

Case Study:

BARN SWALLOW



PHOTO: MARK PECK

BARN SWALLOW

Barn Swallows are a widespread and familiar species in the Swallow family. They are aerial insectivores, and have fast, agile flight to feed on flying insects.

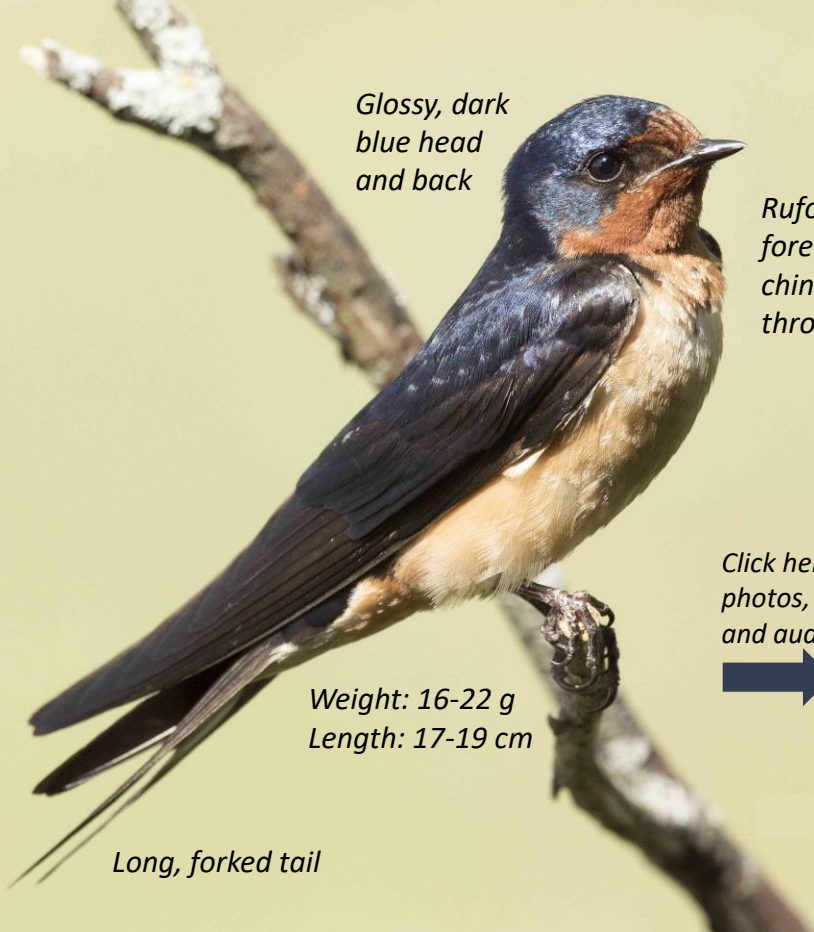
LATIN:
Hirundo rustica

FRENCH:
Hirondelle rustique

SPANISH:
Golondrina Común

CLASSIFICATION:

Kingdom: Animalia
Phylum: Chordata
Class: Aves
Order: Passeriformes
(Perching birds)
Family: Hirundinidae
(Swallows)
Genus: *Hirundo*
Species: *rustica*



Glossy, dark blue head and back

Rufous forehead, chin and throat

Weight: 16-22 g
Length: 17-19 cm

Long, forked tail

Click here to view photos, videos and audio



PHOTO: MARK PECK

CONSERVATION

Globally, Barn Swallows are listed as a species of Least Concern. However, breeding populations in Canada have continuously declined for nearly 40 years, and Barn Swallows are listed as a Threatened species by the Committee of the Status of Endangered Wildlife in Canada. The causes of this trend are not well understood, but as long-distant, neotropical migrants, these birds rely on many locations, and safe and healthy habitats to support different stages of their annual cycle.

Key conservation concerns:

- Habitat availability
- Changing climate & seasonal shifts result in mis-matched timing of food availability
- Decline in food source linked to pesticides

Click here for IUCN assessment

The IUCN Red List assessment bar shows the following categories from left to right: NOT EVALUATED (NE), DATA DEFICIENT (DD), LEAST CONCERN (LC), NEAR THREATENED (NT), VULNERABLE (VU), ENDANGERED (EN), CRITICALLY ENDANGERED (CR), EXTINCT IN THE WILD (EW), and EXTINCT (EX). A red circle with the IUCN logo and 'RED LIST' text is positioned over the 'LEAST CONCERN' category, with a white arrow pointing to it from the 'Click here for IUCN assessment' text.

BARN SWALLOW

Annual Cycle

Click here to view Bird Migration Explorer



BREEDING

Barn Swallows settle into breeding areas in April and May, seeking open areas like grasslands, farms and marshes. Males set up territories near structures, often associated with human dwellings, like barns and outbuildings. Cup-shaped nests are made of mud pellets and lined with feathers for 3-7 white eggs. Females incubate for 2 weeks, and both parents feed the young for another 3 weeks.

FALL MIGRATION

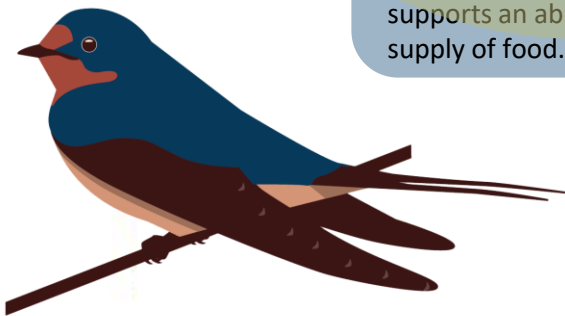
Adult Barn Swallows leave the breeding area shortly after their young fledge the nest. By August, large flocks of swallows gather on power lines, in fields and wetlands, foraging and preparing for the journey back to their wintering grounds.

