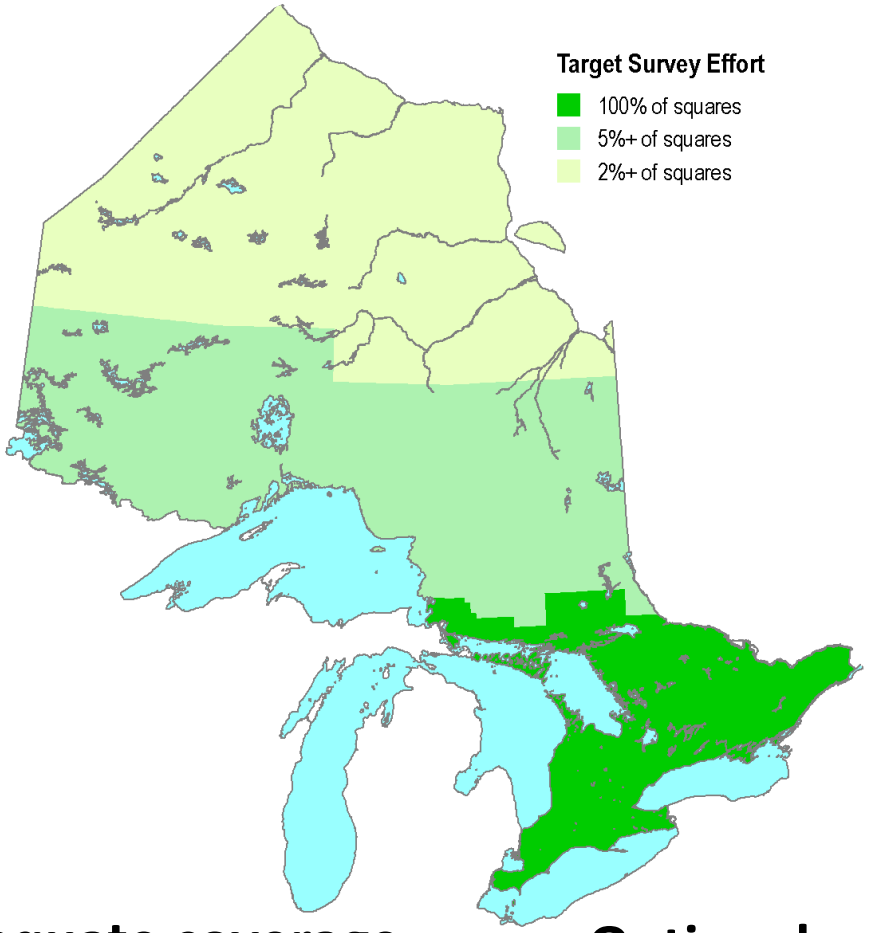
- Map distribution and abundance of Ontario's breeding birds
- Compare to previous Atlases
- Precise location data for significant species
- Make data available for conservation and land-use planning

Sandhill Cranes
by Dave Brown

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

SQUARE COVERAGE GOALS





Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

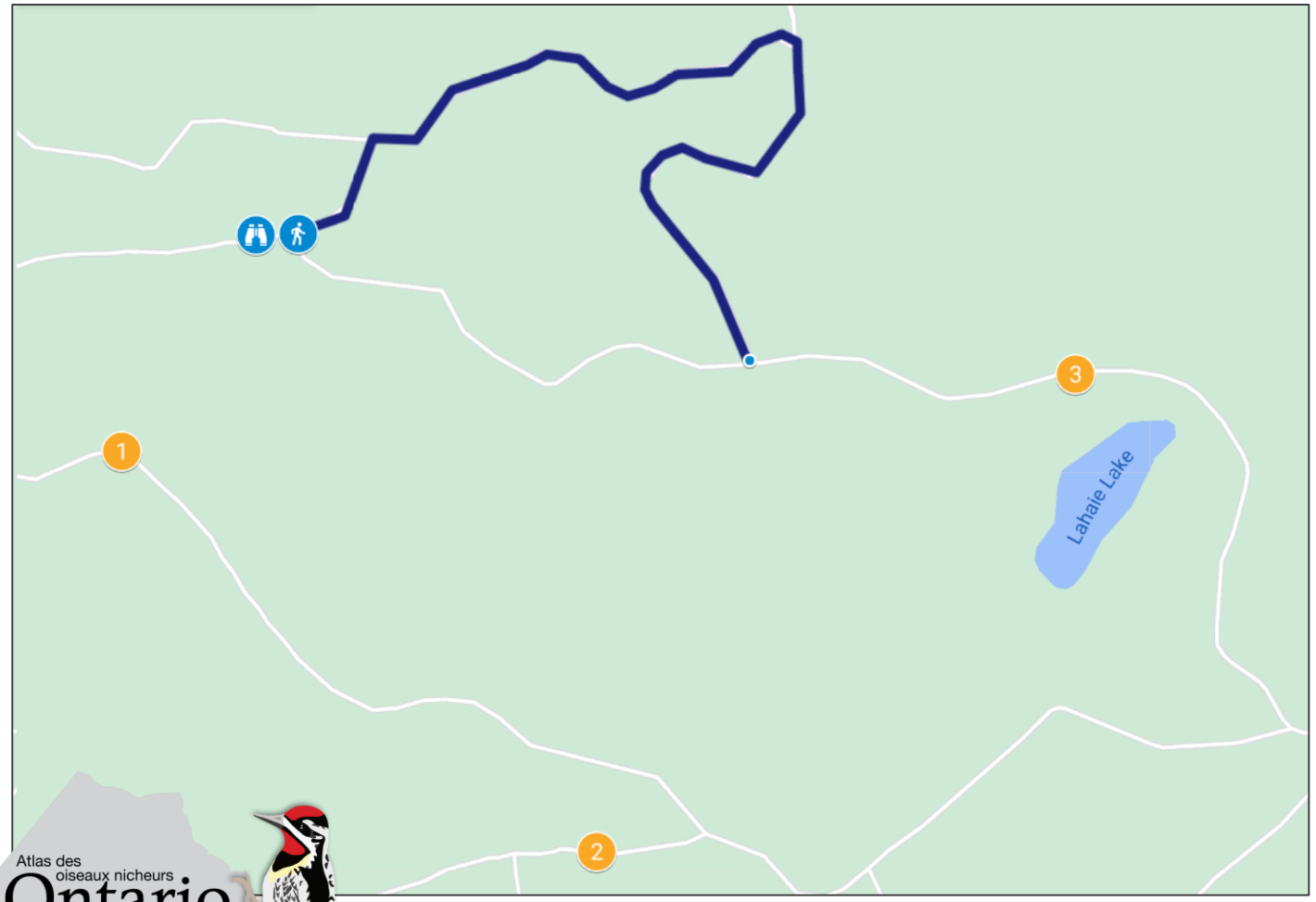
Adequate coverage

- **20** Hours (peak season)
- **25** Point Counts

Optional surveys

- Owls
- Nightjars
- Marshbirds

DATA COLLECTION



Checklists

- Record of all birds seen and heard
- No predetermined locations
- Stationary or travelling
- Any duration
- Anyone can contribute at their level

Point Counts

- Record of all birds seen and heard
- Mostly predetermined locations
- Stationary
- 5-min duration
- More advanced bird ID

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

DATA COLLECTION

- New technology allows for digital audio recordings
- “Digital Point Counts” collected by staff/volunteers with handheld recorders
- Autonomous Recording Units (ARUS) deployed widely

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

BREEDING EVIDENCE CODES

An important part of Atlassing

- 20 codes. Only a few are used a lot
- Don't have to memorize them!
- Most are obvious
- Observed < Possible < Probable < Confirmed
- Coding sheets on website and app

Observed

X	Species observed during its breeding season, but NOT in suitable nesting habitat (no breeding evidence found). Note that this code is rarely used as birds tend to occupy nesting habitat during the breeding season. Do not use for species known to be migrants.

Possible

H	Species observed in suitable nesting Habitat during its breeding season.
S	Singing male or adult producing other sounds associated with breeding (e.g., calls or drumming) in suitable nesting habitat during the species' breeding season.

Probable

M	Multiple singing/calling/drumming individuals (7 or more) heard during one visit to a single square and in suitable nesting habitat during the species' breeding season. Use with caution to avoid counting migrants.
P	Pair observed in suitable nesting habitat during the species' breeding season.
T	Presumed Territory based on the presence of an adult bird (usually singing, but not necessarily so), in the

Confirmed

NB	Nest building, including the carrying of nesting material, by all species except wrens and woodpeckers.
DD	Distraction Display, injury-feigning, or other displays attempting to draw attention away from a nest or young.
NU	Empty Nest Used or identifiable eggshells from earlier in the same nesting season.
FY	Recently Fledged Young (nidicolous species – whose young are raised in a nest) or downy young (nidifugous species – whose young leave the nest soon after hatching) incapable of sustained flight.
AE	Adult Entering, occupying, or leaving a nest site (visible or not) or whose behavior suggests the presence of an occupied nest.
FS	Adult carrying a Faecal Sac.
CF	Adult Carrying Food for young.
NE	Nest containing eggs
NY	Nest with Young (seen or heard)

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

DATA ENTRY OPTIONS

NatureCounts

App

Download and use
Provides safe dates and breeding evidence warnings
Automatically records your location/date/time

Website

Data can be recorded on paper, notebook, checklist data form, and entered on the NatureCounts website.

eBird

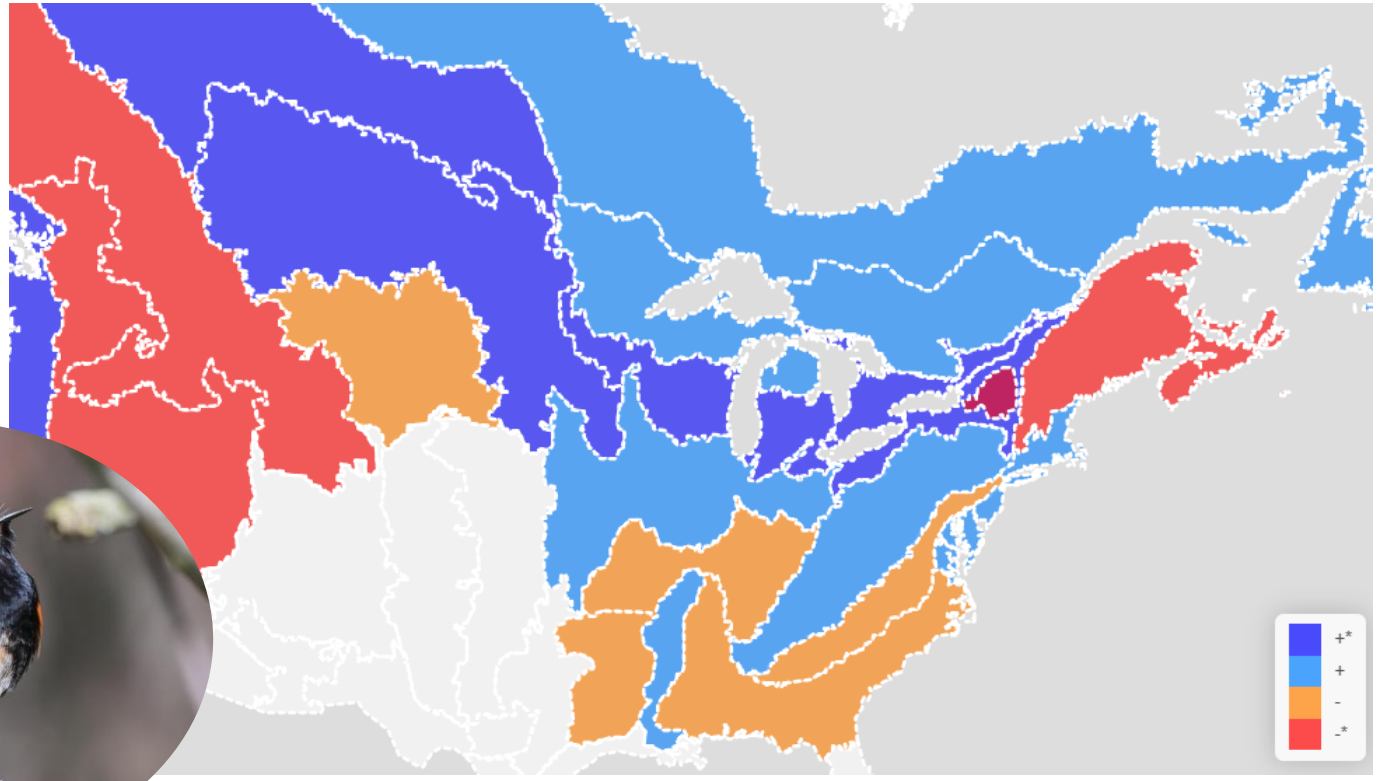
* It is possible to use eBird and then transfer your checklists to the Atlas website; this will require entering some missing data.

