

Bird Banding in Prince Edward Island: Conservation and Research Efforts

By Fiep de Bie



Wheatley River Improvement Group AGM, May 21, 2025

Overview

What is Bird Banding?

Why is it important?

Former Bird Banding projects in PEI

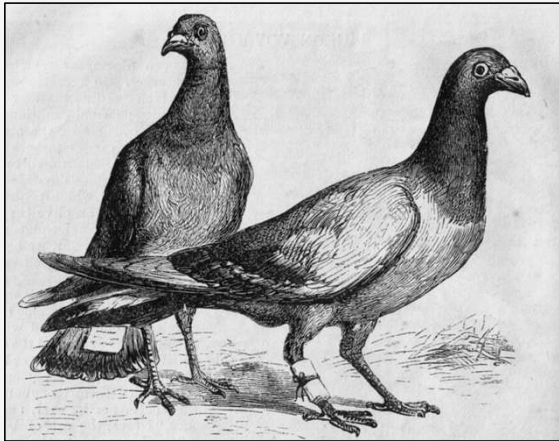
Bird Banding in PEI now

Cross-watershed Tree swallow project

Plans for the Future



How did it all start?



Wikimedia.org



Medieval falconry. Falconers with horse from, 'De arte venandi cum avibus', 1240-1250
– Holy Roman Emperor Frederick II wrote a treatise on, 'The Art of Hunting with Birds'

Origins of Bird Banding

- 218-201 BC during Punic wars in Rome
- Middle Ages - falconers using leg jesses
- Early 1800s John James Audubon - Eastern phoebes in nest
- 1902-1903 scientist Paul Bartsch - banding Black-crowned night herons

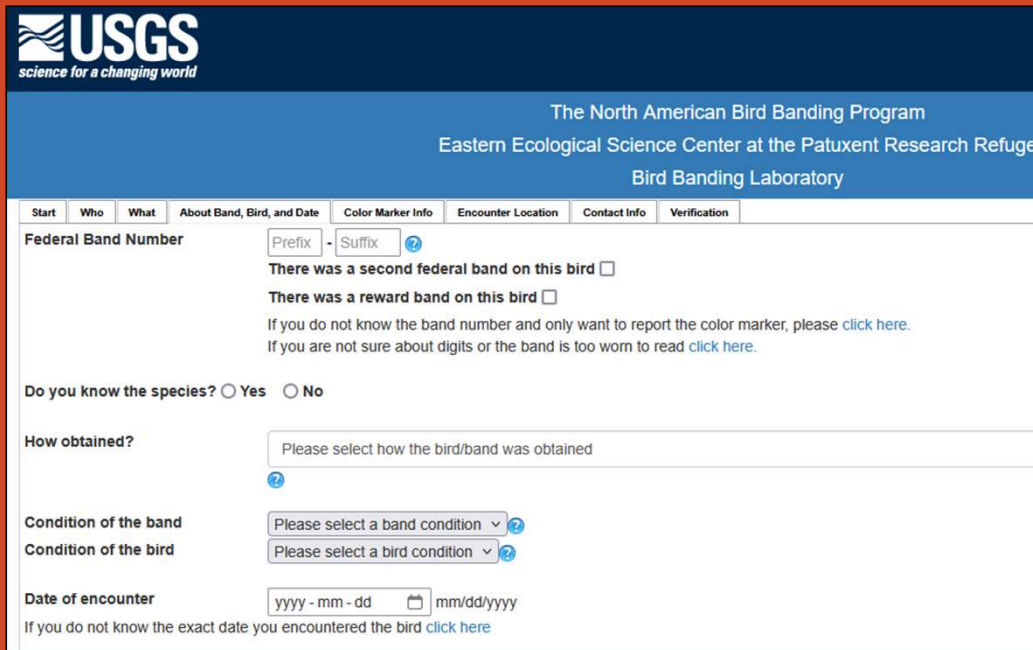


Pewee Flycatchers by
John James Audubon



CornellLab

Bird banding administration



The screenshot shows the USGS Bird Banding Laboratory web form. The header includes the USGS logo and the text "The North American Bird Banding Program" and "Eastern Ecological Science Center at the Patuxent Research Refuge". The form has tabs for "Start", "Who", "What", "About Band, Bird, and Date", "Color Marker Info", "Encounter Location", "Contact Info", and "Verification". The "Start" tab is active, showing fields for "Federal Band Number" (Prefix and Suffix), checkboxes for "There was a second federal band on this bird" and "There was a reward band on this bird", a link for reporting color markers, and a "Do you know the species?" question. Below these are "How obtained?", "Condition of the band", "Condition of the bird", and "Date of encounter" fields, each with a dropdown menu or date picker. A link for reporting color markers is also present.

