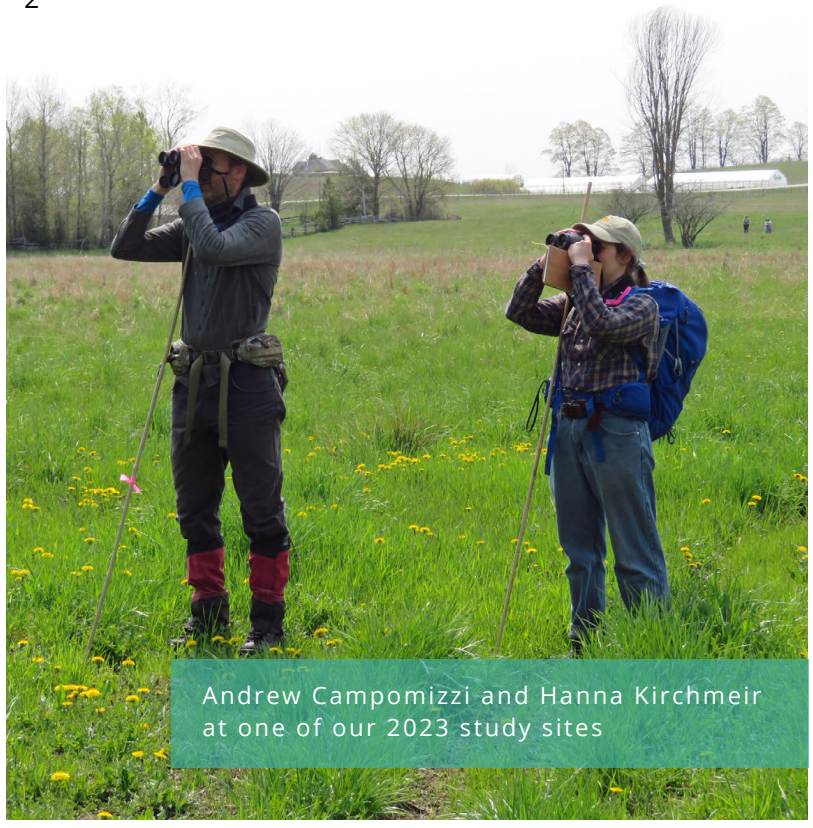
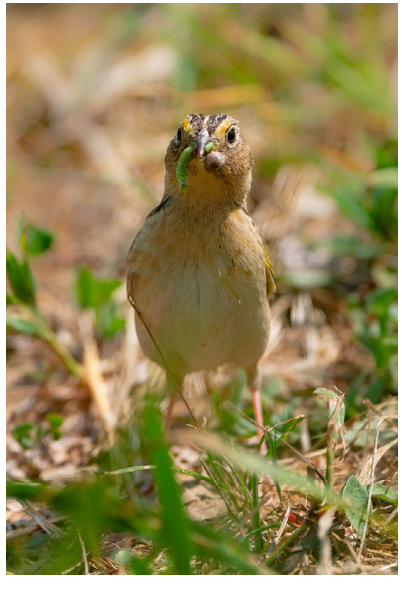
BIRD ECOLOGY AND CONSERVATION ONTARIO

2019 – 2023
A 5-year retrospective

Male bobolink by Xuan Zhang



Andrew Campomizzi and Hanna Kirchmeir at one of our 2023 study sites



On November 25, 2023, BECO turned 10 years old!

We started Bird Ecology and Conservation Ontario with the goal of contributing to the conservation of songbird species at risk in southern Ontario by conducting ecological research. In 2016, we turned our attention to grassland birds, and in 2019, we created a base for our field research in Grey County.

Over the last 5 years, our work has been focused on collaborating with the agricultural community to learn more about the distribution and abundance of grassland bird species at risk, assessing how agricultural activities impact nesting birds, and evaluating conservation actions that can increase nest success.

From 2019 to 2023, we surveyed 1,178 hectares of grassland and monitored nesting birds across 743 hectares. Based on farm management and our recommendations, farmers and landowners implemented conservation actions for grassland birds across 420 hectares of habitat, when possible targeting areas with a high abundance of nesting birds.