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Why so important? Other bird data sources

Breeding Bird Survey

- Very important for trends
- Restricted to areas with roads
- Most effective for songbirds



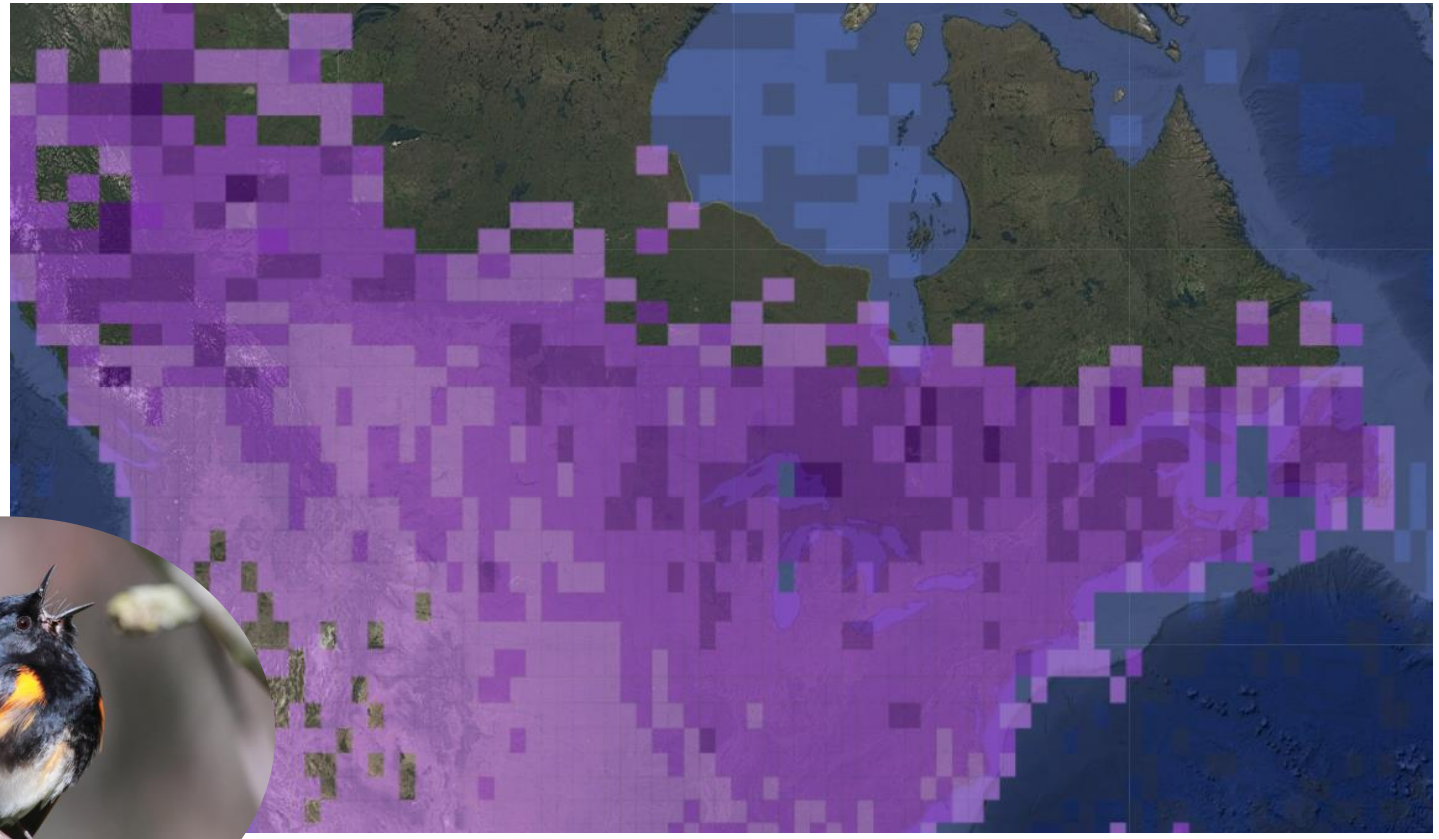
American Redstart BBS trend map by Bird Conservation Region

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Why so important? Other bird data sources

eBird

- Very important for location data
- Opportunistic – focuses on hotspots
- Dip in effort during breeding season



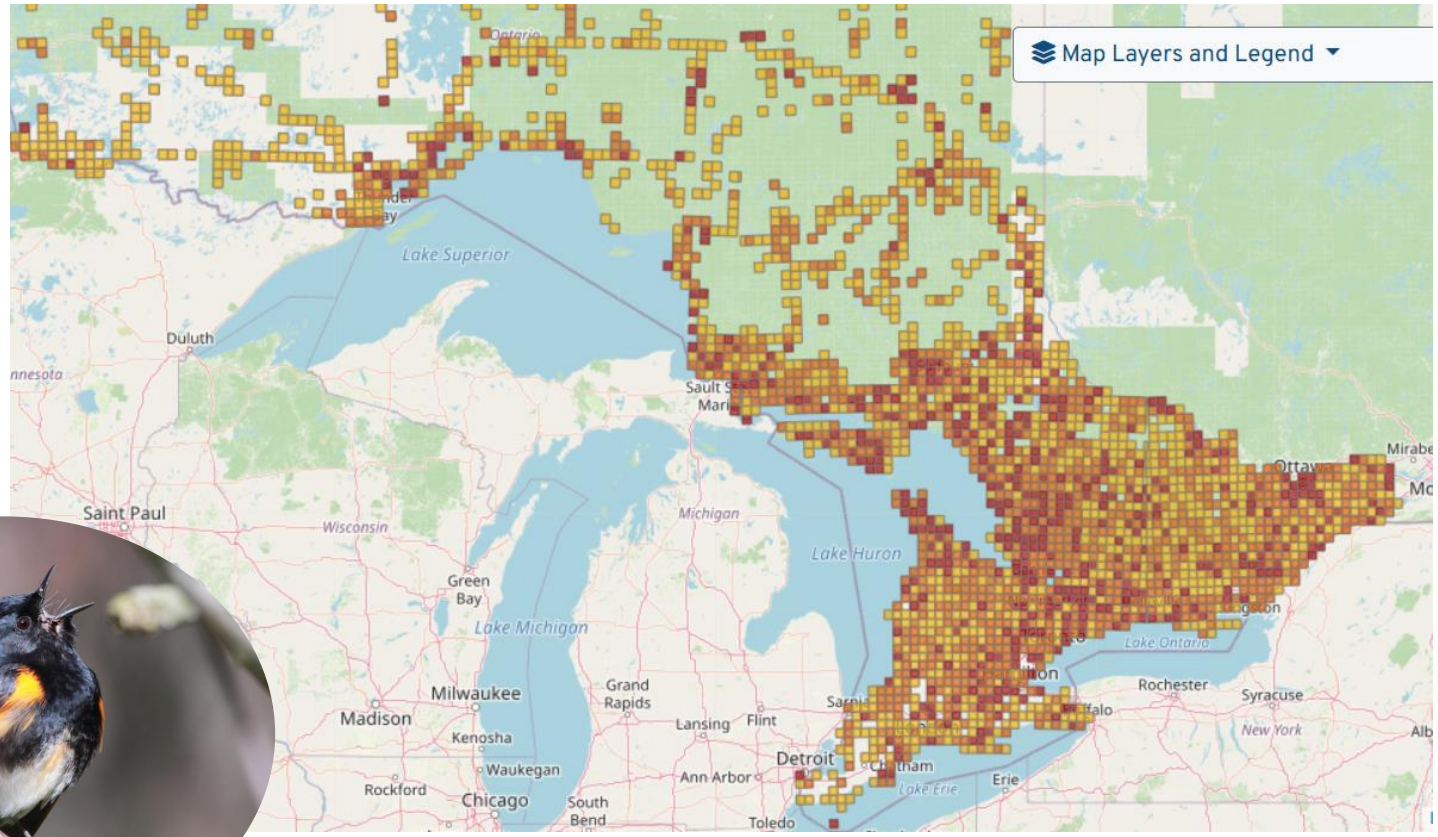
American Redstart eBird frequency map

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Why so important?

Atlas-3

- 4000 10x10 km squares
- 2 million records
- 120,000 hours
- 60,000 point counts
- Change between Atlases



American Redstart Atlas-3 map

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Bird status and Species at Risk

- COSSARO, COSEWIC designations
- Recovery Strategies and Action Plans
- Critical habitat
- Population/distribution objectives

Protected Areas

- Ecological role of protected areas
- Identification of protected areas
- Advice for protected area management

Applications of data

on the occurrence and relative abundance of bird species over time

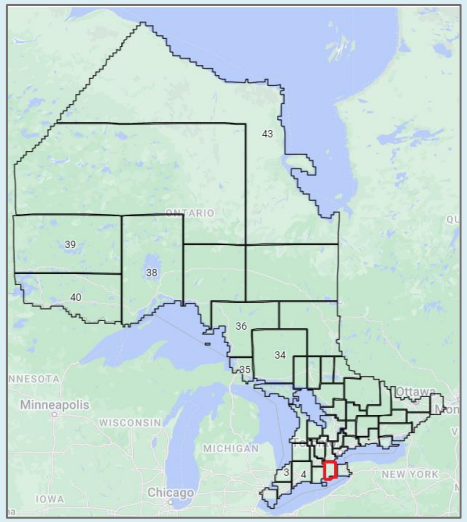
Conservation Planning

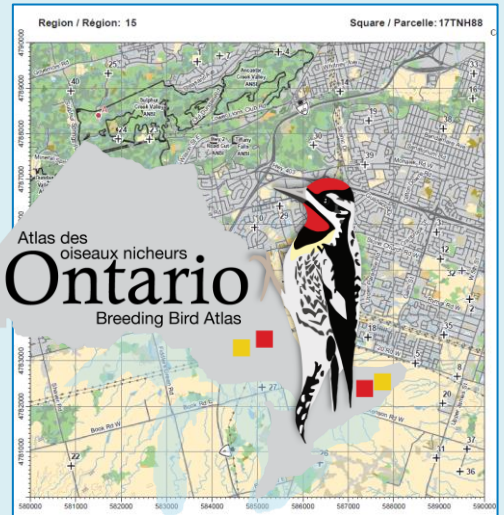
- How much habitat is enough?
- Relationships to ecological features
- Threats to birds and their habitats