USGS
science for a changing world

The North American Bird Banding Program
Eastern Ecological Science Center at the Patuxent Research Refuge
Bird Banding Laboratory

Start Who What About Band, Bird, and Date Color Marker Info Encounter Location Contact Info Verification

Federal Band Number Prefix Suffix ?

There was a second federal band on this bird ☐

There was a reward band on this bird ☐

If you do not know the band number and only want to report the color marker, please [click here](#).
If you are not sure about digits or the band is too worn to read [click here](#).

Do you know the species? ☐ Yes ☐ No

How obtained? Please select how the bird/band was obtained ?

Condition of the band Please select a band condition ?

Condition of the bird Please select a bird condition ?

Date of encounter yyyy - mm - dd mm/dd/yyyy
If you do not know the exact date you encountered the bird [click here](#)

Environment and Climate Change Canada (ECCC)

Bird Banding Office (BBO) in Ottawa

Issue permits

Supply bands

Keep records of all Canadian banding efforts

Memo to banders bulletin

Important Goals of Bird Banding



mynatureandphotographyblog.com/bird-ringing

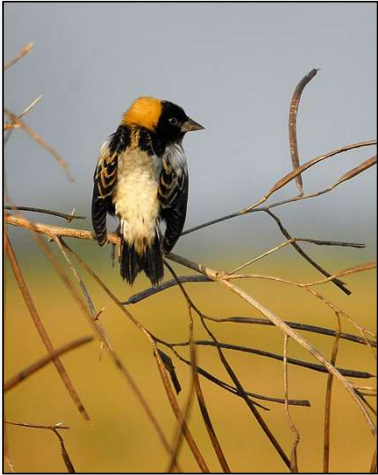
Critical data

- Track bird populations *over time*

Informing policy decision makers

- Conservation efforts on overwinter & breeding grounds
- Leading to effective environmental regulations

What can bird banding tell us?



Andrea Westmoreland



© Parks Canada



William H. Majoros

Band recoveries (mortality) & Recaptures

Crucial data on migratory patterns, timing and bird movement.

Population Trends Analysis

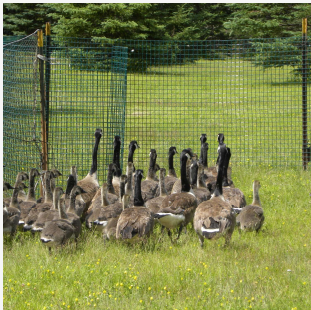
- Analysis of banding data show: trends in bird populations
- e.g. Spring & Fall Migratory & MAPS stations
- helping identify species-at-risk in need of conservation

Banding methods and equipment



Mist Nets

Mist nets are fine nets used to safely capture birds



Pen & Nets

Corralling birds into a pen or using a whoosh, rocket net, remote control drop net



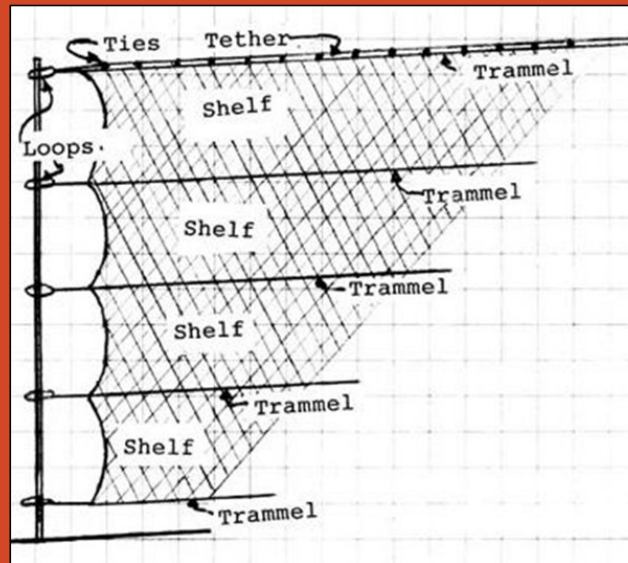
Nestbox

Hand capture birds in a nestbox

Mist netting



https://en.wikipedia.org/wiki/Mist_net



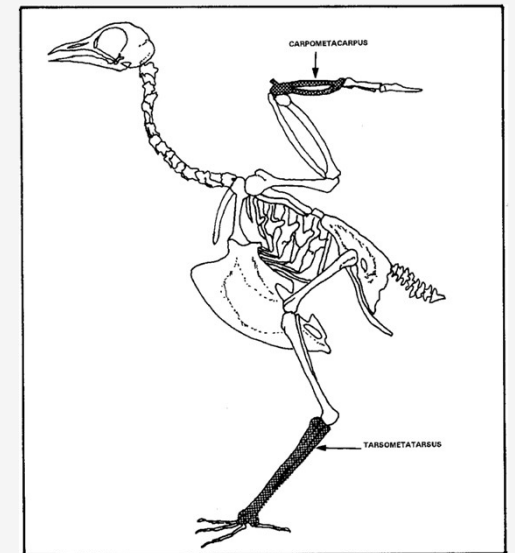
What is measured?