Photos: top and bottom right (grasshopper sparrow nest) by Z. Lebrun-Southcott
Bottom left: grasshopper sparrow by X. Zhang

2019 – 2023 highlights

May 2019
BECO begins working with the agricultural community in Grey County

Sep 2019
BECO's first research paper is published in Avian Conservation and Ecology

Jul 2020
BECO's barn swallow research paper receives the James Fletcher Award

Feb 2023
BECO's 7th research paper is published in The Canadian Field-Naturalist

Aug 2019
BECO organizes a grassland bird symposium at the Society of Canadian Ornithologists conference in Québec City

Mar 2020
BECO launches a grassland bird website (grasslandbirds.ca)

Apr 2022
BECO begins a grasshopper sparrow research project

Apr 2023
BECO receives 2 multi-year grants to continue grassland bird conservation and research

Illustrations (inspired by BECO's field research)
Top: eastern meadowlark and male bobolink by Emily S. Damstra
Bottom: bobolink nest by Kaila Ritchie, grasshopper sparrow by Isabelle Létourneau

FOCAL *species*

Between 1970 and 2016, grassland bird numbers across Canada decreased by 57%, a loss of ~300 million birds.

Threatened in Ontario and Canada

Threatened in Ontario and Canada

Special Concern in Ontario and Canada

We work on the conservation of birds that nest in grasslands because their populations have declined more than birds in any other biome in North America. Our 3 focal species nest on the ground, primarily in hayfields and pastures because few other grasslands exist in eastern North America. In Ontario, grasshopper sparrow, bobolink, and eastern meadowlark populations have declined by 79%, 80%, and 84%, respectively, since 1970.

Numerous reasons for population declines exist across migratory routes and on wintering grounds, but clear threats occur in Ontario, including habitat loss and the inadvertent destruction of nests from mowing of hayfields and grazing by livestock. By evaluating conservation actions, we can learn how conditions for successful nesting can fit into farm management. For example, we have seen how light grazing by cattle in spring can be compatible with bobolink nesting in pastures. Additionally, extending the number of days between grazing occasions can provide the time required for grasshopper sparrows to raise young.

Photos (left to right): K. Ritchie, X. Zhang, John Reaume
Page 5: top, bottom right: Z. Lebrun-Southcott. Middle left: Gerald Morris. Middle right: X. Zhang. Bottom left: Two Tone Studios

2019 – 2023

By the numbers

27 landowners hosted conservation research projects

743 hectares of hayfield, pasture, and grassland monitored for grassland bird breeding activity

Conservation actions implemented across **420** hectares of grassland bird habitat

43 farms surveyed for grassland birds

1,178 hectares of grassland surveyed

Hanna Kirchmeir and Ryley Marchant (2023)

14 biologists gained training and hands-on experience in wildlife conservation research

Zoé Lebrun-Southcott presenting at the Ontario Soil and Crop Improvement Association AGM (2020)

7 peer-reviewed papers published

10 presentations at conferences and meetings of conservation and agricultural organizations

339 grassland bird nests monitored

Ryan Hill, field biologist in 2020, measuring vegetation at the Grey Dufferin Community Pasture

A male bobolink being observed by Andrew Campomizzi at the Grey Dufferin Community Pasture

CONSERVATION *science*

We conduct ecological research to address critical questions about Ontario's at-risk songbirds. By providing this information to the conservation community, our goal is to improve the outcome of conservation actions and contribute to the recovery of these species.

Since 2019, we have published 7 research papers in peer-reviewed journals. Our most recent publication was about the distribution of grassland bird species at risk and the impact of grazing on nesting across ~230 hectares of habitat at the Grey Dufferin Community Pasture. Field work in 2019 and 2020 led to a conservation experiment at the community pasture in 2021 that increased opportunities for successful nesting in 2 fields with high bobolink abundance.

We ventured beyond our grassland bird research to work on a big data and machine learning analysis that was published in the journal Ibis in 2022. We used existing global bird datasets with information about

Photos: Z. Lebrun-Southcott

10,163 species to identify factors associated with population declines and to try to predict population trends for 801 species with unknown population status, providing new insight into possible conservation priorities among species we know little about.

Over the past 5 years, we attended numerous conferences and events to present, learn, and connect with others. For example, in 2019, we organized a full-day symposium for researchers and conservation practitioners from across Canada to discuss grassland bird conservation at the conference of the Society of Canadian Ornithologists. Among many other presentations, Monica Fromberger, a graduate student who worked with BECO for 2 years, presented on factors affecting bobolink nest survival.

Field work is the foundation of our research.
Observing nesting birds and listening to landowners is how we come to understand the situation on the ground and how conservation can progress. Over the course of each bird nesting season, we log hundreds of hours in the field, searching for and monitoring nests, observing territories for breeding behaviours, collecting vegetation data, discussing conservation actions with landowners, and assessing the impact of these actions on nesting birds.

Photos: K. Ritchie

A bobolink pair near their nest. The female holds food for her nestlings.

Jill Wettlaufer, field biologist in 2019, observing bobolink breeding activity

Elfriede and Anthony Featherstone participated in our research in 2023, adjusting their hay harvest and cattle grazing to protect numerous bobolink nests in their pastures and hayfields.