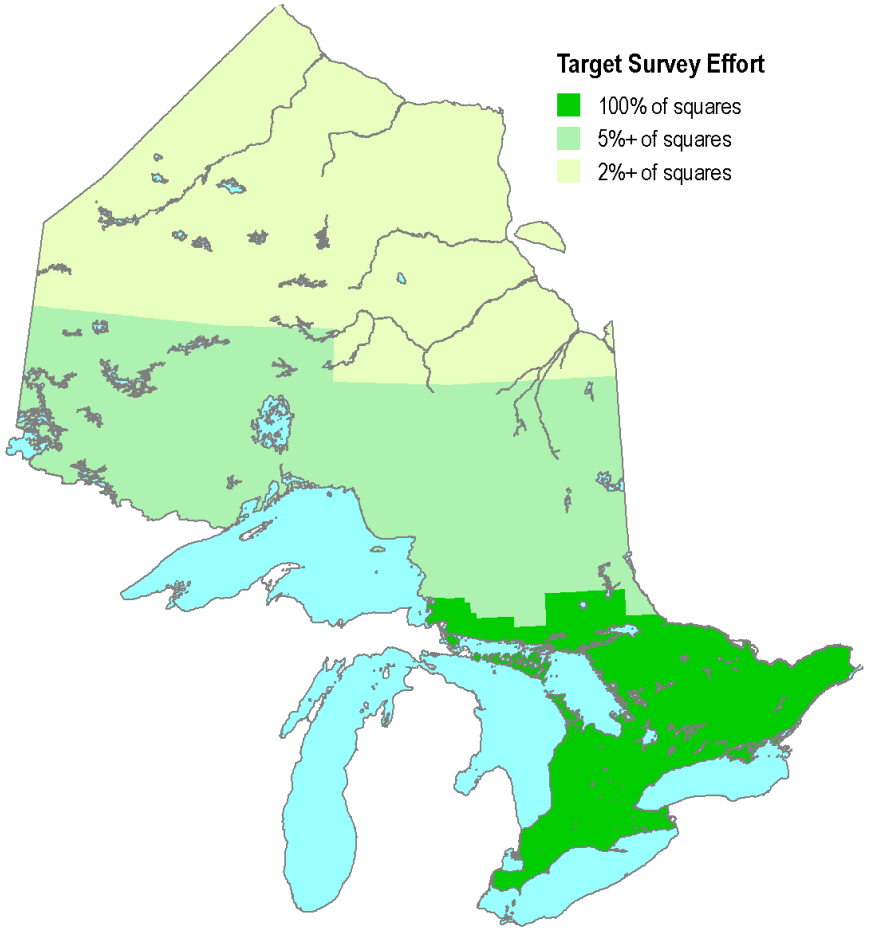
Research

- Phenology
- Effects of forestry
- Effects of climate change

SQUARE COVERAGE GOALS







Adequate coverage

20 Hours (peak season)

25 Point Counts

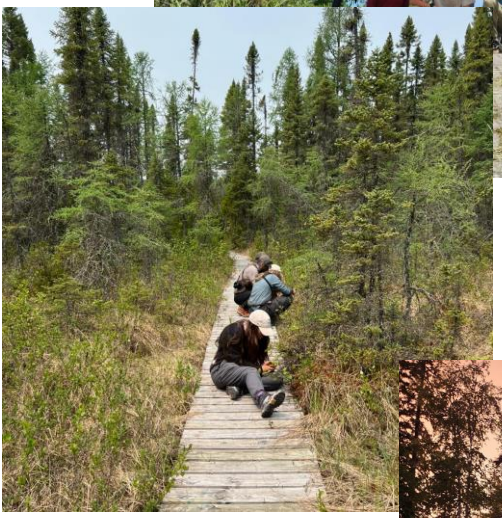
Optional surveys

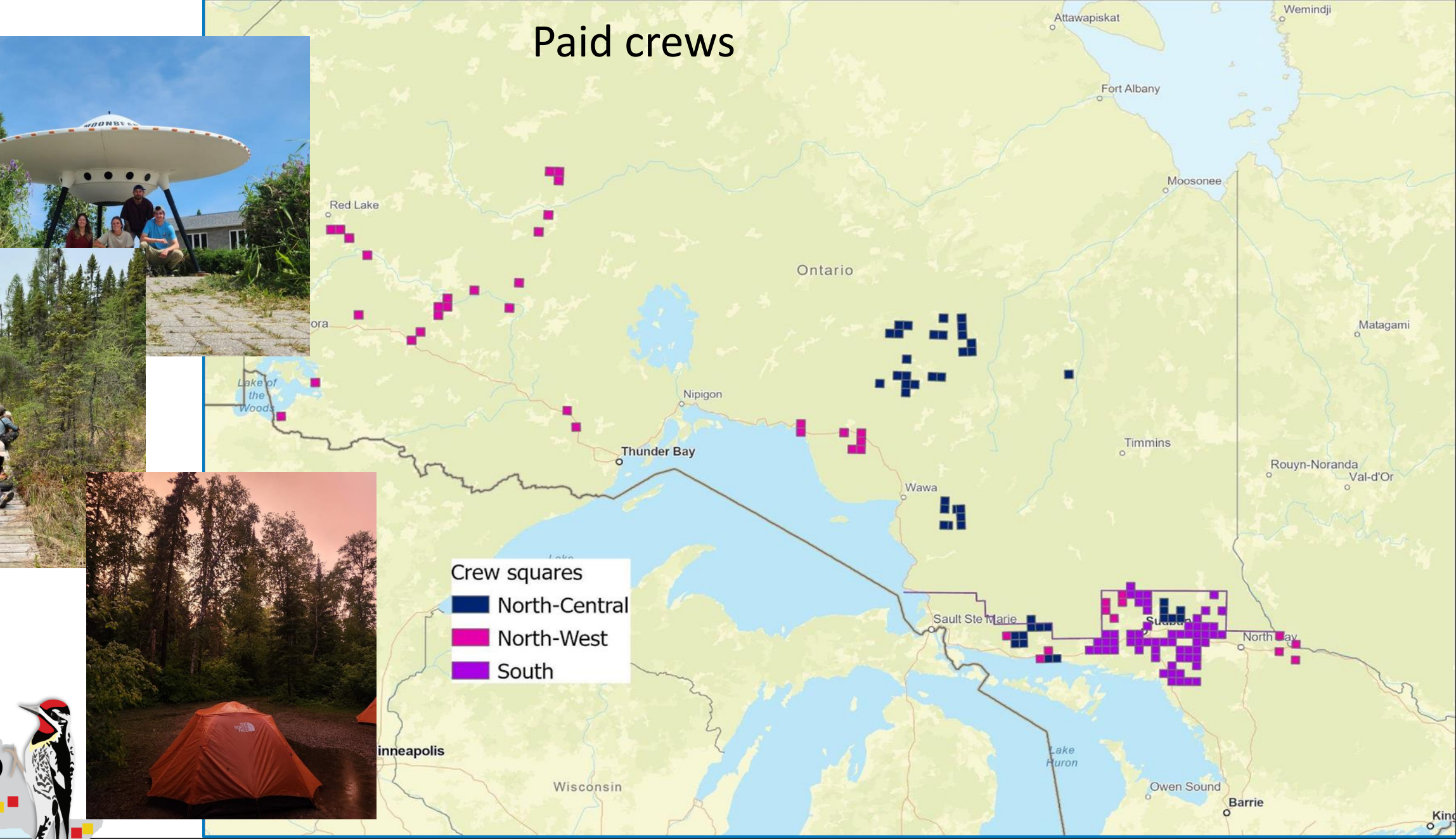
Owls

Nightjars

Marshbirds

Paid crews





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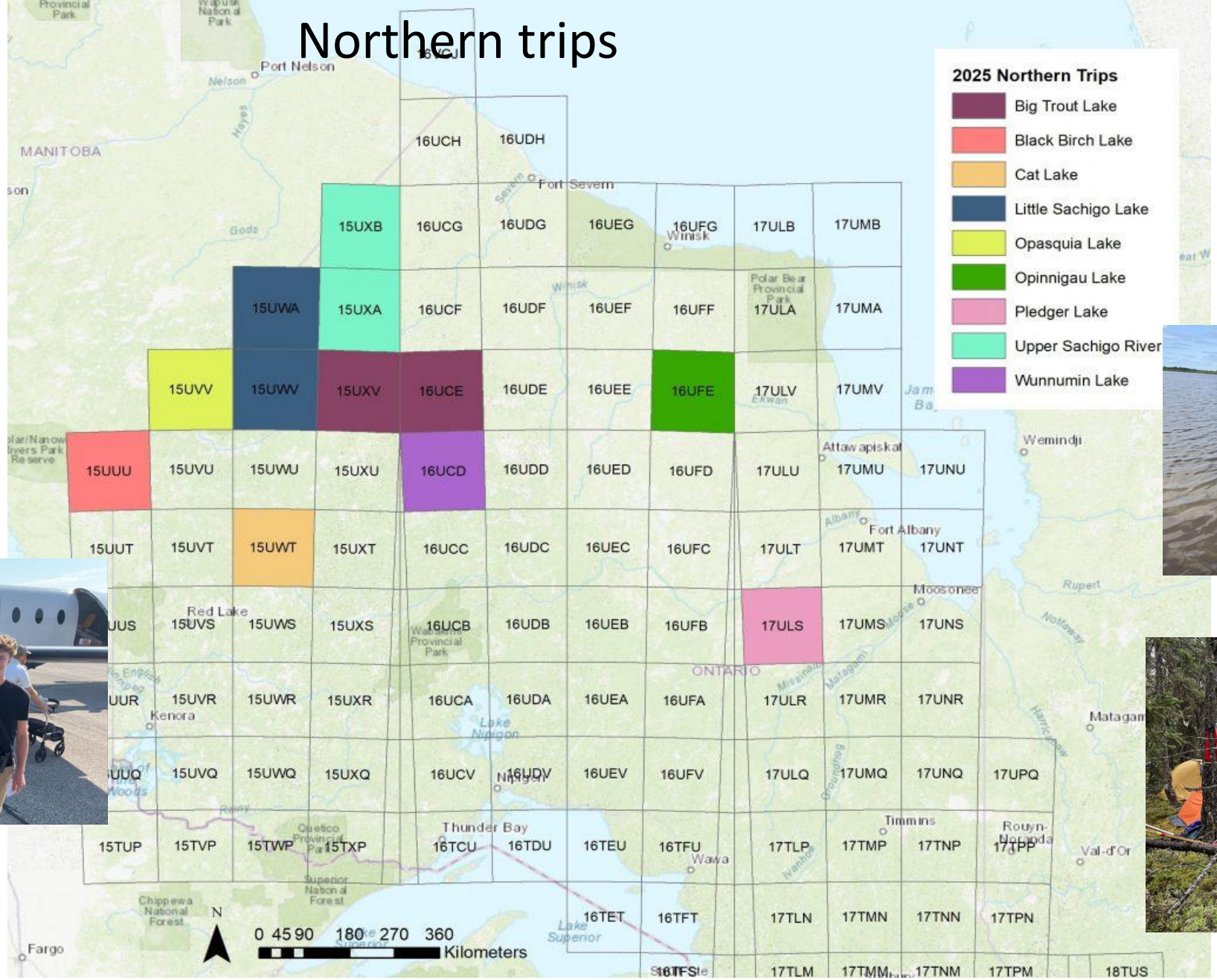
Northern trips



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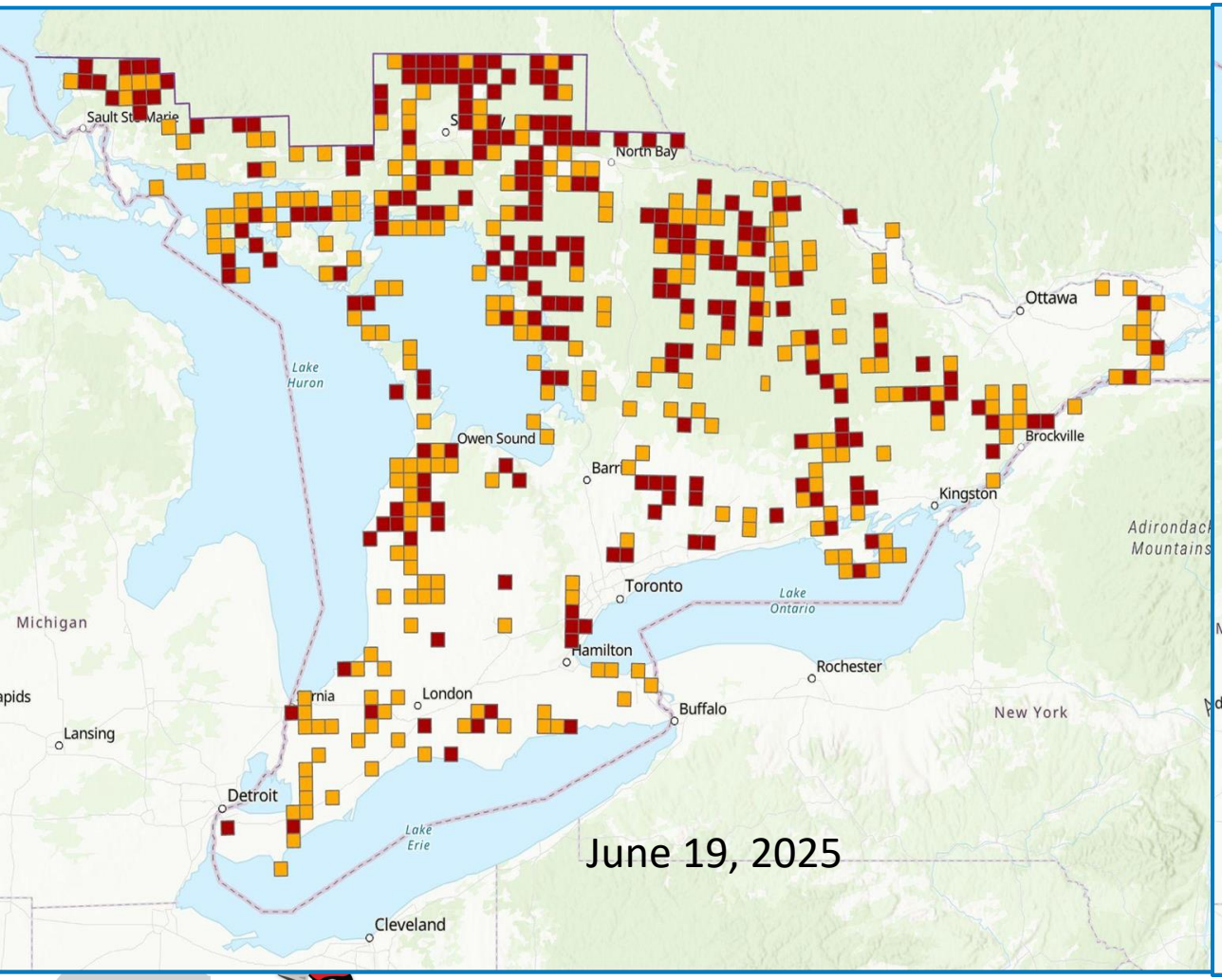
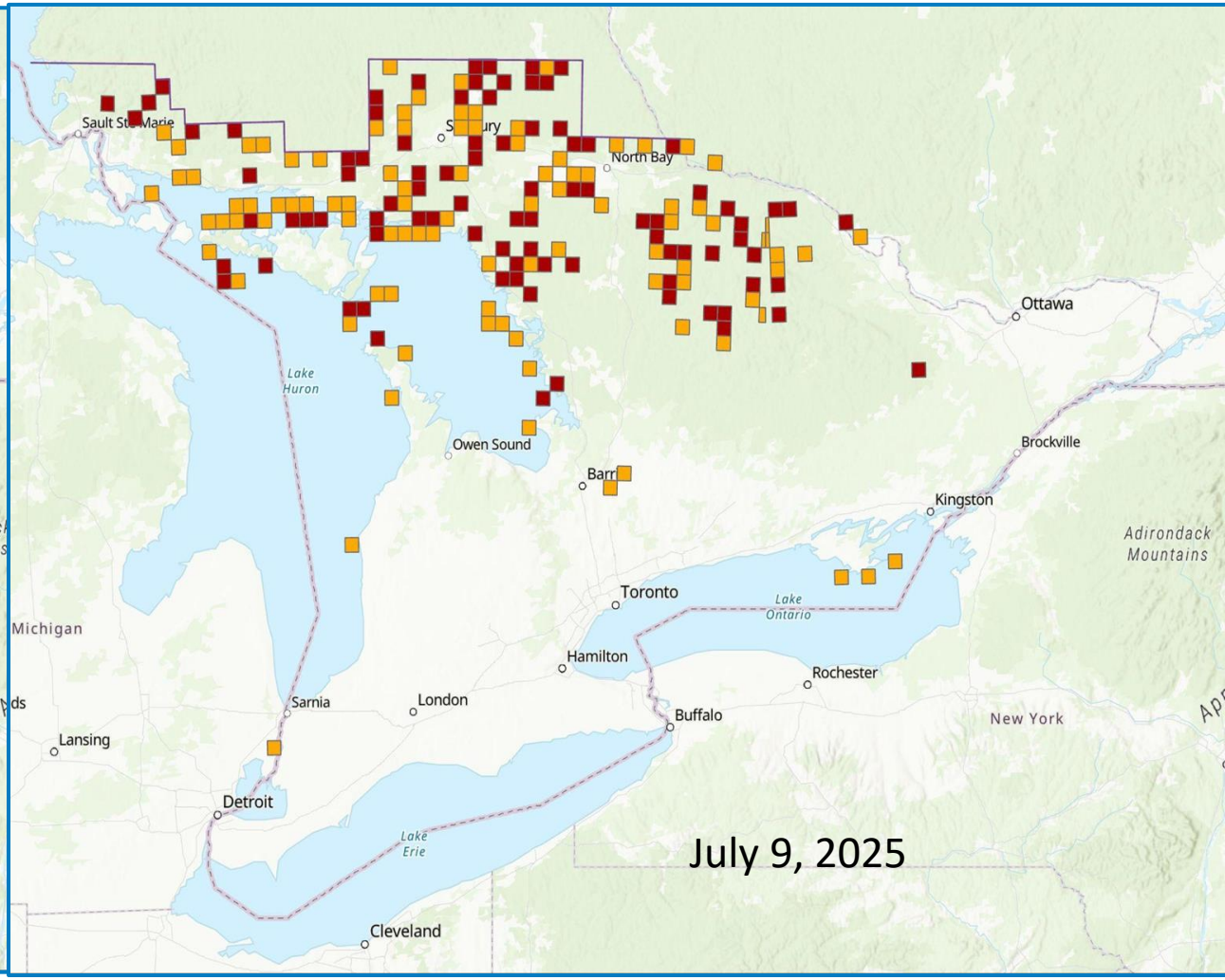
Square bashes

The BEAST (Bird Emergency Atlas Survey Team!)





