



HCTF Education

Biodiversity in BC

Learn about BC's unique diversity of wildlife and ecosystems!



Bird Migration



Masters of migration

When we think of bird migration, we might picture the classic “V” of geese flying overhead. But geese aren’t the only birds to migrate – far from it! Of the more than 650 species of breeding birds in North America, **more than half** are migratory. BC is part of the Pacific Flyway, a major migratory route between the Arctic and South America that stretches some 15,000 kilometers along the west coast of the continent. Read on to learn more about the amazing journeys of birds!

Why migrate?

Climate: When the north thaws at the end of winter, rich habitat opens up and birds rush in to fill it. Migration also occurs between high and low elevations in the mountains, and from the coast to inland areas.

Food: In spring, northern environments explode with an abundance of life. Insects hatch, small mammals leave their burrows, flowers bloom, plants grow, and seeds ripen. All are foods for migratory birds.

Breeding: An abundant food source and few predators makes a location ideal for nesting and raising young. Many ground-nesting birds fly to the far north to breed where there are fewer land predators and many summer insects.



Rufous hummingbird: Migration champion

The Rufous hummingbird (*Selasphorus rufus*) makes one of the longest migratory journeys of any bird in the world, as measured by body size. At just over 7.5 cm long, its roughly 6276 km migration from Mexico, through BC, and into Alaska is equivalent to 78,470,000 body lengths!

Why fly in a “V” formation?

The V-formation helps flocks of birds to conserve energy over long flights. As birds fly, air flows over and around their wings. The air moving up helps create “lift” for the next bird in the V-formation. This means that the bird behind needs to use less energy to fly. Members of the flock take turns flying at the front of the “V”.



Amazing navigation

Birds have a remarkable ability to migrate to the same area year after year. How this remarkable feat is accomplished has been the topic of many studies. We are learning that different bird species use a variety of tools to find their way. Sometimes a combination of multiple techniques is used.

Sun and stars: Some birds use the position of the the stars and sun and to determine direction. Most songbirds migrate at night, but determine the proper direction from the setting sun. They remember that direction when they begin their migration after dark.

Landmarks: Some species make their annual migrations following mountain ranges, rivers, and lakes. These pathways are often related to important stopover locations that provide food supplies critical to the birds’ survival. In BC many birds follow the coastline on their migration along the Pacific Flyway.

Internal compass: Researchers have discovered a spot on the beak of some bird species that contains magnetite, an iron-rich mineral. This may act like a compass by giving the bird information about its position relative to Earth’s poles. Specialized cells in birds’ eyes may help them see magnetic fields.



Migration hazards – The rewards of migration are high, but so are the risks.

Physical: A journey that can be several thousands of kilometers in length requires a lot of strength and endurance, and puts severe stress on the body. A sick, injured, or exhausted bird may not make it.

Environmental: Birds must find enough food and water along the way to fuel their flight. Storms can send them off course. Birds are sometimes swept thousands of kilometers from where they should be and become lost.

Predators: Outdoor **cats** and feral cats are the most common predators that threaten migrating birds. The estimated number of birds killed by cats every year is in the hundreds of millions. Off-leash **dogs** along beaches, lakes, and wetlands chase birds during a critical time when they need to be eating, resting and fueling up for a long journey. Instead they spend their energy flying away from dogs. It can be a deadly situation for the birds.

Disease: One of the hazards of gathering in large flocks is the ability for disease to infect a large population.

Human-related: Birds flying near cities (sometimes for the first time) can become dazzled and disoriented by the lights and reflections of glass windows. Collisions with glass kill 1 billion birds per year in North America.



How you can help migrating birds – Everyone can help these amazing travelers make their journeys safely.



- Create bird-friendly naturescaping and preserve natural habitats for birds to rest and refuel during migration. This includes choosing native plants with flowers, berries, fruits, nuts, and seeds.
- In areas with low amounts of natural foods, you can feed birds by offering nutritious foods such as suet, sunflower seeds, fruit, nuts, and nectar. These foods provide high amounts of energy during migration. Keep bird feeders and birdbaths clean to avoid spreading diseases through migratory flocks.
- Keep your dog on a leash along beaches and waterways and keep your cat indoors. If they do go outdoors, use a ruff or bib recommended by bird conservation organizations as effective in reducing cats' abilities to kill birds. Bells don't work. Research methods to prevent bird-window collisions at home.
- Share your love of birds with friends and family members. This helps raise awareness about birds and encourages more people to protect birds and appreciate their amazing migrations.

TRY THIS!

Make a pine cone feeder!

These seed feeders are a great way to give our feathered friends a nutritious energy boost!

Materials: pine cones, string (for hanging), bird feed (from a pet or garden store), unsweetened peanut butter (or use seed butter if there are allergies)

1. Tie a string onto your pine cone.
2. Spread the peanut butter over your pine cone (this can get messy!)
3. Roll your peanut butter pine cone in the bird seeds. Press the seeds in firmly.
4. Your pine cone bird feeder is finished! Now hang it outside, out of the reach of squirrels!



Arctic tern: Migration champion

The longest migration known in the Animal Kingdom is made by the Arctic tern (*Sterna paradisaea*). This amazing bird travels 90,000 km from the Arctic to the Antarctic every year. Many use the Pacific Flyway, traveling along the coast of BC. Arctic terns can live up to 30 years, which means their total lifetime travel is equivalent to going to the moon and back more than three times!

Looking for more bird activities?

The Cornell Lab offers K-12 resources that build birding and science skills while inspiring young people to connect to local habitats, explore biodiversity, and engage in citizen-science projects. Visit www.birds.cornell.edu

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