Species ID
Weight (in bag first)
Sex by plumage/cloacal protuberance/brood patch
Age – feather tracts & molt (Pile)
Fat storage (clavicle)

Measure:
Wing
Tail
Tarsus
Culmen/beak

Overall health



Peter Pyle "the Bird Banding Bible"

How to age/sex birds

- North American system:

HY = hatch year

SY = second year

AHY = after hatch year

ASY, ATY, A4Y, A5Y

- WRP (Wolfe, Ryder & Pyle):

a 3-letter code system

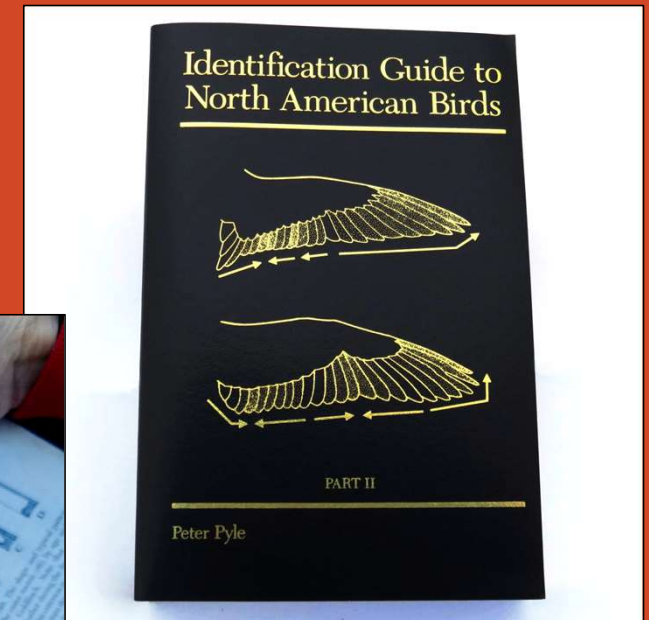
(molt cycles and plumage)

e.g. **FCF**: First Cycle Formative (HY/SY)

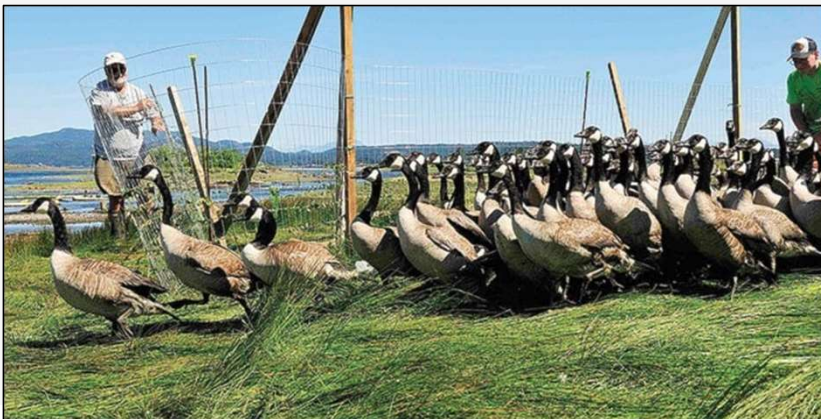
DCB: Definitive Cycle Basic (AHY/ASY)



The Institute for Bird Populations



Goose and Duck banding



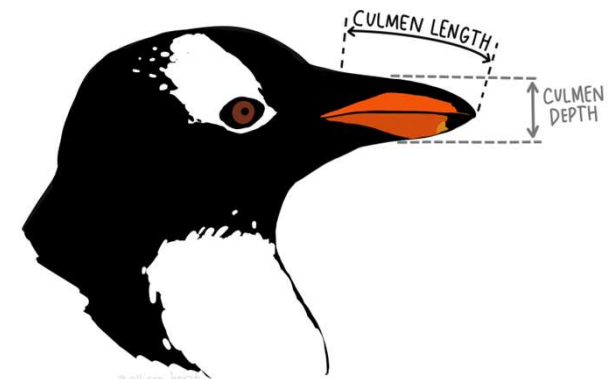
Goose banding



Data gathered:
Sex, Age, Head length,
Bill/culmen length, Tarsus length



CULMEN: RIDGE ALONG THE
TOP PART OF A BIRD'S BILL



By Allison Horst

Bands

Types of bands

Band orders

Sizes (male/female)

Pyle (bird banding bible)

Plier sizes



Rivet Band



Butt-end bands



Lock-on Band

Who can band birds?

