

# ALL ABOUT BIRDS

## Nests

### **Scrapes nests:**

Created by digging away a simple depression in the ground and adding in a few stones or leaves.

**Burrow nests:** Dug into vertical cliffs, tree trunks or into the ground.

### **Cavity nests:**

Hollowed out of telephone poles, buildings or event cacti or created in holes that exist naturally.

### **Platform nests:**

Made of twigs layered together and softened with grasses or dirt.

**Cupped nests:** The most common type of nest, made in a cup shape.

**Ground nest:** Built up sides out of grass to create a cup shape.



CONSERVATION BOARD

Dickinson County  
Nature Center

22785 Nature Center  
Road, Okoboji

712-336-6352

[www.dickinsoncountynaturecenter.com](http://www.dickinsoncountynaturecenter.com)

Birds are fascinating creatures, so unique compared to other creatures with specially adapted bodies for flight.

## **Hollow bones**

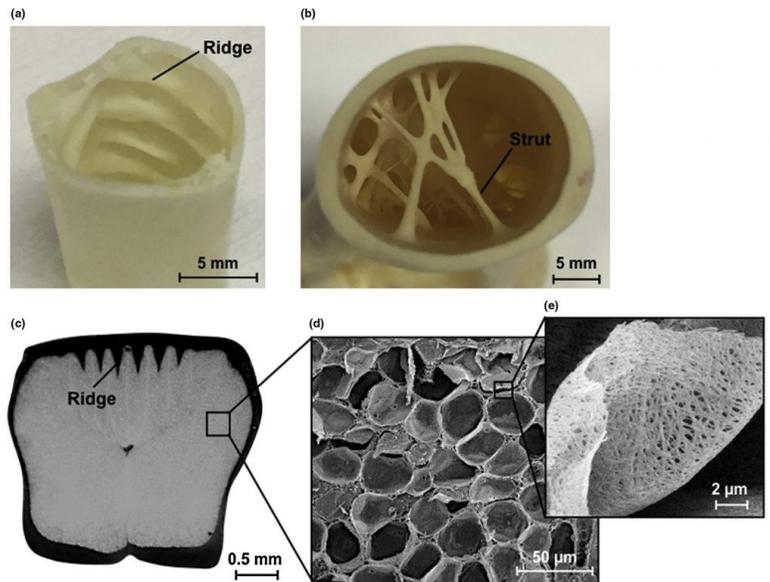
In the spring and fall, the vast majority of birds take to the air.

In the spring, they head north to their breeding grounds, and in the fall, they head south to overwintering areas that are warmer and have ample food supplies.

Migration can be a long and hard journey, and the bigger the bird, the harder it seems the journey would be as the bird has to keep its heavy body flying such a distance.

However, birds have a unique bone structure that makes flying and the rigors of migration easier for them — hollow bones!

A human bone is dense and filled with bone marrow. However, a bird bone is hollow and filled with air. It also has some cross-sections of bone, called struts, that make the bone strong and help birds withstand taking off, flying and landing.



One would think that having hollow bones would make a bird's skeleton lighter than a mammal's, but research has shown that a bird's skeleton actually weighs about the same as that of a mammal. However, the hollow, dense bone is actually stiffer and stronger than a mammal's, making it hold up to the pressure and rigors of flight.

## **Feathers**

Feathers come in a variety of colors and forms, but they are all composed of the protein beta-keratin, just like snake scales.

Feathers' barbs and barbules — smaller hooked pieces that come off of the barbs — make up different feather structures that serve different functions.

**Wing:** Wing feathers are specialized for flight. On one side of the main shaft, there is a flat, windproof surface created by interlocking microstructures.

**Tail:** Tail feathers also have interlocking microstructures. These feathers are typically arranged in a fan shape to help with steering precision in flight.

**Contour:** A bird's body is covered in contour feathers that overlap like shingles. They have flat, waterproof tips and fluffy bases.

**Semiplume:** Fluffy feathers that are hidden beneath contour feathers are called semi-plumes.

**Down:** Down feathers are fluffy, with loosely arranged barbs coming off of the main branch. These feathers help to trap air close to the body to keep a bird warm.

**Filoplume:** These feathers have almost no barbs and are mainly just a shaft with a few barbs on the tip. These are used like mammal whiskers to sense the position of the contour feathers.

**Bristle:** Bristle feathers are mostly shaft as well but have some barbs near the base. They are usually found on the head, protecting the eyes and face.

These feathers change as the seasons change, because birds molt. Their feathers wear out due to the natural elements and bacteria and have to be replaced regularly or the birds wouldn't survive.

Molt is the growth of new feathers, not necessarily just the loss of old feathers. When birds get their first feathers it is also called molt, even though they don't lose any feathers in the process. The loss of feathers occurs when the new feathers that are growing push the old feathers out.



Molting timetables are different for every bird species and usually occur during times when food supply is at its greatest since most birds will be unable to fly for about two weeks as they molt. All birds molt annually, but some also molt parts of their body feathers more than that. Only two North American bird species have been found to undergo two complete molts per year — Franklin's gull and the bobolink.

What stimulates molt is quite unknown to scientists and can have to do with bird hormones following breeding season or even a decrease in daylight length as summer ends and fall begins. Birds wouldn't molt their main wing feathers during migration because it could be harmful to their travels, but whether they molt before or after migration depends. According to "Molt in North American Birds" by Steven N.G. Howell, birds that migrate a short distance tend to molt at their breeding grounds before heading south, and those with a longer distance to travel will wait until they arrive in their overwintering areas. However, some do buck the trend and molt at a certain site during migration where they expect ample food will be.

You may not have ever seen a bird in molt, because those who can't fly or can't fly well, feel vulnerable and will keep to themselves during this time. You may have seen a bird in molt and not even realized it though.

There are two keys to identifying a bird in molt. The first is by gaps in wing feathers, which can be seen well when a bird is in flight. Another way is by the differences between feather colors. A bird in active molt may have clean and crisp feathers that contrast with drab, dirty, old feathers.