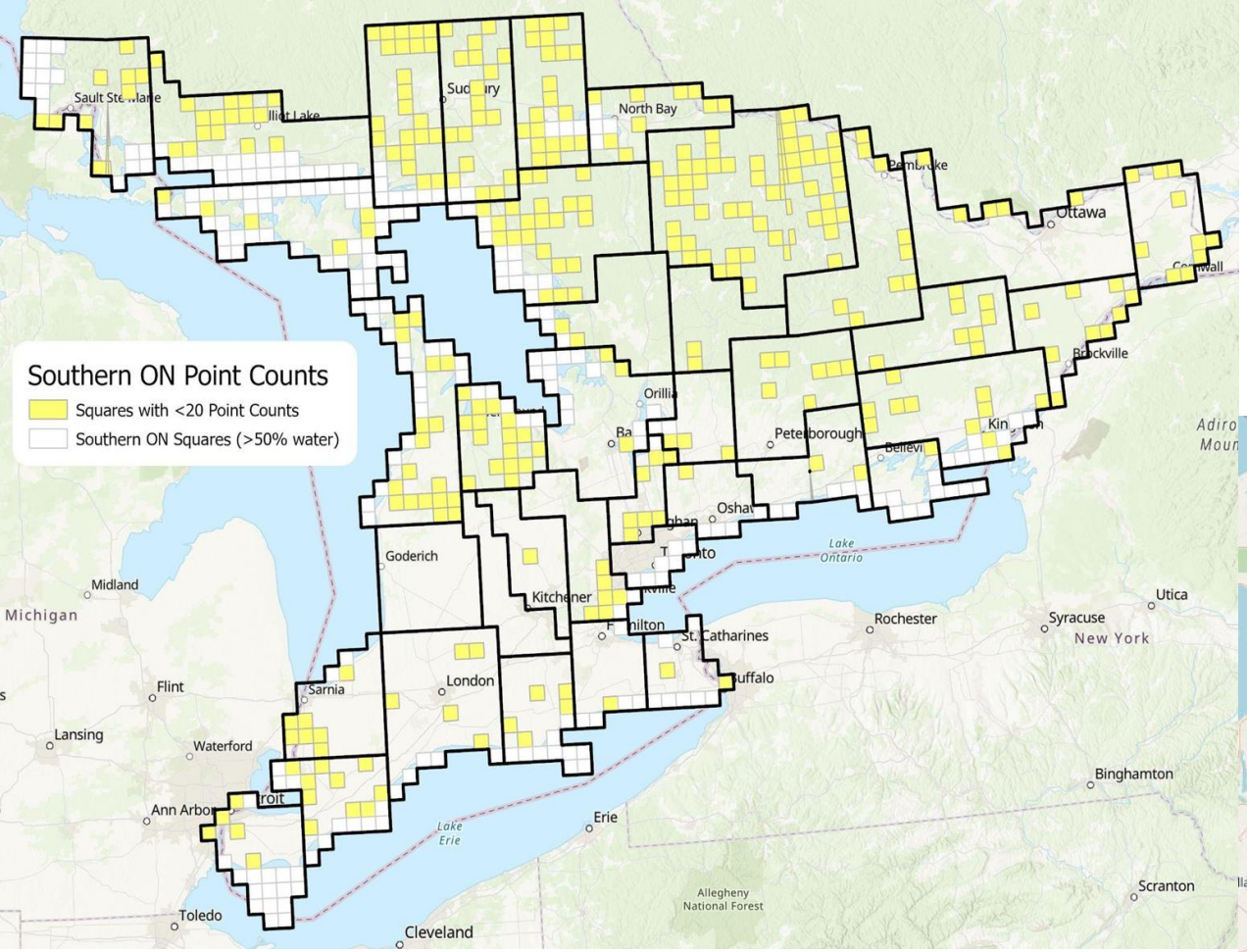
Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

orange = low priority

red = high priority

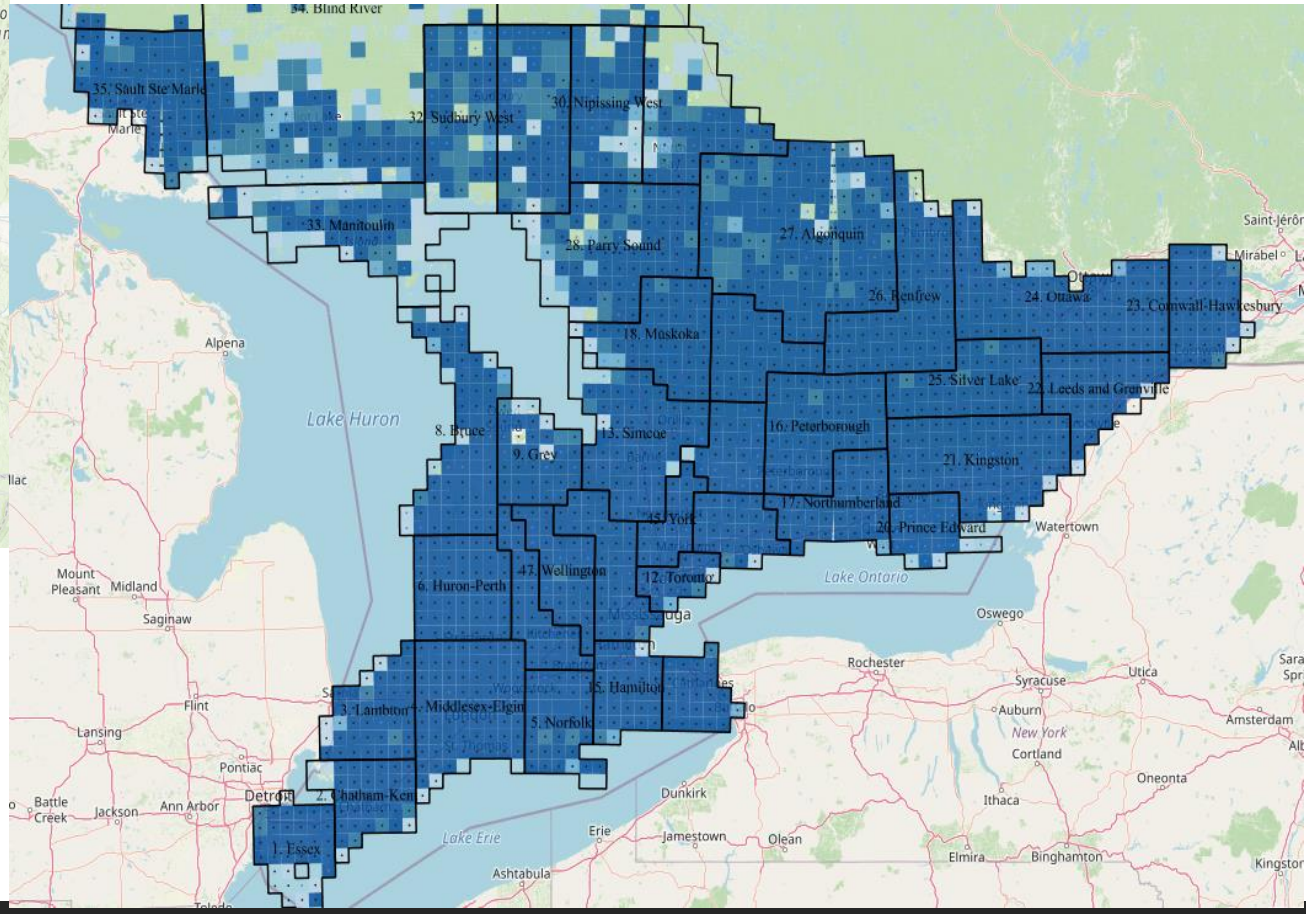
	Atlassers	Species	Squares	Records	Point Counts	Hours
Today	1,999	300	4,544	3,716,598	70,185	161,746 (100,157)
February	1,696	292	4,028	1,983,439	60,800	122,351 (74,367)

Point Counts



Before 2025 season

Today



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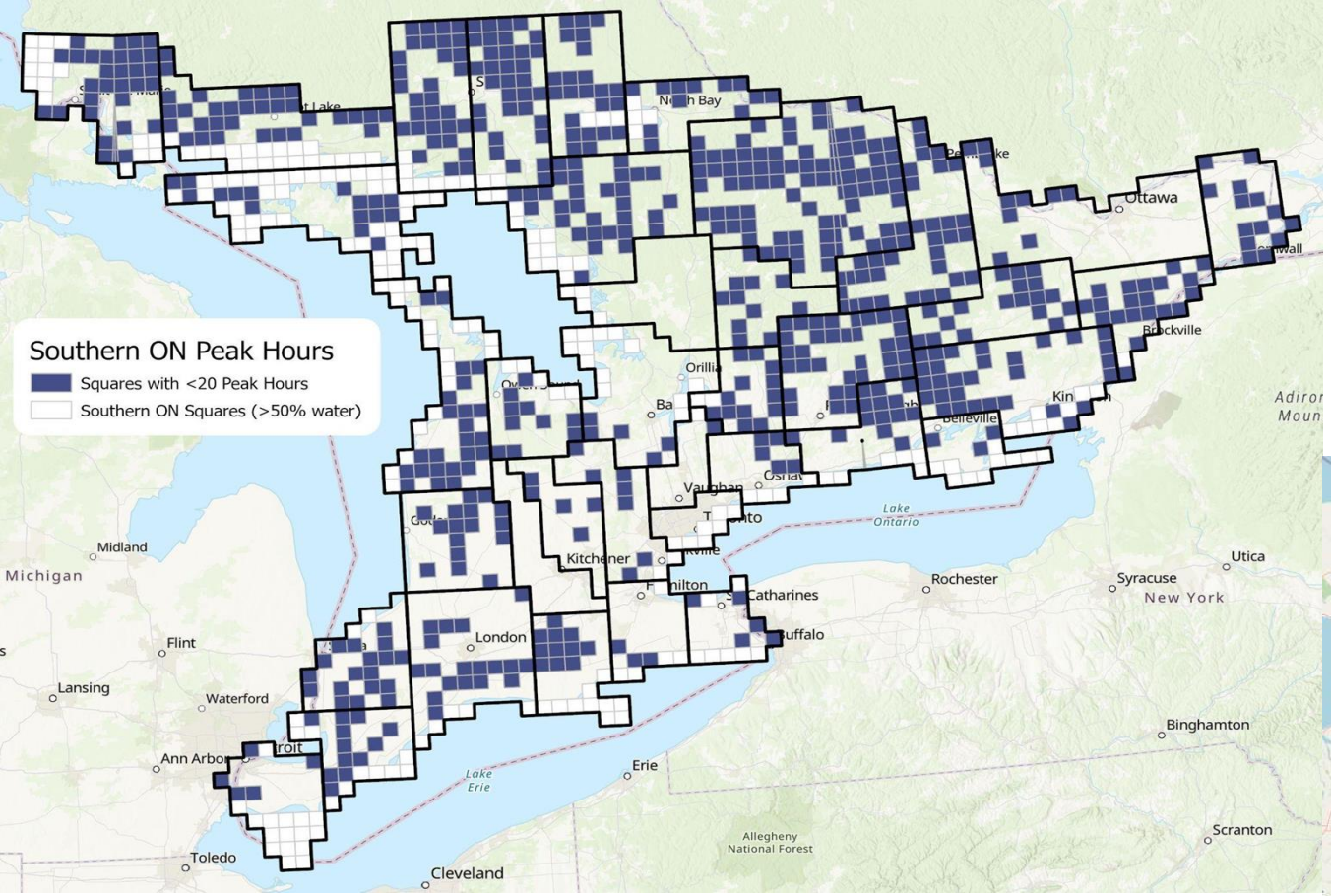
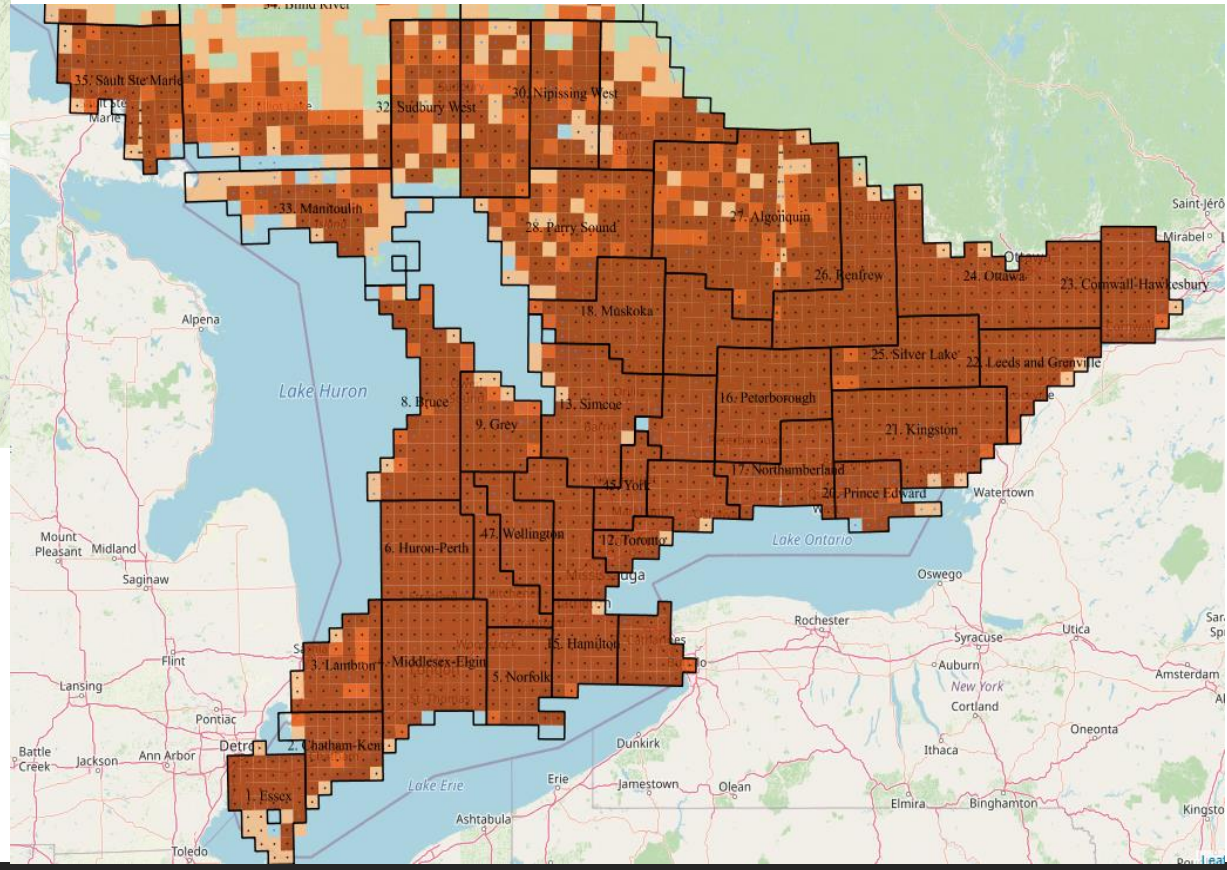
Peak season hours



