Arizona's Raptor Experience, LLC

May 2017

~Newsletter~

Greetings from Chino Valley!

We hope this letter finds you well. Here we are enjoying the first groups of baby quail in the yard and the local ravens who visit on a regular basis looking for food to take back to the nest.

The young birds remind us of a year ago this month when Marlee hatched and entered our lives. She continues to be a wonderful bird! In this photo she is growing in her first set of adult feathers – notice the fluff of down still present on her lower half!

The rest of the birds are molting heavily now – so this newsletter focuses on the molt and the laws associated with possession of feathers. Hope you enjoy it!

The Molt

As the day length increases, temperatures warm and changes in hormones occur, follicles in the skin of birds are activated and new feather growth begins. Although scientists are not entirely sure what triggers molting, these factors are thought to play a role. This physiological process is necessary for the survival of birds and must occur annually in most.

Molting is basically a regular, ordered growth of feathers. Without it, feathers would become too worn to function and the bird would die. After all, feathers play many roles in the life of birds. They cover and protect the body and allow for temperature regulation. The colors and patterns of feathers can signal the sex, age and breeding condition of birds. Feathers also enable flight.

Even so, feathers are not permanent structures. They wear out over time from daily exposure to the elements like sun, rain, wind and even feather degrading bacteria. Contact with vegetation, soil, and other parts of the environment also contribute to feather wear.

The growth of new feathers to replace the old worn ones requires energy, and the molt typically coincides with normal peaks in food supply. The timing of the molt therefore is often simultaneous with nesting, warmer temperatures and is prior to migration. A complete molt in small songbirds can take 1-2 months, while in the Northern Raven, the largest songbird, takes 4-5 months. Other medium to large birds complete their molt in 2-6 months.

There are several patterns or orders in which birds molt their feathers and many factors that affect the process, all of which are not yet understood. The number of feathers on different bird species is also not well documented. One study in the 1930's conducted by Marie Siebrecht included counting the feathers on 79 species of North American birds. She found that most birds have between 1,200 and 2,700 feathers, making up 4-8% of their weight. Larger birds can have far more feathers. Bald Eagles have approximately 7,000 feathers and Tundra Swans have about 25,000 feathers!

Even with such huge number of feathers on the body, they are not attached evenly to the skin. They grow in tracts, and then spread out to cover the whole body. In the following image, Marlee is 13 days old and her feather tracts are clearly visible. By following this growth pattern, the feathers are more easily

P. Schnell photo

controlled by muscles which allow birds to raise and lower their feathers, thermoregulate, display (as in breeding or threat displays) and to preen.

The feathers develop within a protective sheath made of keratin and wax that emerges from the feather follicle in the skin. Once the feather spreads out and is fully grown, the sheath flakes off from the base and the feather is cut off from the circulatory system. Therefore, feathers are dead tissue, like hair and fur on mammals. Old feathers are simply pushed out as the new ones grow in their place.

Can I have that feather?

Finding a feather is like finding a clue to a mystery. What bird left this feather behind? Did it stand right here where the feather lies or did it simply fly overhead and shed a feather along the way?

People have long been fascinated by feathers, as they come in so many shapes, sizes, colors and patterns. They have been used in fashion, decoration, sports like fly fishing and archery, religious ceremonies and more. In the past, people were so enchanted by the beauty of feathers that many birds were almost driven to extinction because of the desire of humans to have them.

When people visit us here at our facility, many ask to take a feather home as a souvenir. If the feather is from a native species, we cannot give them to anyone because of the legal protection given to native birds long ago. In 1918, Congress passed the Migratory Bird Treaty Act (MBTA) to prevent the further loss of bird species hunted for sport, meat and their feathers. The original treaty was also signed by Canada and later versions included treaties with Mexico, Japan and Russia recognizing that birds do not adhere to political boundaries.

So what does the MBTA actually do? Well, it restricts the following activities and makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part,

nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. The word “take” is defined in regulations as: ‘pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.’

In other words, it is illegal to pick up and keep the feathers of most migratory birds. There are some exceptions, such as the feathers of game birds like ducks, geese, turkey, doves, etc. that can be hunted legally during designated seasons. Birds that are considered non-native, like House Sparrows, feral pigeons (Rock Doves) and European Starlings, are also exceptions. In 1962 the MBTA was updated to describe how native American tribes can collect feathers from protected birds for use in religious ceremonies.

In addition to coverage by the MBTA, Bald and Golden Eagles have further protection under the Bald and Golden Eagle Protection Act of 1940. Because of this legislation, the feathers molted by Joy and Leo must actually be collected each year and sent to the National Eagle Repository (https://www.fws.gov/eaglerepository/) where they are distributed to Native Americans who hold a permit to have eagle feathers.

So how do scientists and educators obtain permission to collect migratory bird feathers? They can apply for a Federal Migratory Bird Scientific Collecting permit that authorizes them to collect, transport or possess migratory birds, their parts, nests, or eggs for scientific research or educational purposes. This, however, does ***not*** include eagle feathers.

Here at AZ’s Raptor Experience we do have several non-native birds like Hilda (African Hawk-eagle), Andromeda and Goliath (Eurasian Eagle Owls) and Bronson (Lanner Falcon). These birds are protected under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. All of the non-native raptors in our possession were captive bred, and therefore had **no impact on wild populations of their species**. Because they are non-native birds, we can legally

Photos by Eric Gofreed, DVM

allow visitors to take a molted feather as a memento of their experience. But remember, just as we are bound by ethics to leave no trace when we spend time in nature, we are bound by law to leave those fascinating feathers where they lie.

Happy Hatch Date Marlee!