

Reading

Bird Migration

Migration is the regular movement of animals between their breeding grounds and the areas that they inhabit during the rest of the year. Many types of animals migrate, but bird migration in particular has fascinated observers for centuries. Migration is an excellent example of how nature has responded to the biological imperative for species to evolve and spread out into all possible ecological niches that can provide the conditions necessary for species to breed and raise young.

The most common form of bird migration involves traveling¹ to higher latitudes to breed during the warm season and then returning to lower latitudes during the nonbreeding period. This form of migration allows birds to breed in areas that provide optimal conditions for nesting and feeding their young. Because of the way in which the continents are situated upon Earth, migration of this type takes place primarily into the higher latitudes of the Northern Hemisphere. No land birds are known to migrate into the higher latitudes of the Southern Hemisphere; only species of seabirds migrate to the Southern Hemisphere to breed.

Although most bird migration takes place between the lower and higher latitudes of the Northern Hemisphere, many species are transequatorial, living in the Northern Hemisphere during the breeding season and in the Southern Hemisphere during the remainder of the year. A well-known example of transequatorial migration is the arctic tern. This tern, which breeds in the arctic regions and winters in antarctic waters, travels 24,000 miles a year during migration.

Not all migration is long distance. Some species exhibit altitudinal migration. Their breeding areas are in higher elevations, near or at the peaks of mountains, and they spend the nonbreeding season in neighboring² valleys or other nearby low country. This variety of migration is typical of many grouse species, including the ptarmigan, a type of arctic grouse. Many rock ptarmigan never leave the high arctic tundra, spending their breeding season atop windswept arctic peaks and the winter season in nearby valleys, enduring some of the coldest conditions on Earth.

During migration, most birds fly for a limited period each day, probably about six to eight hours, typically flying distances of several hundred miles. Some birds, however, undertake much longer flights when their routes include crossing large bodies of water or other geographic features such as deserts and mountains. For example, many species regularly cross the Gulf of Mexico, a trip that requires a continuous flight of more than 1,000 miles and takes from twenty-four to thirty-six hours or longer. An extreme example of nonstop bird migration is done by the

¹BrE: travelling

²BrE: neighbouring

miles from Alaska to New Zealand each year. At the start of its trip, about 55 percent³ of its body weight is made up of the fat necessary to **fuel** this amazing journey.

How birds manage to unerringly travel between distant locations is one **aspect** that has **fascinated** observers for centuries. Modern-day researchers have attempted to understand this **feat**. Most studies have found that migratory birds all have some ability to navigate and an innate drive to travel in a particular direction. **Nocturnal** migrants, those **species** that travel at night, seem to take their navigational cues from the stars. When the stars are **obscured** by clouds, nocturnal migrants may become confused and return to land or **stray** off course. Diurnal migrants, those migrating during the day, take their cues from the location of the sun. In addition, **diurnal** migrants have also been shown to use geographic features such as mountain ranges or seacoasts as other cues for navigation. Because the stars and the sun move constantly over the course of twenty-four hours, this suggests that migrating birds also have some sense of time.

Answer the questions about **Bird Migration**.

Questions 1–4

Do the following statements agree with the information in the reading passage?

Write

TRUE	if the statement agrees with the information.
FALSE	if the statement contradicts the information.
NOT GIVEN	if there is no information on this in the passage.

- _____ 1. Transequatorial birds cross from one hemisphere to the other when they migrate.
- _____ 2. Many migratory birds breed in the Southern Hemisphere.
- _____ 3. Migrating birds spend the warm months where conditions for breeding are optimal.
- _____ 4. Many birds fail in their migration because they do not have enough body fat to fuel the journey.

³BrE: per cent

Questions 5–8

*Look at the following descriptions of migratory habits.
Match each type of bird with the correct description.
Write the correct letter, **A** or **B**.*

- A** Diurnal species of birds
B Nocturnal species of birds

- _____ 5. They navigate by looking at the sun.
_____ 6. They navigate by looking at the stars.
_____ 7. They may stop flying when clouds obscure the sky.
_____ 8. They navigate by looking at landforms.

My Words

Write the words that are new to you. Look them up in the dictionary and write their definitions.

Words

Definitions

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Word Families

noun	evolution	Our research plans have gone through many evolutions and are now quite different from our original plans.
verb	evolve	Scientists believe that birds evolved from dinosaurs.
adjective	evolutionary	Through the evolutionary process, birds have developed adaptations that allow them to survive in different environments.

noun	fascination	His fascination with birds is not hard to understand, because there are several bird-watchers in his family.
verb	fascinate	The study of the lives of birds fascinates many people.
adjective	fascinating	The study of birdsong is a fascinating subject.

noun	migration	Bird migration generally takes place twice a year, in the spring and autumn.
noun	migrant	Migrants stop to rest several times during their journey.
verb	migrate	Some birds migrate thousands of miles to reach their summer breeding grounds.
adjective	migratory	Scientists study the habits of migratory birds.

noun	navigation	Birds use the sun, stars, and landforms for navigation.
noun	navigator	Migratory birds are amazing navigators.
verb	navigate	Birds navigate by looking at the sun and stars.
adjective	navigational	Migratory birds are born with navigational skills; they don't have to learn them.

noun	observation	We can learn a great deal about the lives of birds through simple observation.
noun	observer	If birds become aware of the presence of an observer, they quickly fly away.
verb	observe	Many people observe birds as a hobby.
adjective	observant	You have to be really observant to spot most types of birds.

Word Family Practice

Choose the correct word family member from the list below to complete each blank.

Birds are **1**..... to many people, and bird watching is a popular hobby. The best time to watch birds is in the early morning, because birds are usually very active at that time of day. The **2**..... must keep still and quiet in order not to frighten the birds away. If you live in a part of the world where **3**..... birds spend their breeding season, then you will have the opportunity to see nest-building activity. Over the ages, different species of birds have **4**..... with different types of nest-building skills. It makes an interesting study to look at the different types of nests built by birds and to watch them as they build their nests. After the breeding season is over and the babies have left the nest, it is time for the birds to head for warmer parts of the world to spend the winter months. Birds **5**..... to their winter feeding grounds, using the stars or the sun as their guide.

- | | | |
|----------------|-----------|--------------|
| 1. fascination | fascinate | fascinating |
| 2. observation | observer | observe |
| 3. migration | migrate | migratory |
| 4. evolution | evolved | evolutionary |
| 5. navigation | navigate | navigational |

Dictionary Skill

Parts of Speech

The word *imperative* can be a noun or an adjective.

Read the dictionary definitions below. Then read the sentences and write the letter of the correct definition for each sentence.

im-per-a-tive [im-PER-uh-tiv]

A adjective. very important; essential

B noun. a priority; an urgent need

- _____ 1. It is our *imperative* to protect the natural environment.
- _____ 2. It is *imperative* to keep dogs and cats away from the bird breeding area.

Listening

CD 1
Track
3

Listen to the talk. Look at the map below labeled A-E. Look at the list of places and write the correct letter, **A-E**, next to numbers **1-5**.

- _____ 1. species list
- _____ 2. restricted area
- _____ 3. observation platform
- _____ 4. gift shop
- _____ 5. donation box