Before 2025 season

Today



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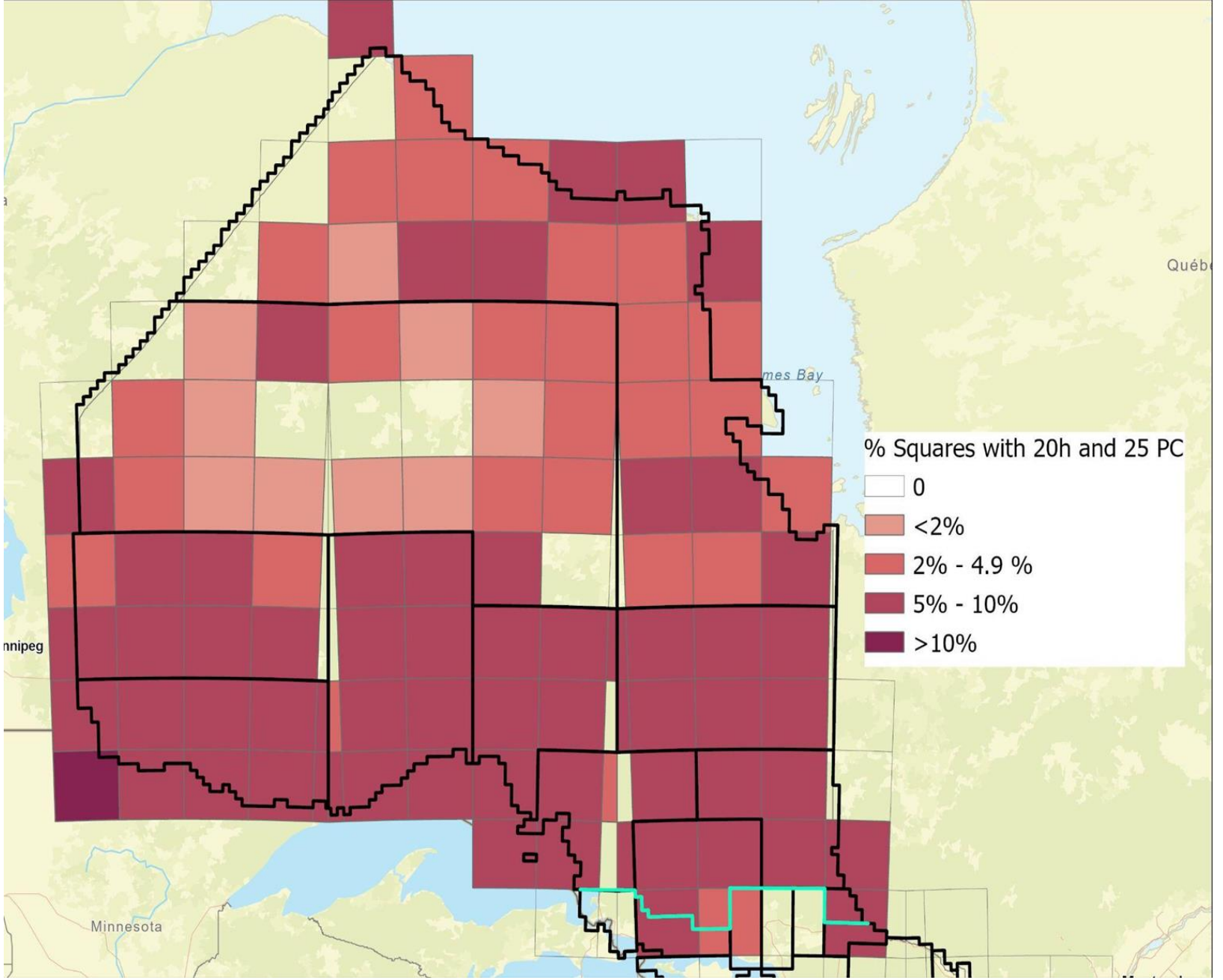

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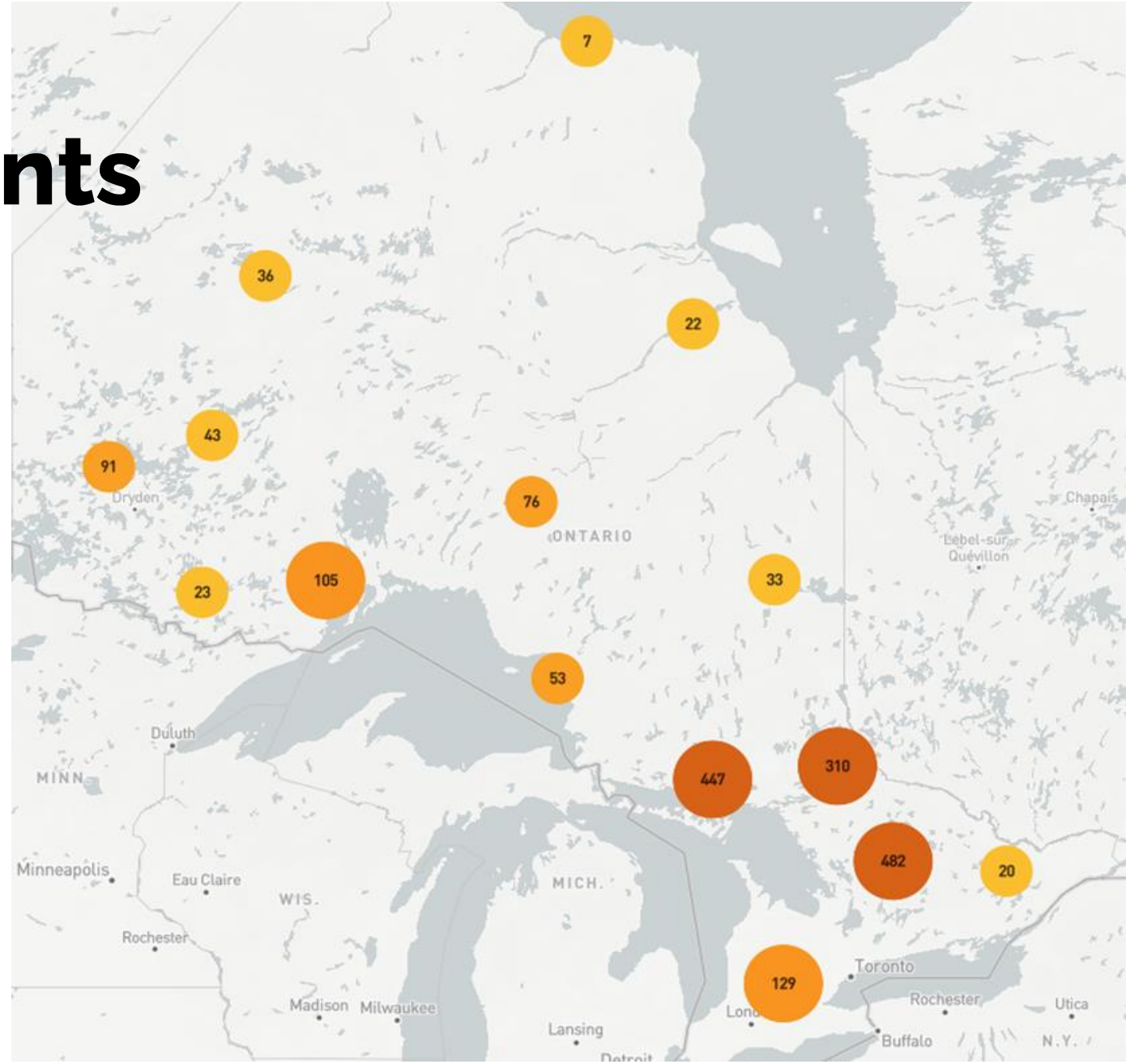
Digital Point Counts

- Digital point counts allows all skill levels to contribute point counts.
- Increasing uptick:
  - 900 in 2021
  - 1,600 in 2022
  - 2,600 in 2023
  - 3,900 in 2024
  - 2,900 in 2025

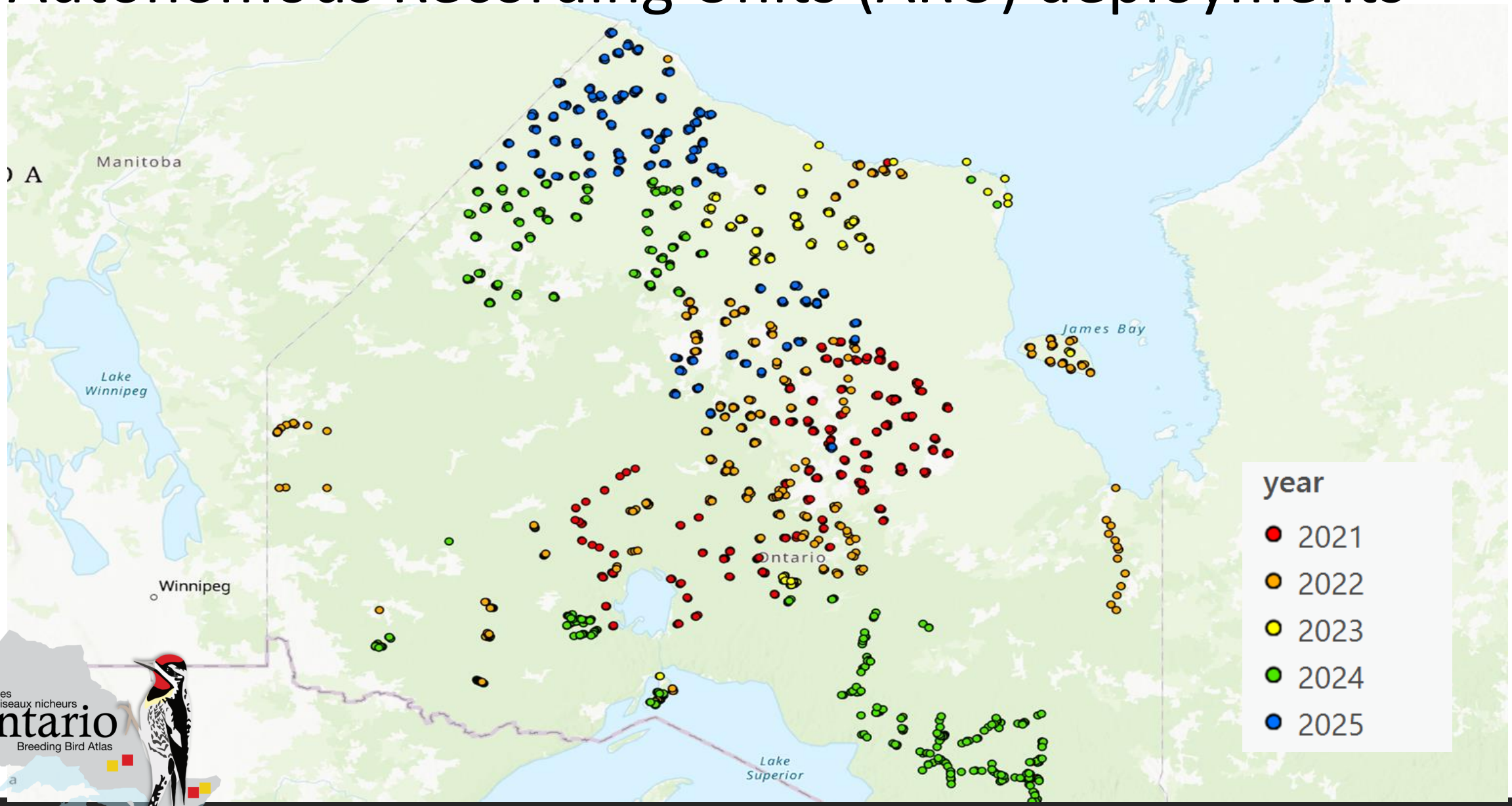


Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Autonomous Recording Units (ARU) deployments

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Autonomous Recording Units (ARU) deployments