Photo: X. Zhang

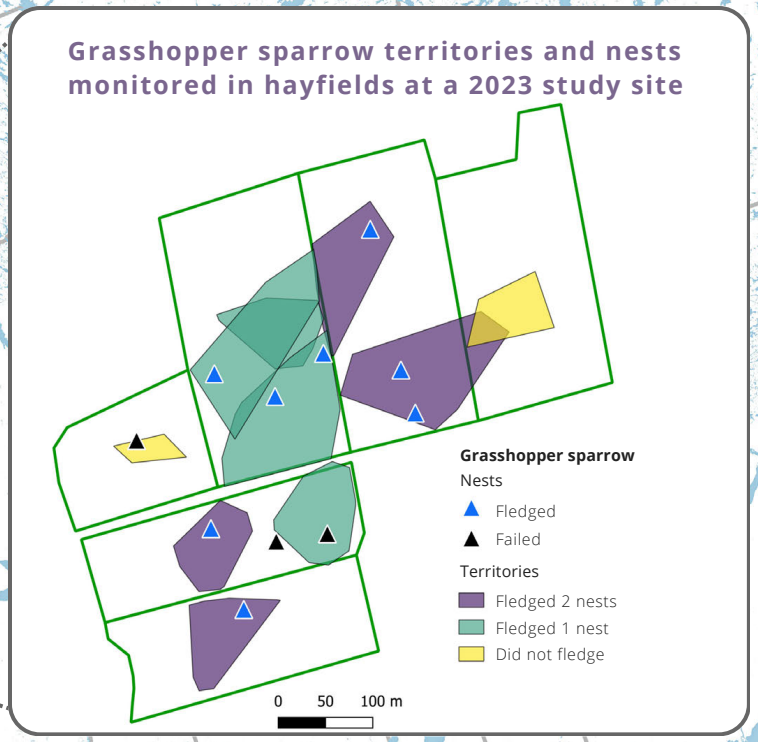
Calvin Cooper, a farmer we collaborated with in 2021 and 2022, lets the herd into a new section of pasture. Modified grazing on this farm increased opportunities for grassland birds to nest successfully.

Photo: Z. Lebrun-Southcott

COLLABORATING *with* FARMERS

Grassland birds depend on the nesting habitat created and managed by farmers, and hayfields and pastures are disappearing from the Ontario landscape at an alarming rate. Over the last 5 years, we surveyed 43 farms and conducted research on 27 of these properties. In addition to collecting data for our research projects, we provided site-specific stewardship advice to each participating landowner, resulting in long-term conservation benefits for grassland birds.

Collaborating with agricultural organizations, such as the Ontario Soil and Crop Improvement Association, has enabled us to disseminate resources we've developed to the broader agricultural community (e.g., bobolink conservation case studies) and present information about our work to various agricultural audiences to inform and inspire others to take action to protect grassland birds. As we continue our grassland bird research in 2024, we will continue to invest in relationships with the agricultural community to ensure on-the-ground impact of our work.



Where we've worked...

BECO's field research and survey locations 2019 – 2023

2023
2022
2021
2020
2019

N

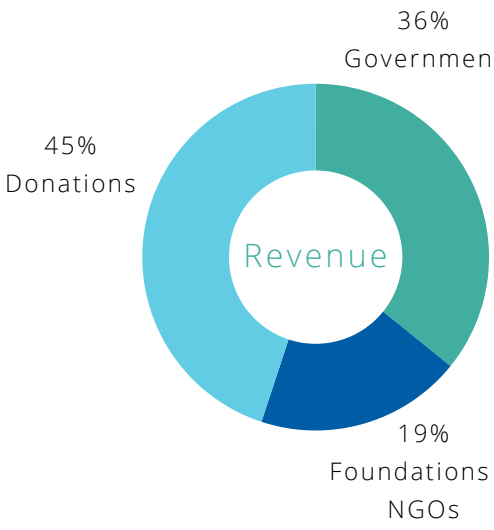
0 25 50 km

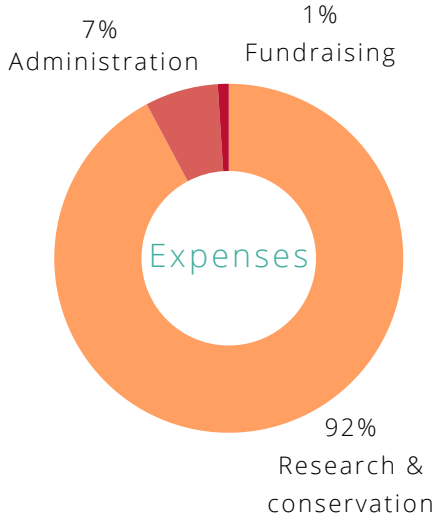
Thank you to all of the landowners who provide habitat for grassland birds and welcomed our research on their land!