Gain experience

Application BBO

Permit – 2 years; Sub-permittees

Application for specific research projects

Band orders – with a permit

Yearly data submission



Previous bird banding projects:
2008-2017
1000 chicks!

Holland College Wildlife Conservation Technology

Kestrel banding

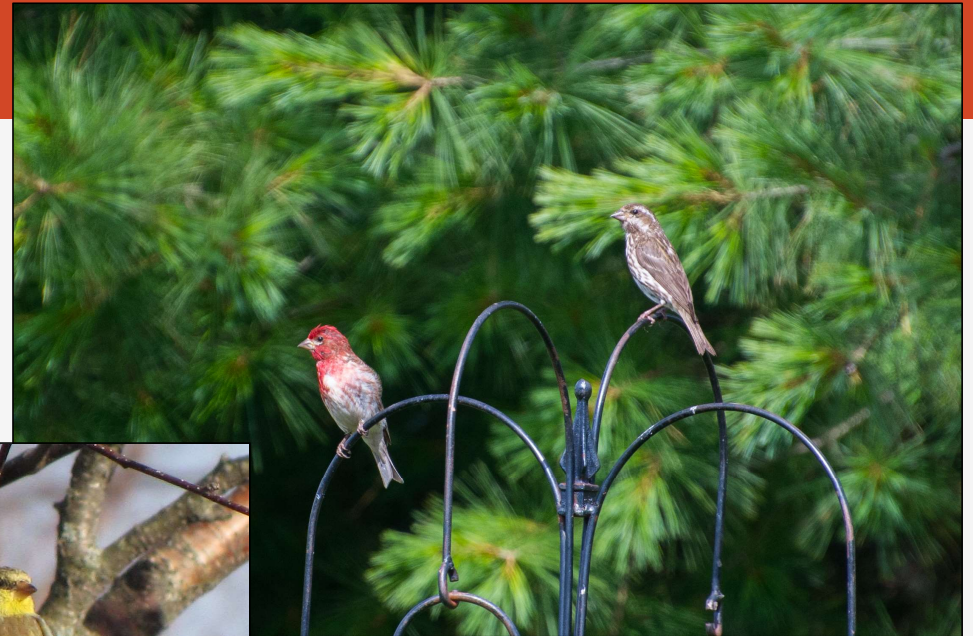


Disease surveillance & research 2008-2010 (Trichomonosis) in finches

Canadian Wildlife Health Cooperative

Microscopic parasite *Trichomonas gallinae*

MSc student Witney Kelly Clark



Former bird banding projects in PEI: 2015-2020

Monitoring Avian Productivity and Survivorship (MAPS)



Photo credit: Jeanne Maki



MAPS program:



How is MAPS Data Being Used?

- Survival between males and females
- Monitor the survival of aerial insectivores
- Plan Motus tower deployments (GPS)
- Study the change of landscape
- Climate change
- Molt and plumage studies



Hummingbird banding – Island Nature Trust 2015-2017

Island Nature Trust & Ontario bander Cindy Cartwright



mpgranch.com

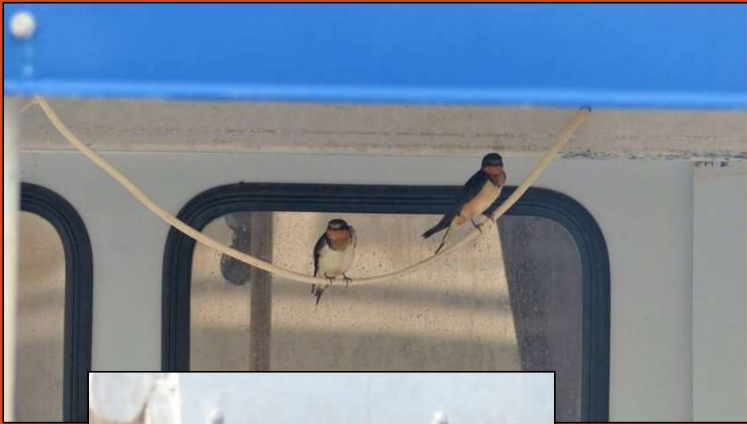


Island Nature Trust

AVC Bird Rehabilitation 2015 - 2022



Banding Species at Risk



Island Nature Trust



AVC Wildlife Service



Current bird banding projects

Canadian Wildlife Service: Waterfowl banding - Winter duck banding and spring & summer goose banding

