

MIGRATION PRESENTATION



ACTIVITY NOTES

This 'reader's theatre' activity is a presentation delivered by the students, guided by slide scripts.

You may choose to edit the language to best suit student reading level, vocabulary or comprehension.

1. Print the interactive presentation script tabs in this file.
2. Cut each tab out and distribute among students.
3. Play PowerPoint Slideshow: motus.org/education/activities/
4. Students read aloud their corresponding script in chronological order.

LOCAL CONNECTION: Guided questions for pre- and post-activity discussion

- Have you seen a bird today? What birds live in our backyards, schoolyard and neighborhood?
- What connection to birds do we experience in our lives?
- What is the current stage of our birds' annual cycle (breeding, migration, wintering/non-breeding)?
- Has anyone had a bird nest in their yard? What time of year? What species?
- Can we identify any healthy habitats for birds in our neighborhood?
- Can we identify any risks or threats to birds in our schoolyard, homes or community?
- How can we be bird-friendly at our school, homes or in the neighborhood?
- Revisit vocabulary and concepts used in this presentation:

-biodiversity

-migration

-bird banding

-ecosystem

-breeding

-stopover

-habitats

-flyway

-stewardship

-populations

-neo-tropical migrants

-conservation

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Birds are fascinating.

They are bright and colorful, vocal and dynamic.

They can be found in every habitat and location on Earth.

Some of these might be familiar in our neighborhood.

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More than 1,500 different bird species make use of the diverse habitats and ecosystems across North America.

How many species live in our province or state?

(Click on the bird on your country to view eBird statistics)

3

Birds are important to nature and humans in many ways.

They help keep the ecosystem in balance, pollinate flowers and spread seeds.

Birds connect people to the natural world, provide food and enhance our recreational activities.

4

Birds are also important indicators of changes to our environment.

Each species, or group of birds, have their own niche in the ecosystem. They depend on healthy habitats for survival and reproduction.

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So, how are birds doing?

The State of North America's Birds is a population assessment for species that occur in Canada, United States, and Mexico.

This report states that 432 North American bird species are at risk and need urgent conservation action.

If each person in our school represented a bird species, every third person would be considered at-risk.

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The State of Canada's Birds describes the population trends for groups of birds since 1970.

Many Waterfowl and Birds of Prey are recovering due to successful conservation and management efforts.

Meanwhile, populations of shorebirds, grassland birds, and aerial insectivores are rapidly declining.

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Before we can help to protect a bird species, we need to understand its life cycle ecology and resource needs.

Many birds, like this Barn Swallow, migrate north in spring to find food and habitat for breeding. They mate, make a nest, lay eggs and raise young. As the season and food resources change, they move south to spend the winter.

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Migration is the movement of a group of animals from one place to another.

Birds move around to find new and abundant food resources, and habitats for breeding and non-breeding seasons. Birds often stop during migration to rest and refuel their energy stores.

These stopover sites are very important to the success of their migration and survival.

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This map displays the geographic ranges that support Magnolia Warblers at different stages of their annual cycle.

They breed in the boreal forest of Canada in the summer, and migrate south to spend the winter in Mexico.

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In North America, there are 4 major routes that birds travel during spring and fall migration. These are called Flyways.

Question: Which FLYWAY are we in?

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There are many different kinds of migration strategies used by birds:

Permanent residents and short-distance migrants, like Black-capped Chickadees, are able to find supplies of food nearby, all year round.

The purple shows their year-round range in North America.

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Medium-distance migrants, like American Robins, cover larger distances. They move with changes in weather and seasons, such as day length, temperature and food availability.

The map shows how robins move north and south of their year-round range.

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Neo-tropical migrants, like Barn Swallows, move long distances between northern breeding ranges (orange) and wintering grounds in Central and South America (blue).

Migration is triggered by an internal clock that changes their behavior and physiology, preparing them for migration.

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Migration is an amazing feat, and can be different for each species.

-Blackpoll Warblers leave the boreal forest in the fall, and spend 3 days flying over the Atlantic Ocean without stopping!

-The Ruby-throated Hummingbird can flap its wings 60 times each second. It takes the hummingbird 20 hours to fly over the Gulf of Mexico during migration. That is more than 4 million flaps!

-The champion of the world's longest migration is the Arctic Tern. It flies from the Arctic to the Antarctic, and back each year!

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The secrets of bird navigation are not fully understood.

Birds use a combination of clues to help navigate, like the sun, stars and landforms. They are also guided by an internal compass, and the Earth's magnetic fields.

This journey can be influenced by weather and temperature.

Using multiple senses and clues help guide birds to the same locations each year.

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Scientists still have many questions about bird migration, and these mysteries are being unlocked with the help of technology.

Tracking devices, radar imaging and Citizen Science each contribute unique information to the story of bird movements.

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The original tracking method was a 'Mark and Recapture' process called Banding.

Birds are safely caught, and quickly assessed for species, age, sex, wing length and weight. A metal band with a unique number is attached to the birds' leg, and it is released back to the wild.

If the bird is caught again, we can learn about its age, health, and movements between locations.

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Radio Telemetry is a commonly used technology that does not require the bird to be re-captured to retrieve data.

Small, coded tags are attached to a bird, which is then released back into the wild. Each tag emits a unique signal that is detected by hand-held radio antennas when in close range.

However, it is challenging to follow flying birds over long distances with this equipment.

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To address this challenge, antennas have been installed across the landscape. These antenna sites are called receiving stations.

To date, there are more than 800 receiving stations set up across North, Central and South America.

This is the [Motus Wildlife Tracking System](#).

How does it work?

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If a tagged bird is within 15 km of a receiving station, the unique pulse of its tag is detected by the antenna.

This information is sent to the computer stored at the base of the antenna, where it logs the tag identification with the date and time.

The data is transmitted to the project scientists for analysis.

Tagged birds can be detected at multiple receiving stations.

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This information helps to connect the dots of bird movements, identify important stopover sites for resting and feeding, how long it takes to travel, and where they stop to breed or spend the winter.

Click the [map](#) to view Thrush movements in Spring of 2016.

So how is this information being used to help birds? The path towards conservation has several important steps.

Step 1 - Long-term monitoring determines population trends for species.

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Step 2 - Tracking projects help identify species' habitat needs, risks and threats.

Step 3 – Research guides policies and collaborations for conservation

Step 4 – Stewardship action works towards population recovery.

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We can be environmental stewards, and bird-friendly at school, home and in our community, by:

- Enhancing habitat for birds during the winter, along migration routes, and for breeding.
- Reducing threats to birds, like window collisions, cat predation, pesticides and other environmental contaminants.
- Participating in bird-focused Citizen Science programs
- And learning more about birds!

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-We can take a virtual field trip to the Long Point Bird Observatory to meet the biologists and learn how they tag birds on migration.

-We can become species experts with Motus Case Study projects.

-We can explore tracking data and bird movements of different species and regions

-And we can learn how to analyse the data with statistics.

The more we learn about birds, and our environment, the better we can help to conserve our wild species and wild spaces.