FINANCIAL highlights

BECO's fiscal year ends December 31. Our audited financial statements are posted each spring at www.beco-birds.org/about/

2022





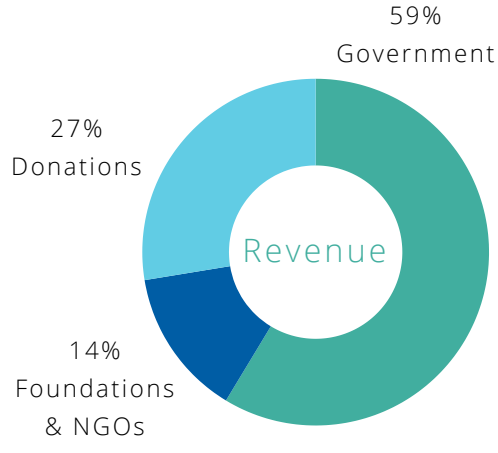
REVENUE

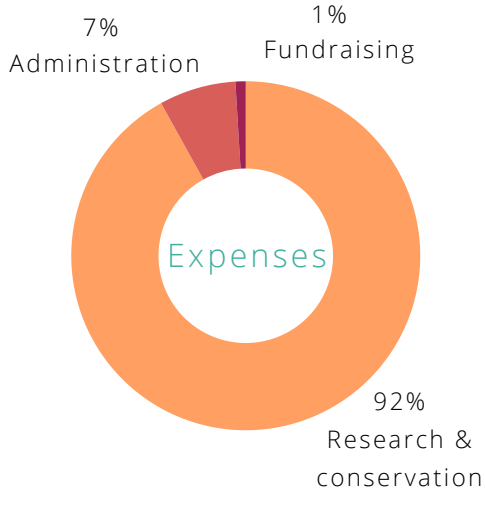
Government (73% federal, 27% provincial)	65,877
Foundations & NGOs	35,400
Donations	82,652
	183,929

EXPENSES

Research & conservation projects	167,518
Administration	12,320
Fundraising	1,830
	181,668

2021





REVENUE

Government (7% federal, 93% provincial)	117,510
Foundations & NGOs	27,565
Donations	55,265
	200,340

EXPENSES

Research & conservation projects	185,121
Administration	14,332
Fundraising	1,910
	201,363

FINANCIAL
highlights cont.

	2020	2019	2018
REVENUE			
Government	37,096	14,928	80,759
Foundations & NGOs	49,783	24,079	30,580
Donations	106,826	70,493	75,405
	193,705	109,500	186,744
EXPENSES			
Research & conservation projects	159,380	104,420	178,431
Administration	11,490	9,483	9,729
Fundraising	1,767	1,023	2,472
	172,637	114,926	190,632

Thank you

to all of our individual donors, partners, and supporters for making the past 5 years possible!

Over the last 5 years, BECO has received financial and in-kind support from the following organizations:

FOUNDATIONS

Echo Foundation
Helen McCrea Peacock Foundation
Hodgson Family Foundation
Jackman Foundation
K.M. Hunter Charitable Foundation
The McLean Foundation
S.M. Blair Family Foundation

NGO FUNDERS & COLLABORATORS

Beef Farmers of Ontario
Colleges and Institutes Canada
ECO Canada
Grey Dufferin Community Pasture
Ontario Sheep Farmers
Ontario Soil and Crop Improvement Association
West Virginia University

GOVERNMENT

Government of Canada
- Canada Summer Jobs
- Environment and Climate Change Canada
  - Habitat Stewardship Program for Species at Risk
  - Species at Risk Partnerships on Agricultural Lands initiative

Government of Ontario
- Ontario Trillium Foundation
- Species at Risk Stewardship Program

IN-KIND PROJECT & OPERATIONAL SUPPORT

Host Papa
Korax
Vortex Canada

Bobolink illustration by Ryan Hill

BECO
Bird Ecology &
Conservation Ontario

1840 Bathurst St., Suite 206
Toronto, ON M5P 3K7
416.652.8272, info@beco-birds.org
www.beco-birds.org

Charitable Registration No. 83785 7572 RR0001

Bobolink flock in mid-July in a delayed-cut hayfield
Photo: Z. Lebrun-Southcott

BECO's 2013 – 2018 retrospective report is available at www.beco-birds.org/about/