



Finally Fall: Birds on the Wing – Migration: Part 1

“Good luck, guys!”

Back in prehistoric times when I was in college, my ornithology professor would halt class whenever we heard honking overhead. She would gaze up to the heavens and call out this verbal wish of encouragement to the V-shaped formations of geese heading south. Then with hushed reverence, “Behold - the miracle of migration.”



Now granted, this was back in the days before resident Canada geese populations exploded and the birds often became the nuisance that they are today. But she could remember a time when geese were endangered in this country and she wanted us to cherish the moment. She wanted us to fully appreciate the improbability of a migratory bird. We’re talking about a fluff of feathers, sometimes weighing next to nothing, leaving its summer home in the fall, flying hundreds or thousands of miles for days on end without rest or nourishment, only to turn around and make the same treacherous journey in reverse the following spring. Yes, the word miracle pretty much sums it up.

(Reflections by Joanne Vogel)

Of the more than 650 species of birds that breed in North America, more than half are migratory. And there are billions of individuals that migrate every year. The word migration comes from the Latin word, *migratus*, which means “to move or change.” Birds [migrate](#) from one region, or habitat, to another in order to mate, nest, grow, and find food. Migration can be triggered by a combination of changes in day length and temperature, changes in food supplies, and genetic make-up. Over eons they've evolved incredible adaptations for long-distance flight, navigational accuracy, and herculean endurance.

Birds that nest in the Northern Hemisphere mostly migrate northward in the spring to find food (insects and budding plants) and nesting habitat. Then between September and November, when the availability of insects and other food declines, the birds move south again to places with more abundant food supplies. People often think birds fly south to escape the cold. But many species, including the miniscule ruby-throated hummingbird, can withstand freezing temperatures as long as they get enough to eat.

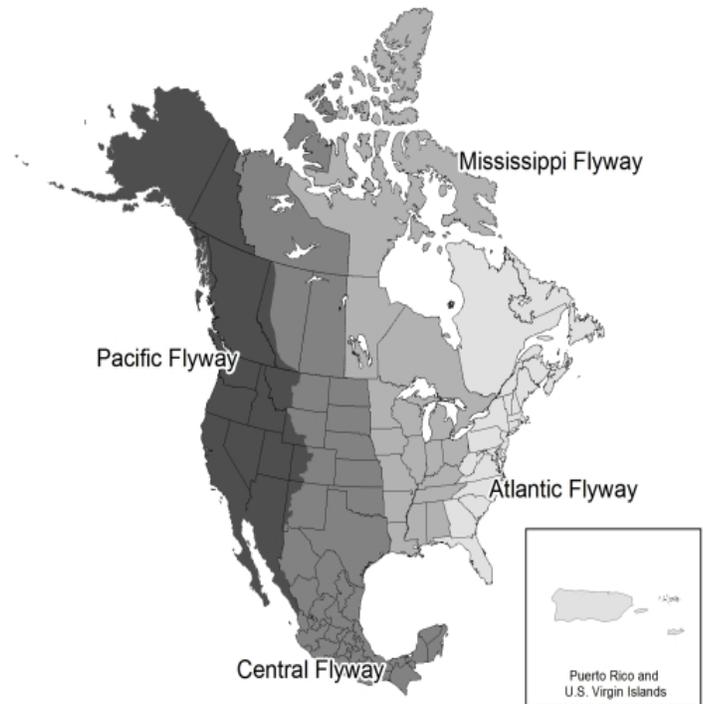


Many birds fly all the way to Central and South America where there is little change in the length of days and temperatures stay warm all year. Conditions are favorable for finding food all winter as insect populations are abundant. Birds that fly that far south are called [neotropical migrants](#) and there are more than 200 species on this [list](#). Most of the songbirds like warblers, thrushes, tanagers, and vireos are neotropical migrants, but so too are many waterfowl, shorebirds, and raptors. These birds are considered [winter residents](#) in the tropics because they will be heading back north in the spring.



When they leave the tropics, many will fly all the way back to northern Canada and the arctic circle. In Northern Hemisphere countries like the United States and Canada, the long days of the northern summer provide birds with more hours to forage and feed their young. But as the days shorten during fall and insects, worms and fruit become scarce the birds head south again. They are considered [summer residents](#) in their northern nesting zones.

Not all birds migrate such great distances. There are short range migrants that only move short distances as in moving up and down a mountain or from one habit to another. There are medium range migrants that only move between a few states, like robins and blue jays. Then there are some species that don't migrate at all. They manage to survive winter while staying put all year round. These are the more familiar species such pigeons, crows, cardinals, and chickadees. These are called [permanent residents](#).



Most birds migrate in the dark of night. There are advantages to flying under the cover of darkness. Colder air temperatures reduce the risk of overheating and allow birds to fly further without having to stop and cool down. Equally important, dark skies offer protection from predators like hawks. But how can they find their way in the dark? Scientists have come to believe that birds use the stars to navigate as well as the earth's magnetic field. Birds are probably monitoring the earth's magnetic field using tiny grains of a mineral called magnetite located in their beaks. The iron-containing mineral might act like a compass. Other scientists think that the birds can actually see the magnetic field with their eyes. Not all is known about how birds find their way, but they probably use more than one method. Learn more about bird [navigation](#) here.



