

**Foundation for Wildlife Conservation, Inc. and Zoological Society of
Milwaukee Birds Without Borders – *Aves Sin Fronteras*[®]**

BIRD MIGRATION FACT SHEET

WHAT IS BIRD MIGRATION?

Migration is the seasonal movement of birds at predictable times of the year, generally between breeding and non-breeding areas.

WHY DO BIRDS MIGRATE?

Food: The change of seasons causes a change in food supply, causing birds to move to an area with a more plentiful food supply.

Reproduction: Birds also migrate to a specific area to breed and raise their young.

Which birds migrate?

- Many (62%-80%) birds that breed in North America migrate south in fall (August-October).
 - **Short-distance migrants** are birds that spend the non-breeding season (our winter) in areas north of the Tropic of Cancer. They migrate only as far as they need to find food.
 - Short distance migrants eat insects, but most can also eat seeds and fruits.
 - Short-distance migrants begin to return to Wisconsin in March and April.
 - **Neotropical migrants** are birds that migrate to areas south of the Tropic of Cancer (S. Mexico, Central and South America and the Lesser and Greater Antilles in the Caribbean) in the fall (August-October).
 - A more correct term that is now used is **Nearctic migrants**, since these birds spend more time in the tropics than on their North American breeding grounds.
 - Neotropical migrants may actually be tropical birds that have learned to fly north to exploit the plentiful insect food resources there.
 - Many Neotropical migrants are insectivores; they eat mainly insects. (Most insects do not survive the North American winters except in larval or egg forms.)
 - Neotropical migrants remain on their non-breeding (wintering) grounds until April, and then migrate back to their breeding grounds in North America to take advantage of the plentiful insect food supply to breed and raise young.

HOW DO BIRDS PREPARE FOR MIGRATION?

To prepare for migration, birds become hyperphagic, that is, they eat more food which is then stored as fat for their long journey.

- Fat is normally about 3-5% of the bird's mass.
 - Some migrants can deposit up to 30-50% of their body weight by storing fat before migration.
 - A Wood thrush with low fat stores normally weighs about 41-51 grams. To prepare for migration, it deposits fat and can weigh up to 63 grams (about 25% more).
 - The Ruby-throated hummingbird weighs only 4.8 grams and can use stored fat to fuel a non-stop, 24-hour flight across a 600-mile stretch of open water from the U.S. Gulf Coast to Mexico's Yucatan Peninsula!

WHEN DO BIRDS MIGRATE?

DAY MIGRATORS:

Many soaring birds, such as hawks, migrate by day.

- Hawks travel inland by flying and catching thermals that only occur over land. (Thermal updrafts are rising columns of warm air that spiral upwards and lift birds up so they can fly without flapping, saving energy.)
 - Hawks and other raptors do not like to migrate over water. When they reach Mexico and Central America, the land narrows and the hawks are funneled over this land bridge. This causes huge concentrations of raptors, sometimes as many as 100,000 passing in one day.
 - Hawks also use thermals when they are not migrating.

Insectivores, such as swifts and swallows, also fly during the day, feeding on insects as they fly.

Flocking birds, such as waterfowl and some finches, will fly during the day.

NIGHT MIGRATORS:

Most passerines, or songbirds, travel during the night.

- They spend the daylight hours resting and searching for food in the unfamiliar places that they stop to rest.
- It is also thought that the lower night temperatures and stiller air make better flying conditions.

HOW FAR DO BIRDS MIGRATE?

It depends on the bird species.

The Arctic tern may hold the record for longest migration distance since it flies approximately 30,000 km (18,600 mi.) each year traveling between its Arctic breeding ground and non-breeding area in the Antarctic. This amazing feat is possible because terns eat fish. They can feed during their long journey.

Stopover sites

- Most songbirds don't fly to their non-breeding grounds non-stop, but stop a number of times to rest and feed during migration.
 - The places they stop are called stopover sites or staging areas.
 - Birds remain at stopover sites for varying amounts of time based on the weather and how much fat they have stored.
 - Some birds stop only one day to rest and feed and then continue their migration.
 - Others will remain at stopover areas for weeks.
 - Most Neotropical migrants stop along the way to rest and feed.

AT WHAT ALTITUDE DO BIRDS MIGRATE?

Some geese and ducks fly at incredible heights.

Bar-headed geese have been recorded as high as 29,000 ft when they migrate over the Himalayas! That's five miles above our heads, even higher than Mt. Everest!

Most night-migrating songbirds fly below 2,000 ft. (less than 0.5 mile high) when flying over land. Some will fly as high as 6,500 ft (about 1.2 miles high). Occasionally, they may fly higher to reach favorable winds.

The wind sometimes causes birds to fly at certain heights.

- When the bird is flying into the wind (called a headwind), it flies very low.
- When the wind is blowing the same direction as the bird, it pushes the bird along (called a tailwind). With a tailwind, birds will fly as high as possible, where the wind is the fastest.

HOW FAST DO BIRDS FLY?

In still air, most songbirds fly at 20-30 mph.

Waterfowl and shorebirds can fly at 30-50 mph.

A tailwind allows the bird to fly faster.

HOW DO BIRDS NAVIGATE?

Birds have excellent vision and rely on visual landmarks for local and long distance migration. They use key land features such as mountains, rivers, coasts or even large buildings.

There are three types of "compasses" a bird uses to find its way.

Birds can use the sun, the stars and the Earth's magnetic field.

1. Birds use the sun as a compass. They use the positions of the sun during the day to navigate. They can also use the setting sun as an indication of due west.
2. Night flyers use celestial navigation, which means they find their way by knowing the patterns of the stars in the sky, and by knowing special stars like the North Star. In their first year of life birds memorize the position of the constellations in relation to the North Star. These star patterns stay the same even though the Earth moves through space, making the constellations appear to move to different spots in the sky during the year.

3. Birds have tiny grains of a mineral called magnetite just above their nostrils. This mineral may help them to navigate using the Earth's magnetic field, which tells the bird which direction true north is. Birds seem to be much more sensitive to humans in their ability to sense the earth's magnetic field. (The earth has a weak magnetic field. It acts like a huge bar magnet. A compass uses this magnetic field and this is what causes a compass to point north.)

Petrels and pigeons can use their sense of smell to find their way, but it supplements the above-mentioned cues.

HOW DO WE LEARN ABOUT MIGRATION?

Scientists throughout the world conduct many types of research to learn about migration. Heavy concentrations of migrating birds can be seen on weather radar screens. Many bird observatories conduct migration counts to learn about the numbers and species of birds that migrate each year. Bird banding research has allowed scientists to learn about migration. Scientists band many birds every year and sometimes those birds are caught again, or found after they die. By checking the band number and reporting it to the Bird Banding Laboratory, scientists can learn where the bird was first banded and how far it traveled.

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