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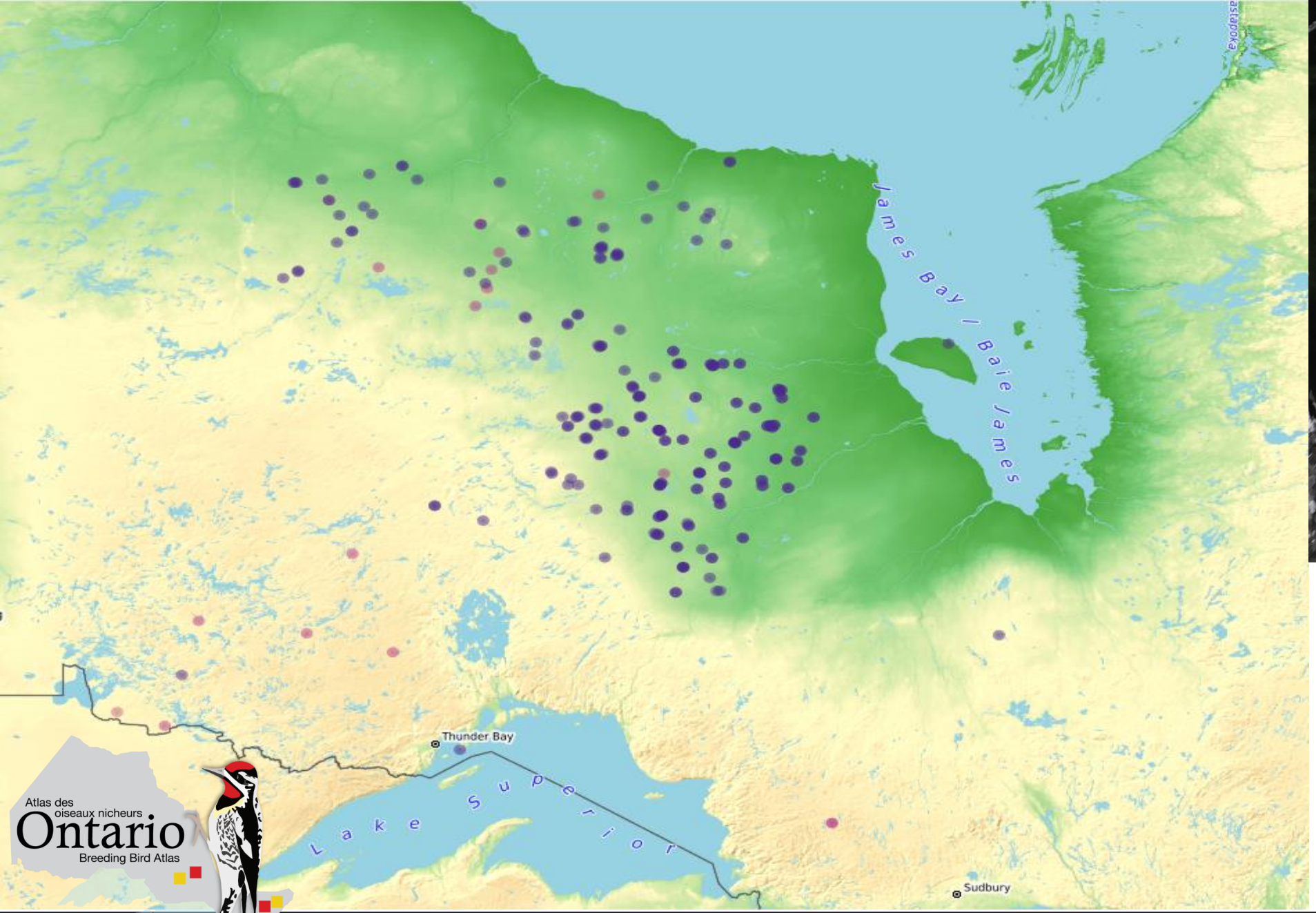
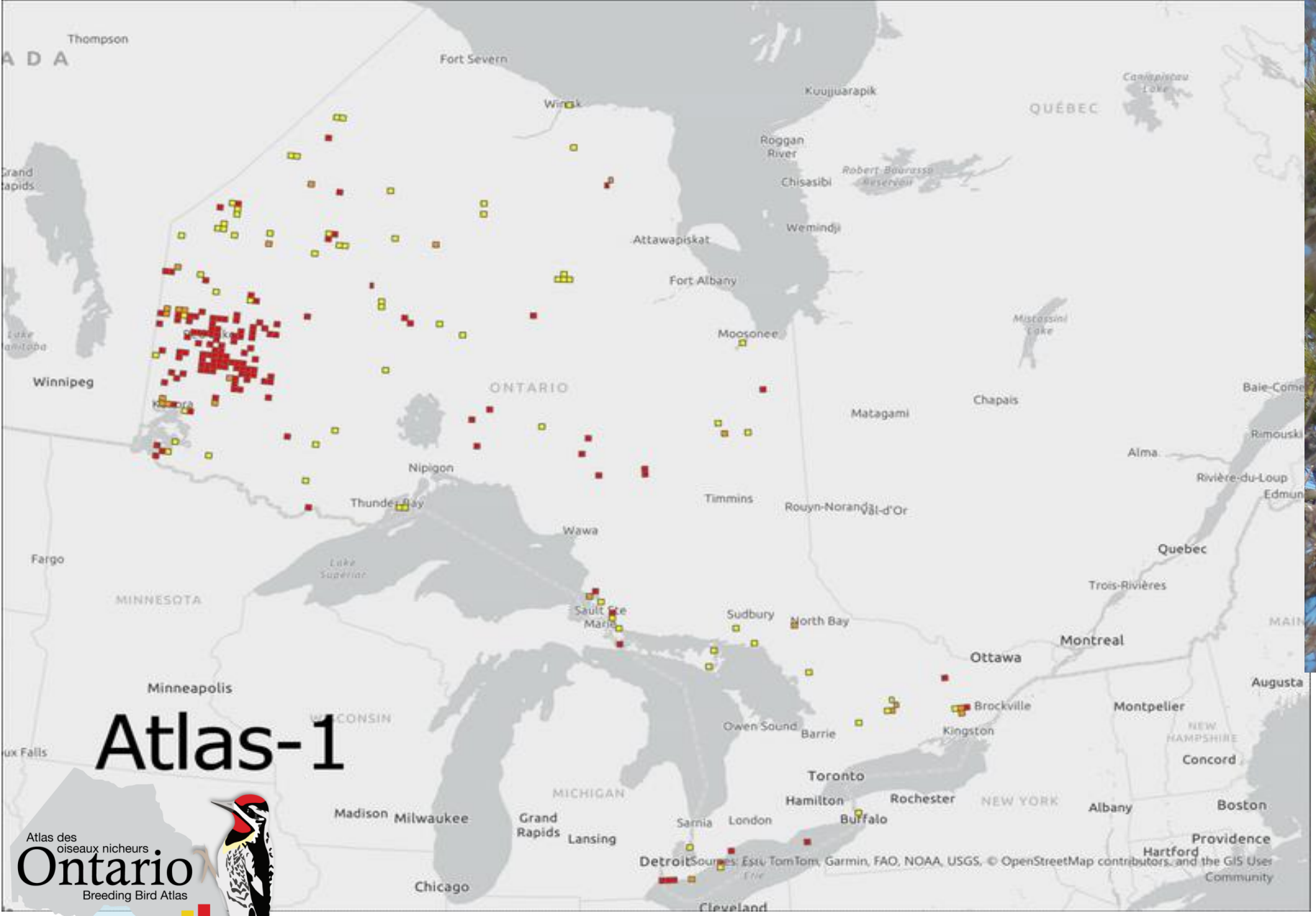
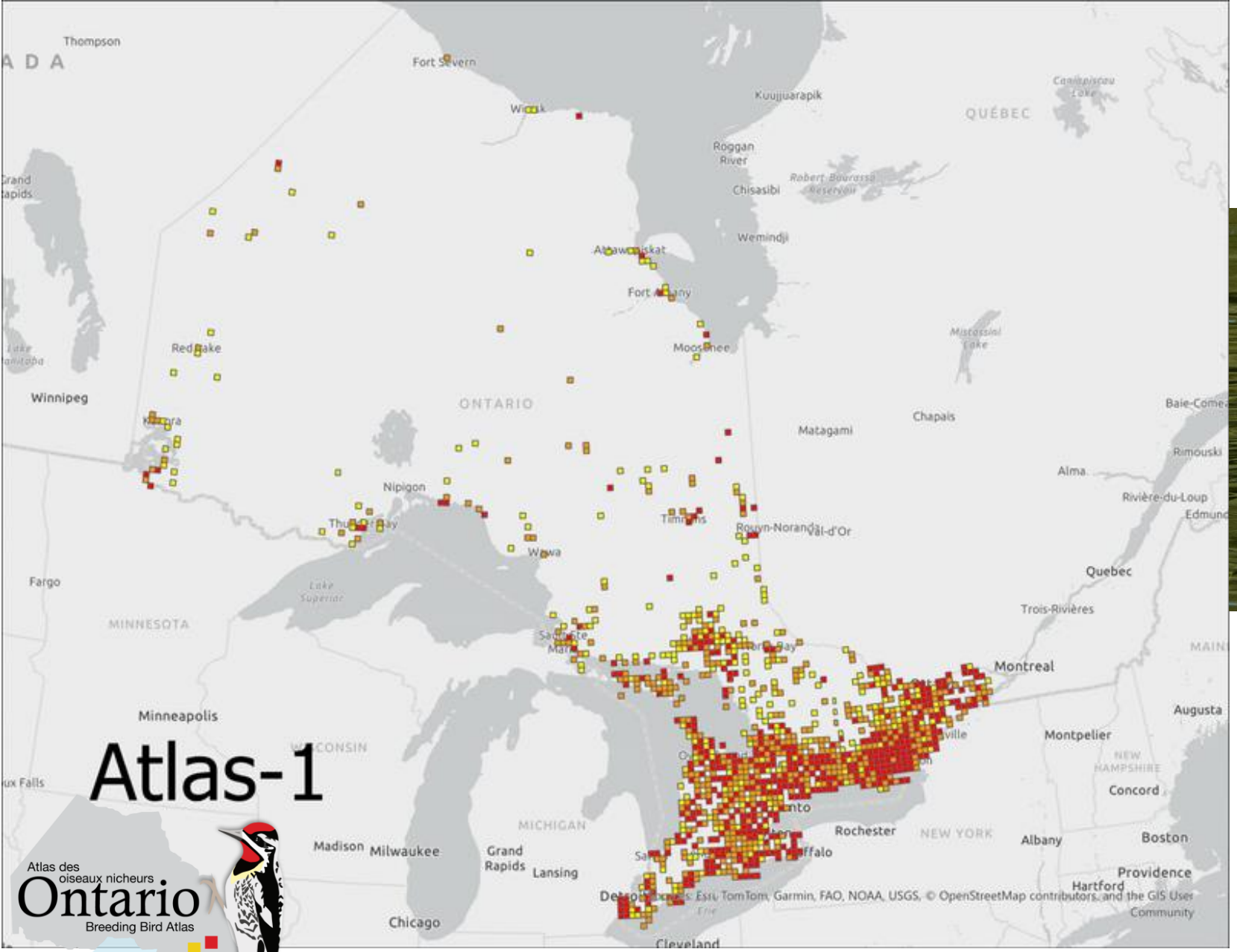