Birds that fly during the day, like hawks and ospreys, use the position of the sun to find their way, but birds can still navigate on cloudy days and fly across the ocean where there are no landmarks which is when the earth's magnetic field may play a role in helping them find north and south.

Some may also use the sighting of landmarks like rivers, mountains, or coastlines. Ornithologists think the birds make mental maps that they can remember on subsequent migrations after their first. Some also might use smell to find their way, sniffing their way home.



Test Your Knowledge

1. What does the word migration mean?

Answer: It means to move or change.

2. Why do birds that live in North America migrate south in the fall?

Answer: Availability of insects is reduced with the coming of winter and birds that eat insects must go somewhere to find enough food.

3. Some North American birds fly all the way to tropical regions in Central and South America for the winter. What are these migrants called?

Answer: Neotropical migrants.

4. Many birds migrate at night. What are the advantages of flying at night?

Answer: It is easier to avoid predators and colder air temperatures reduce the risk of overheating and allow birds to fly further without having to stop and cool down.

5. How do birds find their way in the dark?

Answer: Birds use the stars to navigate and can sense the earth's magnetic field.

6. Raptors usually migrate during the day. How do they find their way?

Answer: Birds that fly during the day like hawks and ospreys use the position of the sun to find their way. Some may also use the sighting of landmarks like rivers, mountains, or coastlines and make mental maps that they remember.

7. Do birds ever use their sense of smell to navigate?

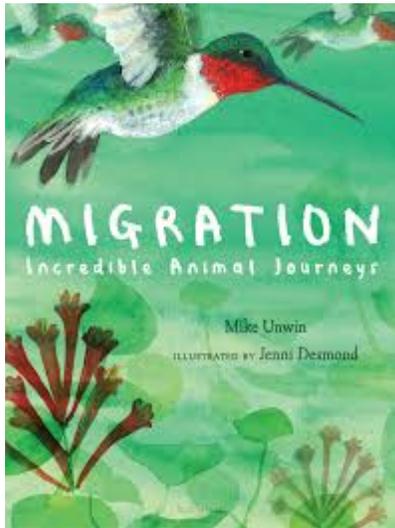
Answer: Yes, some birds actually sniff the air as they migrate, finding their destination by finding a familiar smell.

8. Why do some birds breed all the way north in Canada and near the arctic circle?

Answer: In Northern Hemisphere countries like the United States and Canada, the long days of the northern summer provide birds with more hours to forage and feed their young.

To investigate the topic of migration and other animals that are on the move, there are some beautifully constructed trade books that may serve as an aspect to your teaching and learning. Trade books are recognized as a “hook” to prompt interest and curiosity for adults and children alike.

Animals of all shapes and sizes make epic journeys across our planet, through harsh weather, avoiding hungry predators, in their efforts to survive. Travel around the globe with some of the world's most incredible animals and discover their unique migration stories.



Follow the emperor penguin through snow, ice and bitter temperatures; watch as the great white shark swims 10,000 km in search of seals; track huge herds of elephants, on their yearly hunt for water and be amazed at the millions of red crabs, migrating across Christmas Island.

Follow the amazing migrations of these 20 creatures: Arctic tern, barn swallow, bar-headed goose, ruby-throated hummingbird, osprey, wandering albatross, whooping crane, emperor penguin, African elephant, blue wildebeest, caribou, straw-colored fruit bat, humpback whale, green turtle, Southern pilchard, salmon, great white shark, monarch butterfly, globe skimmer dragonfly, Christmas Island red crab (Source: Goodreads Book Review)

This book was written by Mike Unwin, a UK Travel Writer of the Year, and illustrated by Jenni Desmond, winner of the New York Times Best Illustrated Children's Book.

When the author was asked: What are you hoping that children and other readers will take away from your book?

He responded: *That many animals of all kinds are on the move all the time. These animals have to move to survive - and if we make it difficult for them, by putting barriers in their path, or by damaging the landscapes through which they have to travel - then their survival is threatened. I also hope to convey just how amazing migration is: the extraordinary feats of endurance and navigation of which animals are capable.*

The author was also asked: Many migratory species are becoming increasingly rare or threatened with extinction. What do you think can or should be done?

His response captures the world-wide interconnectivity of our natural resources and of nature itself; *Migration is an international phenomenon and protecting migrating species requires international cooperation. No nation can succeed alone. We have to work together to provide migrating animals with protected cross-border corridors so that they can complete their journeys safely. And we have to understand that everywhere is connected. If we pollute the oceans in one part of the world, it quickly causes problems elsewhere - affecting sea turtles, whales and other marine wildlife that travel from one ocean to another.*

The complete interview with author Mike Unwin can be found [here](#).



Additional Resources

- [Bird Migration](#)
- [Bird Cast video](#)
- [Cornell Naturalist Outreach: Migration](#)
- [Researching migration](#)
- [Mesmerizing Migration animation](#)
- [New tools to study Bird Migration](#)
- [Climate Change and Bird Migration](#)
- [Seven Things to Help Birds](#)
- [How Do Scientists Map Migration?](#)

For information about how the topic of migration can be featured in your curriculum, or for ways to use [Migration: Incredible Animal Journeys](#) with preK-12 interdisciplinary content, contact Kate Reilly, Manager of Education, Duke Farms at kreilly@dukefarms.org

Don't forget to check out the Birding Platform at Duke Farms to make your own discoveries!