Eaglet banding – Gerald MacDougall & Mi'kmaq Confederacy PEI

Cross-Watershed Tree Swallow Box Program 2023 -



Bald eagle banding



Mi'kmaq Confederacy of PEI



Cross Watershed Tree Swallow Box Program



Groups participating

Wheatley River Improvement Group (WRIG)

Trout River Environmental Committee (TREC)

Kensington-North Watersheds Association (KNWSA)

Hunter-Clyde Watershed Group (HCWG)

Southshore Watershed Association (SSWA)

Belfast Area Watershed Group (BAWG)

Bedeque Bay Environmental Management Association (BBEMA)

Tignish & Area Watershed Management Group (TWMG)



Multi-watershed effort



Hunter-Clyde Watershed Group



Trout River



Kensington-North Watersheds Association

What data do we collect?

- Time of return
- Nest building
- First eggs
- Monitoring egg laying
- Hatching (~14 days)

Banding chicks at 11-12 days old:

- Weight
- Health (parasites)
- Adults:
- Sex
- Age
- Weight
- Health



Data field sheets

PEI Fish and Wildlife - Nest Monitoring Data Sheet

Use this form to describe your nest site and to record data from each visit. Use a separate form for each nest monitored and each new nesting attempt. See back for explanations of codes and fields.

Year: _____ Species: _____

1. NEST BOX LOCATION

Nest Box ID: _____ Watershed: _____

Nest Box Location: _____

-Coordinates: Lat. _____

Long. _____

Nearest Civic Address (if applicable):

2. DESCRIPTION (see key on back)

Cavity orientation (circle one) N, S, E, W, NE, SE, NW, SW

Cavity opening width _____ ☐ in. or ☐ cm

Predator guard ☐ None or ☐ Type: _____

Habitat within 1 arm length _____

Human modified description _____

Habitat within 1 football field length _____

Human modified description _____

Height above ground _____ ☐ ft. or ☐ m

3. BREEDING DATA If eggs or young are present but not countable, enter "u" for unknown.

	DATE	HOST SPECIES			STATUS & ACTIVITY CODES				NEST PARASITE ACTIVITY			MORE INFO	
	Month / Day (1-12)/(1-31)	Eggs	Live Young	Dead Young	Nest Status	Adult Status	Young Status	Mgmt. Activity	Eggs	Live Young	Dead Young	Obs. Initials	Notes* (or mark X for notes below)
Ex.	05/06	1	0	0	cn	aa	no	no	0	0	0	BB	X
1	/												
2	/												
3	/												



Photo: Hilde Johansen

NatureCounts

Project NestWatch

Project NestWatch



NatureCounts

Interactive Data portal by Birds Canada



Mystic River watershed



Data collection so far:



	Band Number	Species	Disposition	Banding Year	Banding Month	Banding Day	Age	How Aged	Sex	How Sexed	Bird Status	Location	Remarks
35	263171844	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #2 Rackams Pond
36	263171845	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #2 Rackams Pond
37	263171846	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #2 Rackams Pond
38	263171847	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #2 Rackams Pond
39	263171848	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #2 Rackams Pond
40	263171849	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station
41	263171850	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station
42	263171851	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station
43	263171852	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station
44	263171853	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station
45	263171854	TRES	1	2024	06	18	L	CC	U	NA	300	WRIG	Box #9 Gas Station

2023 (Pilot)

Total - 70 birds (5 adults)

2024:

Total - 199 birds (41 adults)

Recaptures: 2 adults used the same nestbox and 1 adult was in a box nearby!

Challenges

Funding support

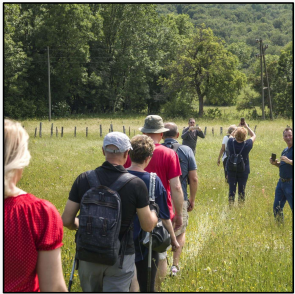
Land protection and access

Public awareness & participation

Keeping our elected officials informed



Looking ahead:



Community Engagement & Citizen science

Increasing community involvement can lead to greater awareness and action



Collaboration Among Organizations

Collaboration among various organizations is crucial for pooling resources and expertise to enhance bird conservation strategies



Innovative Research

Innovative research: protect bird populations (Motus network)



Future PEI Banding Goals

Continue gathering data for the Tree swallow project

Continue collaboration with watershed groups

GPS tagging – Monitor migration status

Explore Northern Saw-whet owl banding



Questions?



Photo: Sandra Meade

