The Cornell Lab of Ornithology

BirdNotes

FROM SAPSUCKER WOODS

Interpreting and conserving the earth's biological diversity through research, education, and citizen science focused on birds.

Migration Mysteries–FAQs

As the seasons change, some birds in your region will disappear for the winter, while others may show up unexpectedly. This issue of *BirdNotes* answers frequently-asked questions about fall migration.

James Weaver/CLO

Scientists tracked a Peregrine Falcon as it migrated from Alberta, Canada, to Mazatlán, Mexico.

How do scientists know where birds go in winter?

Traditionally, the only way to find out where an individual bird went was to capture and mark it, then wait for someone to find it again by chance. Though the odds are small, sometimes birds are recovered far from where they were originally captured. For example, over a period of 40 years, biologists at the Long Point Bird Observatory in Ontario, Canada, placed aluminum bands on the legs of 39,044 Swainson's Thrushes. Only two of these thrushes were recovered on their wintering grounds, by members of the Asheninka native community in northern Peru!

In recent years, satellite transmitters have given scientists an unprecedented opportunity to track birds around the globe. The transmitters emit signals that are picked up by space satellites and reported to a computer back on earth. Using this technique, scientists have documented a Peregrine Falcon migrating from Alberta, Canada, to Mazatlán, Mexico. They have tracked Swallow-tailed Kites from Florida and Georgia to previously unknown wintering grounds in Brazil, some 5,000 miles away. A Swainson's Hawk traveled from California to the pampas of Argentina, where it revealed a gathering of thousands of other Swainson's Hawks, including hawks that had been banded in California, Colorado, and Saskatchewan, Canada.

Migratory Marvels

Body lengths traveled by a Rufous Hummingbird between Alaska and its winter range in Mexico:
78.5 million

Miles to the gallon used by a Blackpoll Warbler on migration if it burned gasoline instead of body fat:
720,000

Miles traveled by an Arctic Tern in its annual round trip between Arctic breeding grounds and Antarctic seas:
22,000

Estimated number of birds detected by radar passing over Cape Cod, Massachusetts, on a single autumn night:
12 million

Sources: Smithsonian Migratory Bird Center; Living on the Wind *by Scott Weidensaul.*

In most cases, ornithologists know little about exactly where birds from particular regions spend the winter. Often the best information they have is based on where the species is found at different times of the year. North American birds vary widely in their travels. Some 200 Neotropical migrant species, including many shorebirds, hawks, hummingbirds,

and songbirds, spend the winter in Latin America or the Caribbean. Others migrate within North America, such as American Robins and American Goldfinches. Some, such as Northern Cardinals and Western Scrub-Jays, stay resident year-round. The migration of other species, such as Red-breasted Nuthatches, varies depending on the region and annual changes in food supplies.

The wintering ranges of many bird species are still poorly mapped. The Cornell Lab of Ornithology's citizen-science participants have contributed to a better understanding of migration by documenting changes in bird numbers at their feeders and by reporting their sightings to the Lab.

Many of the birds I usually see at this time of year have disappeared. What happened to them?

There are many reasons why birds may suddenly disappear. If the species is migratory, it may have departed early. Each year, the timing of migration varies within a window of several weeks, depending on natural food supplies and the weather. In other cases, birds that normally spend the fall in your area may have moved in response to fluctuations in pine cone crops or seeds. It's also possible that some birds are still in your area but have molted into a less recognizable fall plumage. American Goldfinches, for example, replace their bright yellow feathers with drab ones.

Disease outbreaks may also affect bird numbers. House Finch eye disease has taken a toll on House Finches in some regions, and in some midwestern states, decreases in the numbers of American Crows have coincided with outbreaks of West Nile virus.

Human activities may also influence the number of birds in your area. Applications of toxic pesticides have sometimes contributed to poisonings of birds locally. If nearby fields have been mowed or developed, or forests razed, the birds may have moved elsewhere.

Keep in mind that bird populations fluctuate naturally with the seasons, and from one year to the next. Ornithologists use long-term data to see whether declines in bird species are cause for worry or are within the range of normal variation. For the latest results, visit the Project FeederWatch web site at www.FeederWatch.org.

When should I take my hummingbird feeders down?

Many people worry that by providing sugar water in autumn, they will cause hummingbirds to linger at their feeders rather than migrate when they should. In fact, hummingbirds have a strong instinct to migrate. Even if your feeders are full, the hummingbirds will leave when it's time, in response to decreasing daylight and other environmental cues. To make food available for late migrants and vagrants, fill your feeders with a solution of four parts water and one part sugar, for three weeks after the last hummingbird has visited. In temperatures below 28˚ F, you can prevent the solution from freezing by bringing the feeders in overnight.

Donald Waite/CLO

Hummingbirds such as this Rufous Hummingbird can survive cold temperatures by going into torpor, but when active, they use energy quickly and need a constant supply of food.

In some regions, such as the southernmost states, hummingbirds regularly visit feeders year-round. In North Carolina, where the Ruby-throated Hummingbird is the only breeder, 10 vagrant hummingbird species have been documented during the nonbreeding season!

Despite their small size, hummingbirds are hardy. They can survive sub-freezing temperatures, and even blizzards, by going into torpor—a sleeplike state that saves energy. When not in torpor, however, hummingbirds use energy quickly. At rest, a Ruby-throated Hummingbird uses three times as much energy per unit weight as a House Sparrow, and its heart beats more than 10 times per second! By providing food, you may help a hummingbird survive at a time of year when insects and nectar are difficult to find.