Great Gray Owl by Abbey Lewis

Blue dots = ARU
Pink dots = Atlassers

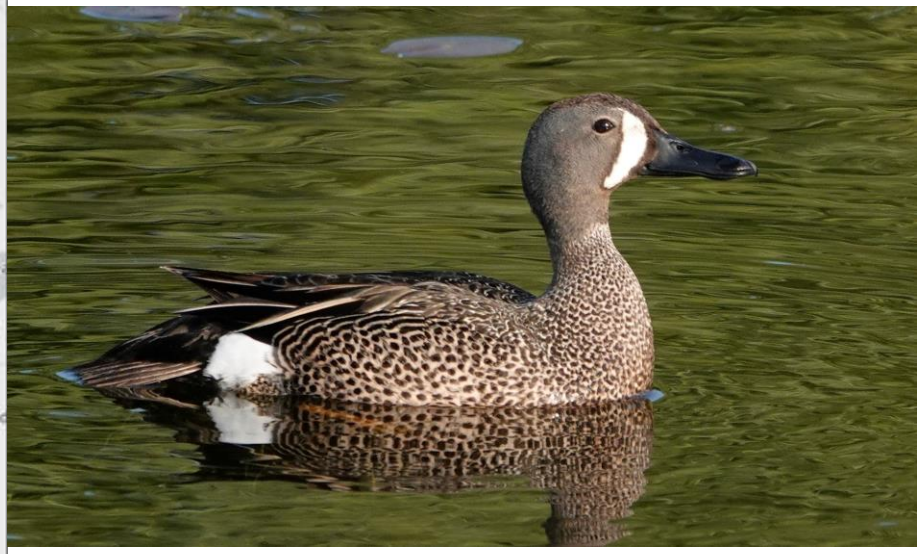


Bald Eagle by Alison Little

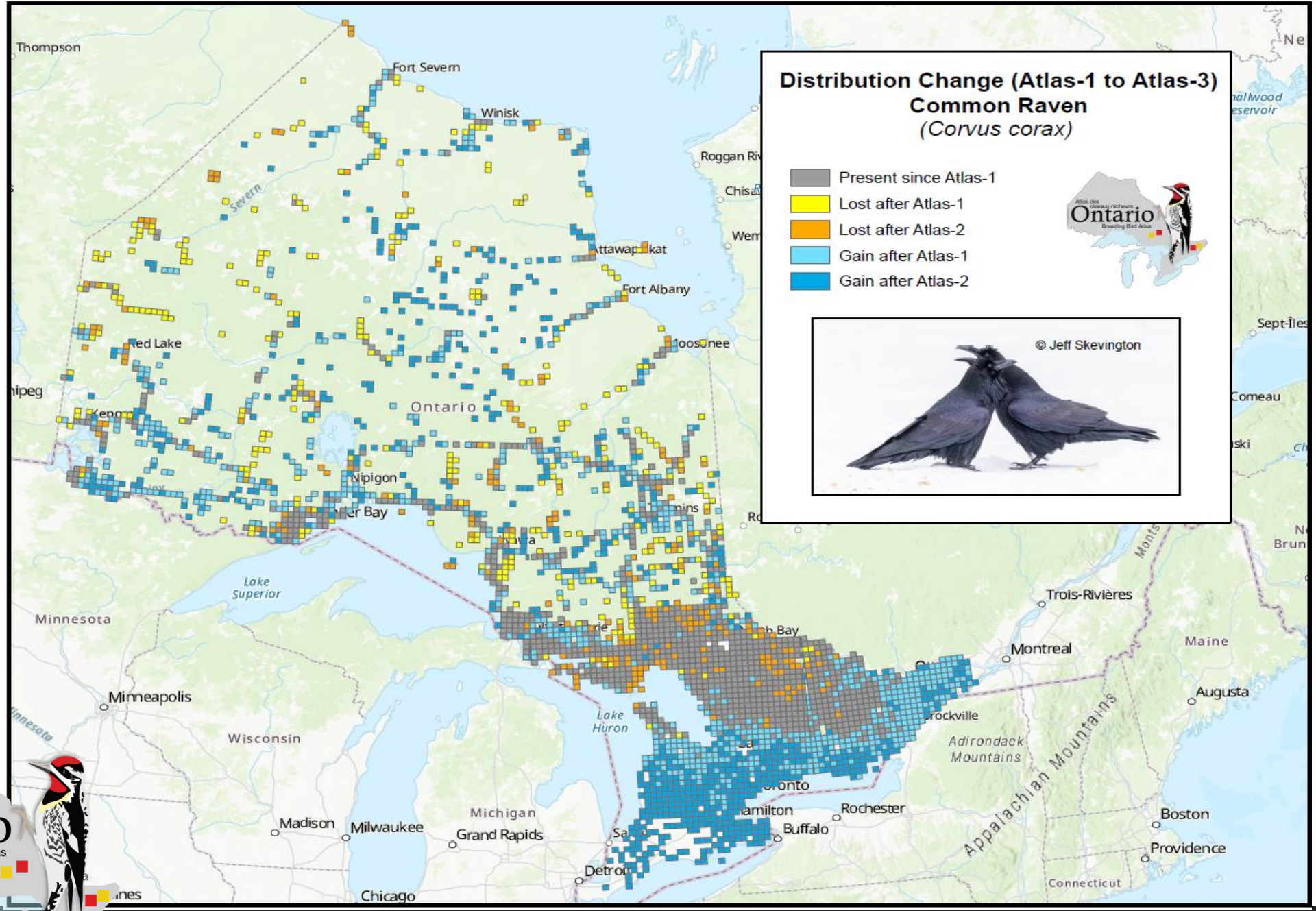


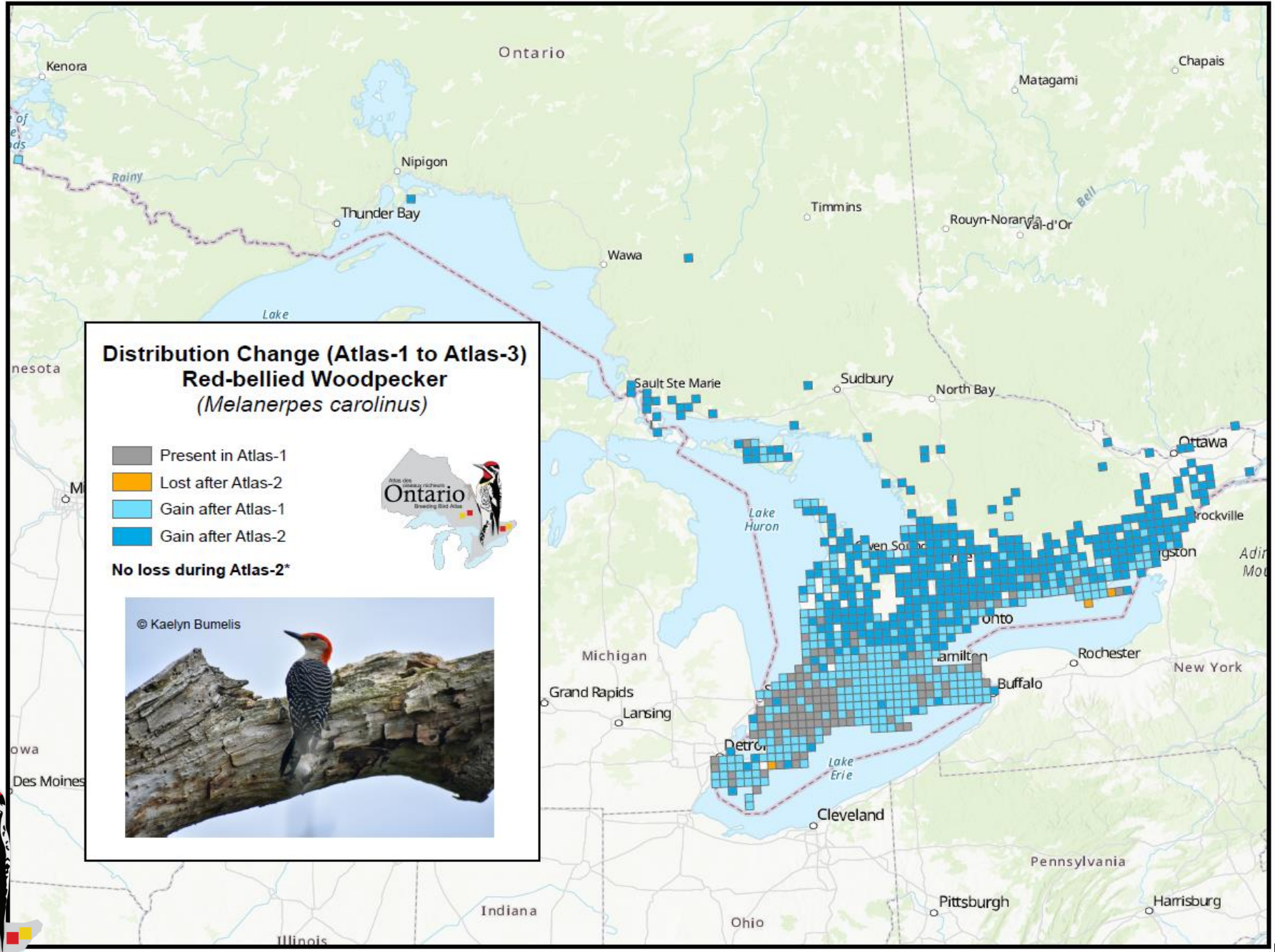
Atlas-1

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas



Blue-winged Teal by Paul Prior


Distribution Change (Atlas-1 to Atlas-3)
Common Raven
(Corvus corax)
Present since Atlas-1
Lost after Atlas-1
Lost after Atlas-2
Gain after Atlas-1
Gain after Atlas-2
Ontario
© Jeff Skevington
Thompson
Fort Severn
Winisk
Fort Albany
Ontario
Nipigon
Lake Superior
Lake Huron
Minnesota
Minneapolis
Wisconsin
Madison
Milwaukee
Michigan
Grand Rapids
Chicago
Detroit
Buffalo
Rochester
Montreal
Trois-Rivières
Maine
Augusta
Boston
Providence
Connecticut
Adirondack Mountains
Appalachian Mountains



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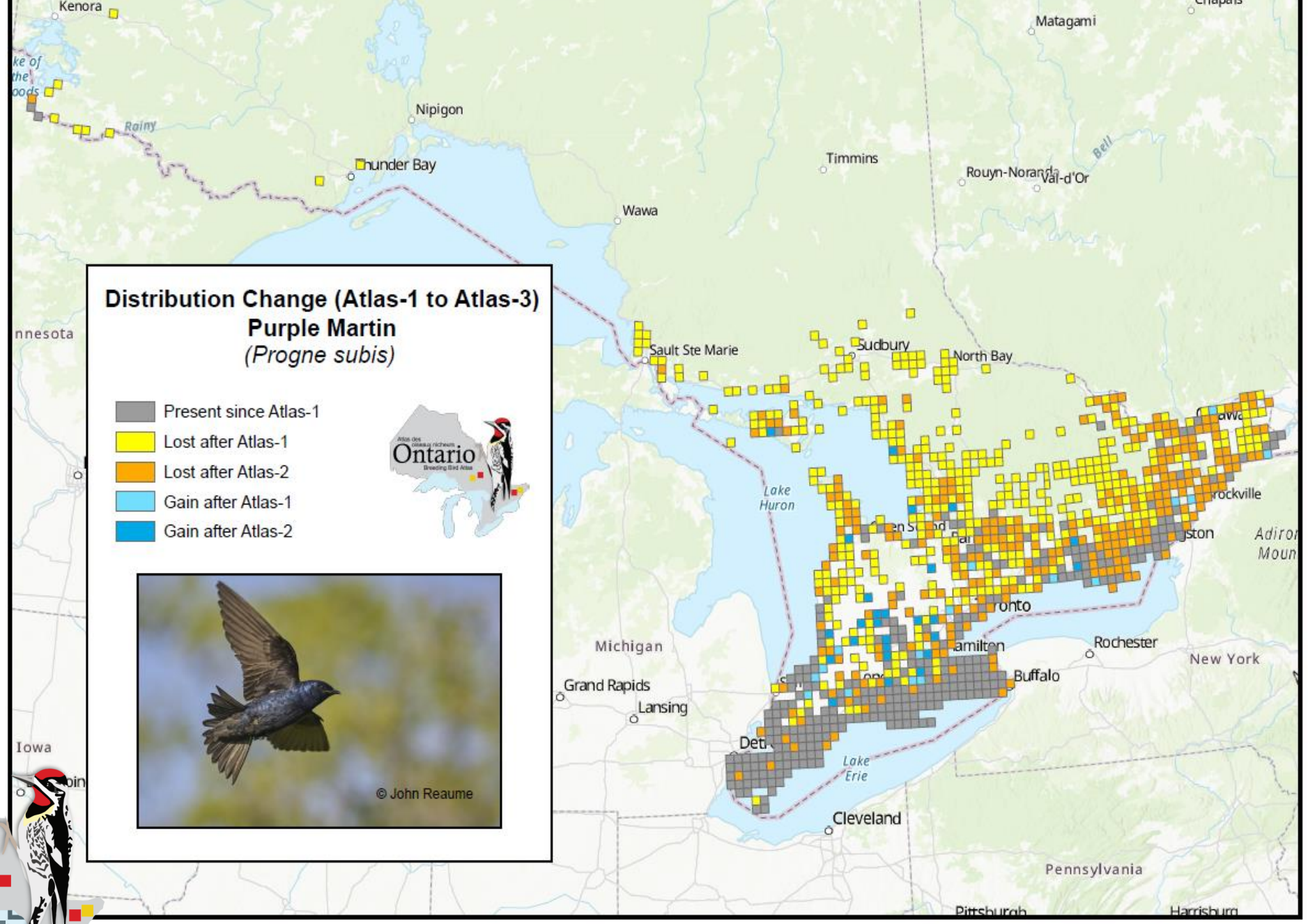
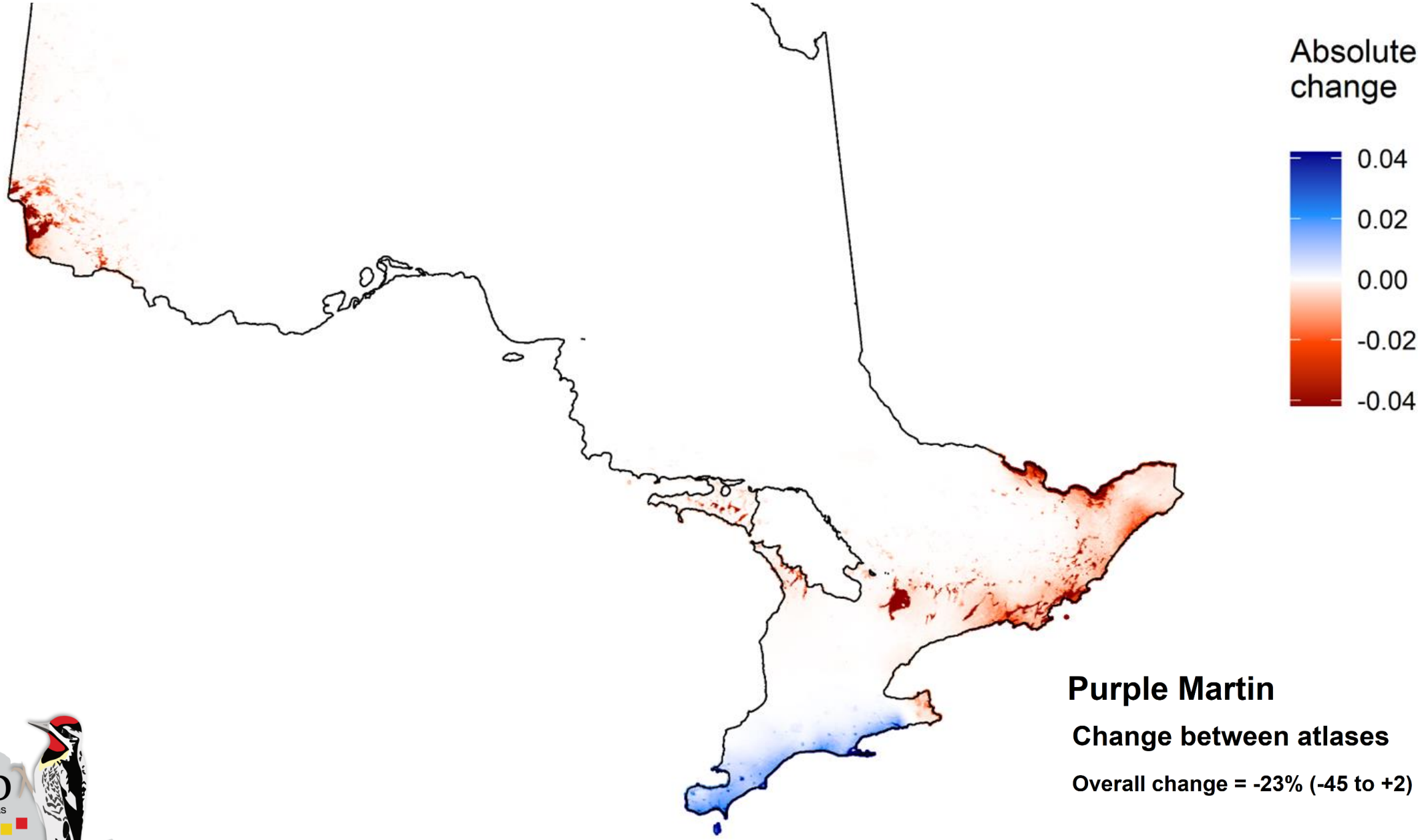

Distribution Change (Atlas-1 to Atlas-3)
Purple Martin
(Progne subis)
Present since Atlas-1
Lost after Atlas-1
Lost after Atlas-2
Gain after Atlas-1
Gain after Atlas-2
Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas
© John Reaume
Kenora
Nipigon
Rainy
Thunder Bay
Wawa
Timmins
Rouyn-Noranda
Val-d'Or
Matagami
Sault Ste Marie
Sudbury
North Bay
Lake Huron
Michigan
Grand Rapids
Lansing
Iowa
Lake Erie
Cleveland
Buffalo
Rochester
New York
Pennsylvania