NON-BREEDING

Barn Swallows spend the non-breeding season in Central and South America, where the tropical climate supports an abundant supply of food.

SPRING MIGRATION

Barn Swallows are neotropical migrants, travelling long distances to breeding areas in North America. They migrate during the day, moving north as insects emerge with the warmer weather.



Abundance Animation:

www.ebird.org/science/status-and-trends/barswa/abundance-map-weekly

Barn Swallow

- Resident year-round
- Breeding only
- Wintering only
- Migration only

Map: A. Couturier, Bird Studies Canada
Source: NatureServe

RESEARCH IN FOCUS:



Adapted from Motus Wildlife Tracking System Projects:

[Barn Swallows Cambridge and Toronto Zoo #207](#)

Barn Swallow Ecology Project

Scientists are exploring what factors may be impacting Barn Swallows between the breeding stage and fall migration.

SCIENCE GOALS:

- Observe the regional post-breeding movements and survival of juvenile Barn Swallows.
- Determine the locations and dates that individual Barn Swallows start fall migration.
- Identifying important stopover locations and length of stay during migration.

METHODS:

Adult and juvenile Barn Swallows are tagged at their nesting site, usually within barns or outbuildings. Mist nests are set up inside the barn or at an entrance where birds move in and out with food for the young chicks.

An aluminum band is attached to the birds leg, and information about its age, sex, fat, wing length and weight are recorded. A nanotag with a loop harness is wrapped on the birds legs and sits at the base of the bird like a backpack. The birds are released, and the tags emit a unique signal that can be detected by the Motus receivers. Detections of these tags indicate the date and location of the individual bird as it moves across the landscape.

Nanotags have been released on more than 250 Barn Swallows since 2016 in southwestern Ontario, and in Atlantic Canada.



PHOTO: BROCK AND SHERRI FENTON



PHOTO: MIRIAN BAUMAN



PHOTO: MEGAN WILCOX



PHOTO: LIZA BARNEY



Swallow Survival Taking Flight – Dean Evans (01:00)

STUDENT ACTIVITY



PHOTO: GRAHAM SORENSON

The following individual Barn Swallows represent a subset of the population's movements across the landscape.

Explore the post-breeding and migration movements on the provided base map using the following guidelines:

1. Label the bird species in the top right corner of the map page.
2. Use the detection data in the table below to plot the locations on the map.
3. Connect the dots and label each track with the tag identification number.
4. Draw arrowheads on the tracks to point in the direction of bird movement.
5. Label the track dates on the first detection location and the last detection location.
6. Circle the location where the bird stopped for the longest time. Label its length of stay.
7. Using the scale on the map and a ruler, measure and label the total flight track distance from its wintering to breeding location.
8. Choose two detections, and calculate the flight speed between locations (distance/time as km/hr). Label this on the map sites.
9. Build a legend in the bottom left corner of the map. Use a different color to label each stage: Breeding, Migration, and Wintering
10. Fill in the Breeding range and the Wintering range of the map, using the legend colors. Trace the flight tracks with the color for Migration.
11. Circle the country names of which this bird was detected in.
12. Draw a big star on your location. Which range for this species are you located?

PROJECT DATA

DATE	LATITUDE	LONGITUDE	ALPHA-NUMERIC	NEAREST REFERENCE	LENGTH OF STAY
July 31, 2018	43.44	-80.64	I-9	Kitchener, Ontario, Canada	27d 5h 3m 46s
August 28, 2018	42.62	80.72	I-9	Woodstock, Ontario, Canada	0d 0h 3m 21s
August 28, 2018	43.06	-80.75	I-9	Port Burwell, Ontario, Canada	0d 0h 10m 28s
September 2, 2018	30.09	-84.16	I-12	Tallahassee, Florida, USA	0d 0h 21m 45s
September 13, 2018	8.64	-77.35	I-16	Panama City, Panama	0d 0h 4m 36s
July 25, 2018	46.12	-64.24	J-8	Shemogue, New Brunswick	23d 23h 0m
August 24, 2018	46.18	-64.12	J-8	Johnson's Point, New Brunswick	1d h 32m
August 25, 2018	45.9407	-64.2575	J-8	Jolicure, New Brunswick	0d 0h 8m
August 26, 2018	45.1257	-67.2661	J-8	Upper Mills, Maine	0d 0h 9m
August 27, 2018	3.3351	-70.5492	J-9	Wells, Maine	0d 0h 7m
August 27, 2018	42.7804	-70.8084	J-9	Plum Island, Massachusetts	0d 4h 56m
August 31, 2018	39.058	-74.7748	I-10	Cape May, New Jersey	0d 20h 55m
September 5, 2018	30.4313	-81.4108	I-12	Jacksonville, Florida	unknown

Check your migration track here:

www.motus.org/data/demo/educationBARS.html



DISCUSSION

Use the guided discussion boxes below to analyze the project results from this Case Study. Compare and contrast with other species:

POPULATIONS

1 *What is the population trend and status for Barn Swallows?*

MIGRATION ECOLOGY

2 *What habitat and food resources make a good stopover site for this species?*

THREAT ASSESSMENT

3 *Identify a threat that might impact survival or success during breeding, migration or non-breeding stages of annual cycle.*

CONSERVATION

4 *How can human-related threats be reduced or mitigated?*



CRITICAL THINKING:

*How might **CLIMATE CHANGE** impact the range and resources for Barn Swallows?*