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Purple Martin

Change between atlases

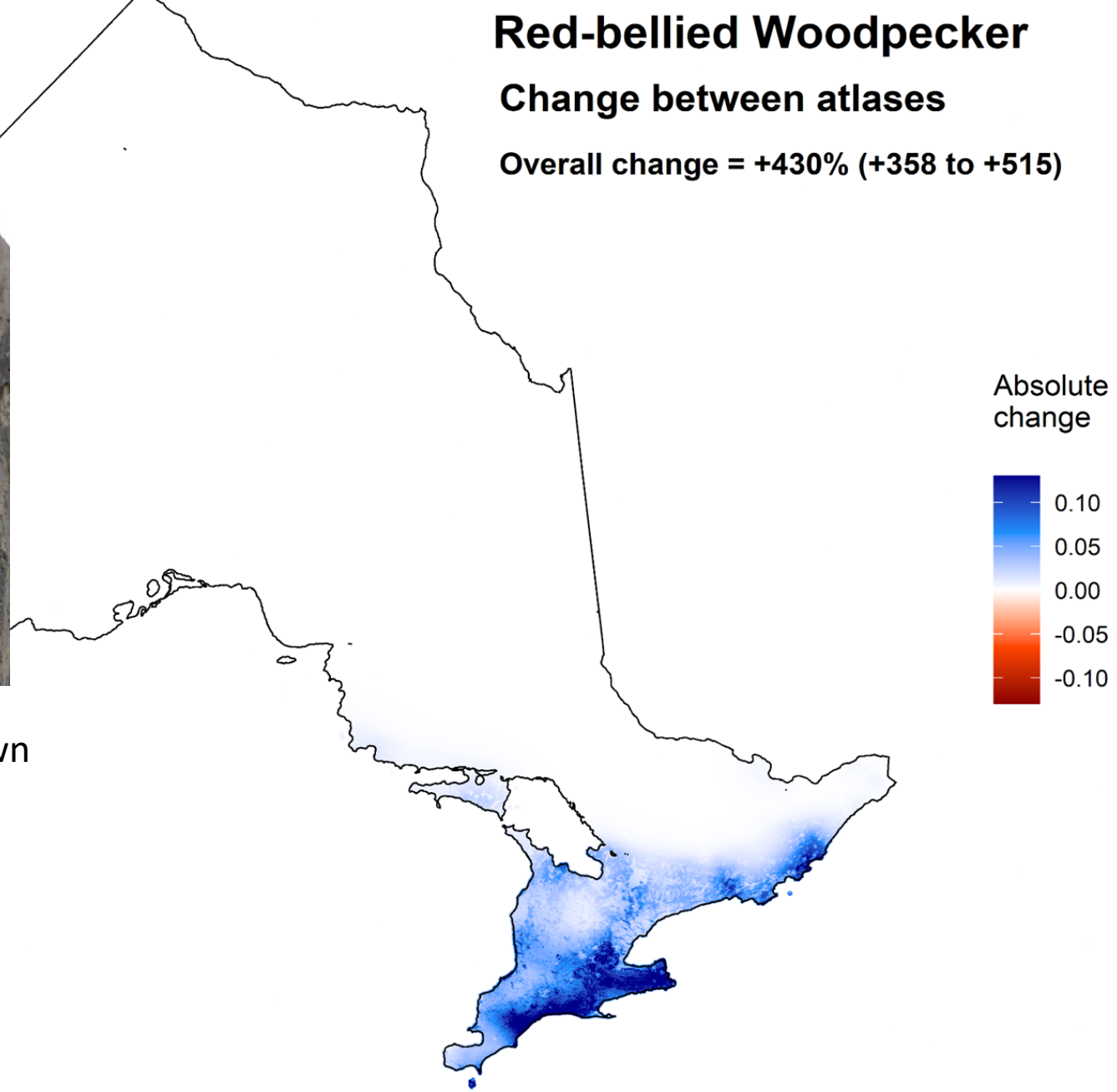
Overall change = -23% (-45 to +2)

Red-bellied Woodpecker

Change between atlases

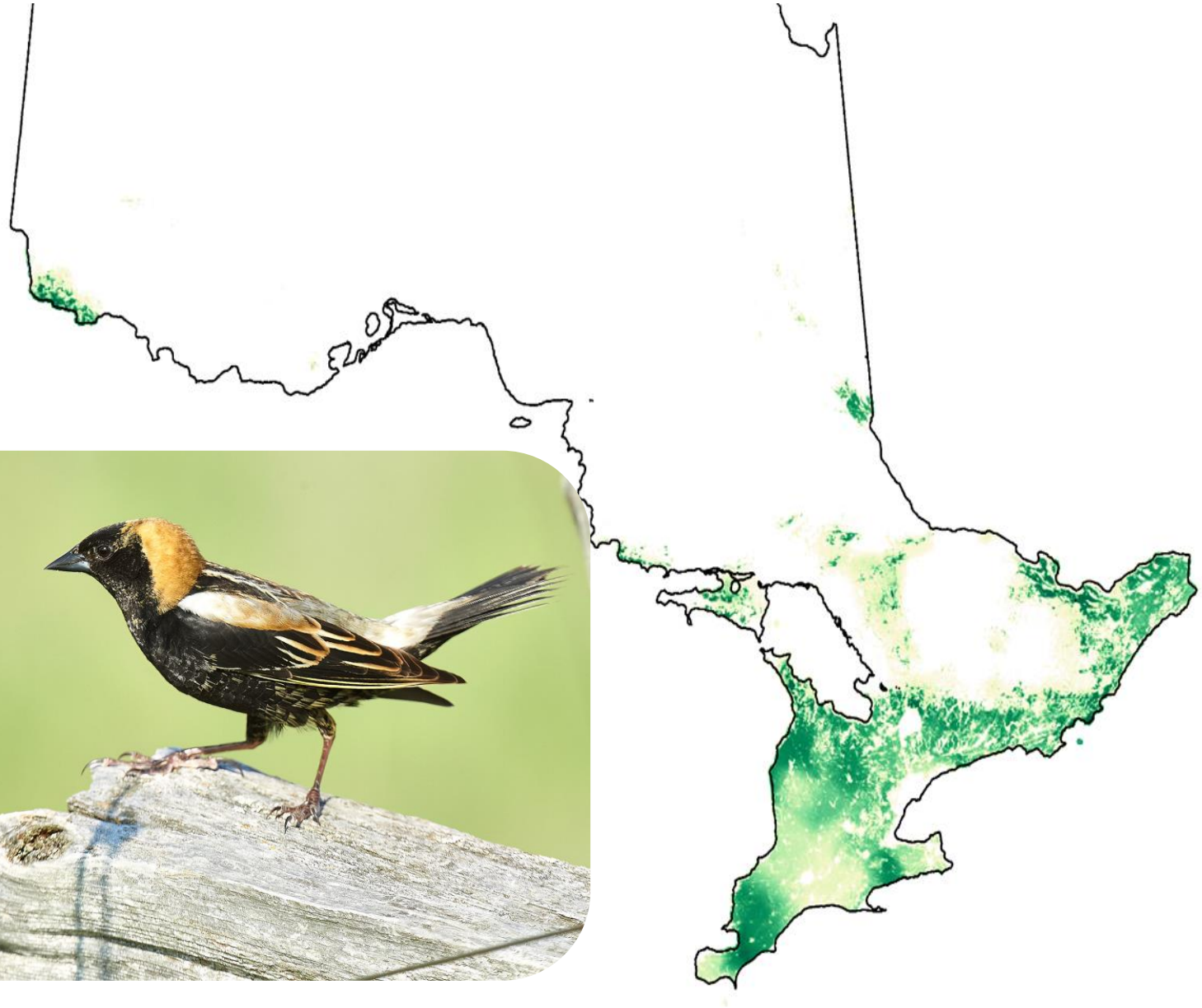
Overall change = +430% (+358 to +515)

Red-bellied Woodpecker by Dave Brown



Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Bobolink by Julie Weinstein



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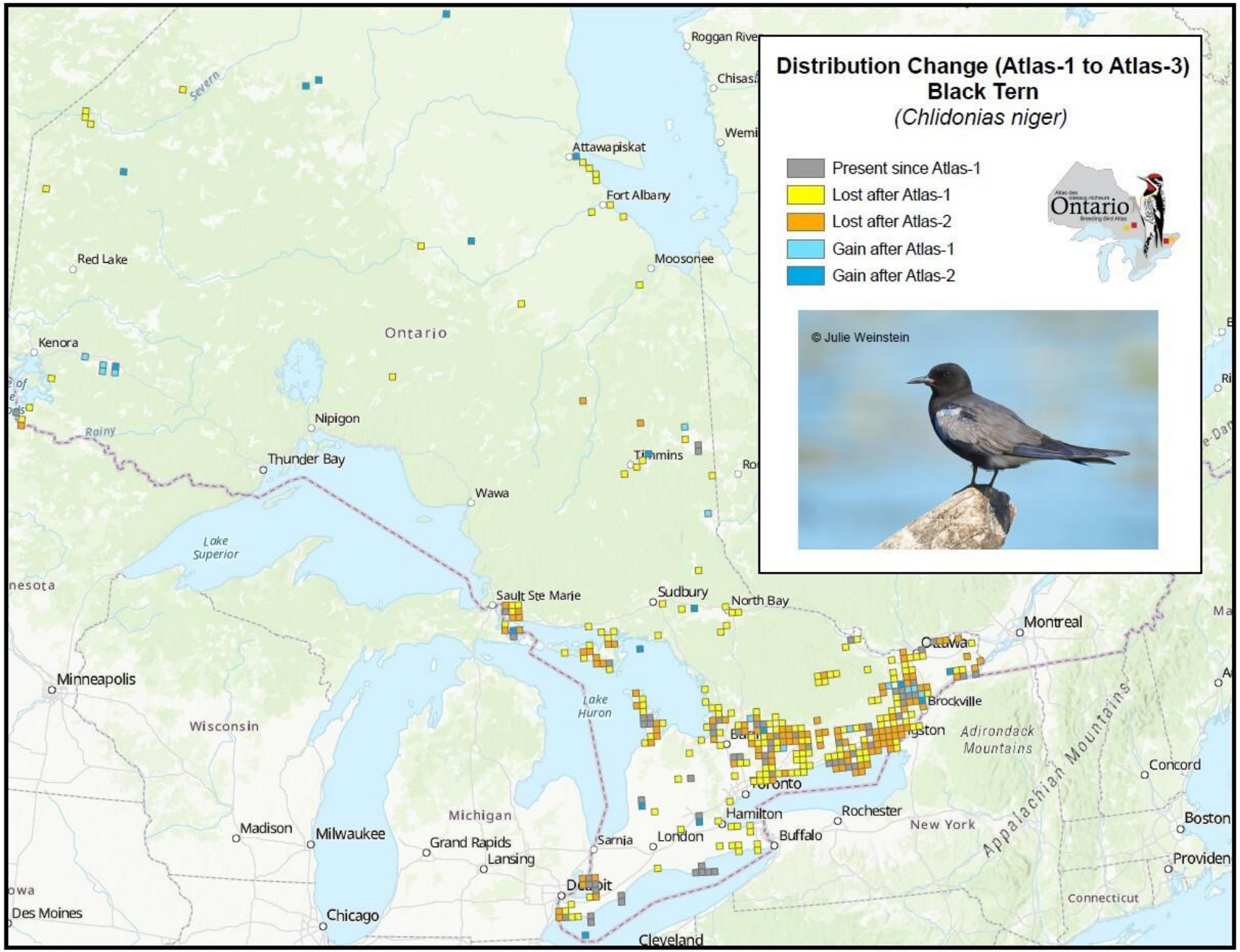
Early impacts

Case study: Black Tern re-assessment by COSSARO

- 80% fewer squares than Atlas-1
- 50% decline since Atlas-2



FUTURE FOCUS

- Last minute Atlassing
- Photo submissions
- Data entry
- Data review
- Develop analysis
- Publication planning

Green Heron by Michael Travers

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

How to help

Make a donation to the Atlas project

If you have bird records from the Atlas period, submit them to the project

Share your bird photos with the Atlas publication team

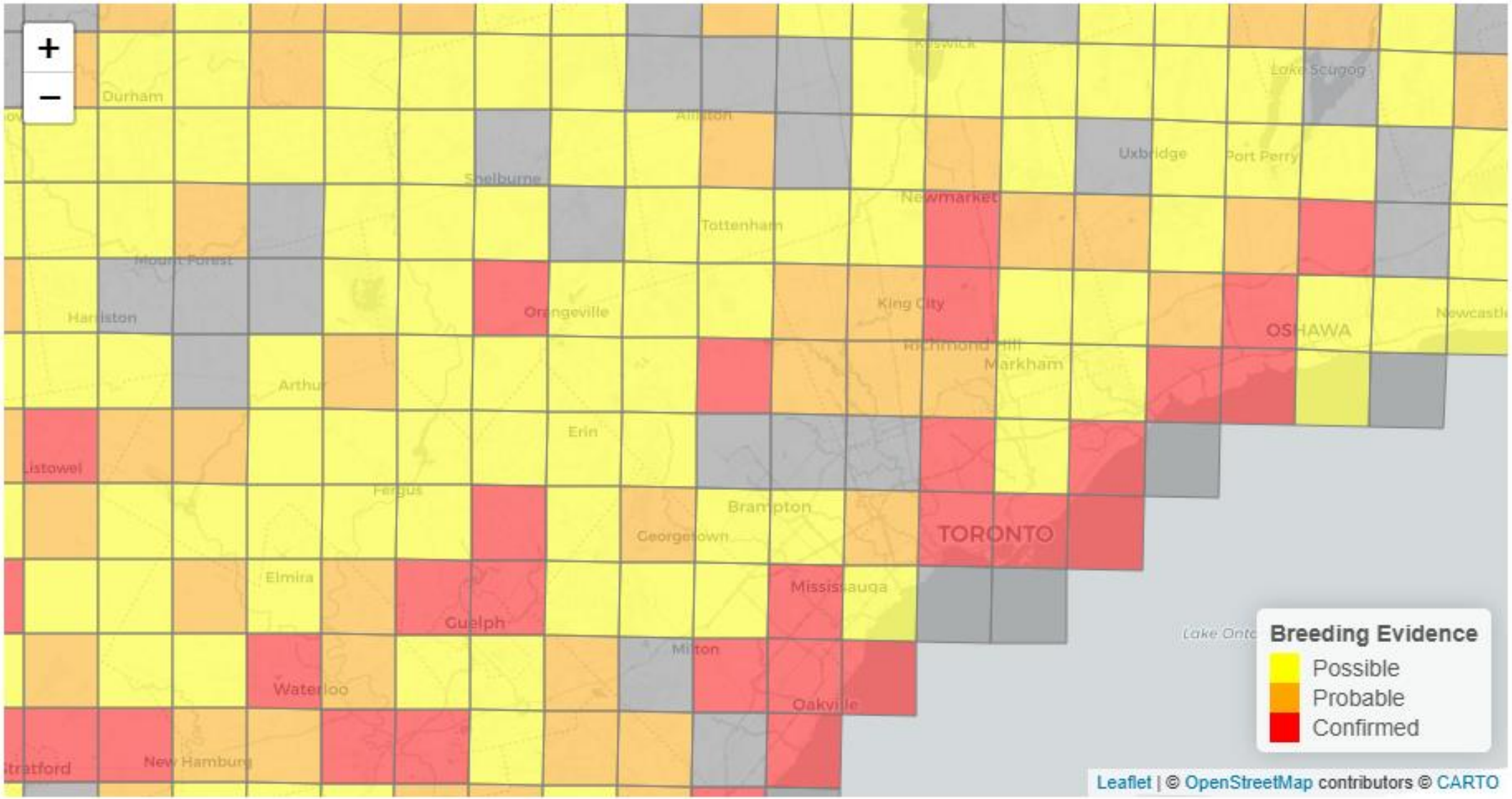
Register to receive updates

Look for owls from gap squares

Volunteer to help write a species account

Atlas-3 Eastern Screech-Owl Squares

Last Updated: 2025-10-01



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https://shorturl.at/dytNG

Questions?

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