

Laying and incubating eggs outside the body is one characteristic that helps define what makes birds special, but what else do you know about bird eggs? They are more amazing than you may realize!

## Wild Bird Egg Trivia

All bird eggs are amniotic, which means they include a hard shell, a porous membrane for the exchange of oxygen and carbon dioxide, and a rich yolk that nourishes the developing chick. The yolk is made of fat and protein, and the yolk color varies depending on the quality and composition of the laying female's diet.

Eggs come in many different shapes. Budgerigars and many owls lay round or spherical eggs. Oval-shaped eggs are the most common, while many shorebirds and murrelets lay very pointed, pear-shaped eggs. Pointed shapes help keep the eggs from rolling away when they are laid out in the open, without a sturdy nest to keep them in place.

The colors of wild bird eggs range from plain white to a rainbow of hues such as blue, green, ivory, tan, beige, gray, red, and orange. The strength of the color can vary significantly, and even if eggs appear just plain white to humans, they often show bolder colors under ultraviolet light. Because birds can see ultraviolet colors, this helps them distinguish different eggs even if they all look the same to humans. Calcium carbonate in the shell is responsible for white coloration, while biliverdin and protoporphyrin compounds contribute to other colors.

The eggs of cavity-nesting birds are often plain, but eggs that are laid in more open areas are often marked to help with camouflage. Markings can be black, brown, gray, reddish, purplish, or other shades, and range from tiny flecks and specks to squiggles, larger dots, or heavy splotches. The markings may be evenly distributed on the shell, could be concentrated at one end, or may form a ring or wreath around the egg's circumference.

The thickness of egg shells varies, but has to be thick and strong enough to support a brooding adult and the growth of the developing chick. The shell cannot be so thick, however, that the hatching chick cannot peck its way out. Larger eggs from larger birds generally have proportionally thicker shells. Cassowary eggs have the thickest shells, which can be up to one-quarter of an inch thick, but they're no problem for these large, strong birds to crack out of.

The largest eggs are laid by ostriches, the tallest bird in the world. While most ostrich eggs average about three pounds in weight, an ostrich on a

Swedish farm laid the record-breaking egg in 2008 at 5 pounds, 11 ounces. That is heavier than three dozen chicken eggs combined!

Kiwis lay the largest eggs in proportion to females' bodies. A single egg may be 25-30 percent of the female's size, and that large egg size allows the chicks to be independent nearly as soon as they hatch. This is critical for these flightless birds, since chicks would be at great risk from predators if they remained in the ground-level nest for a long period.

The smallest eggs are laid by hummingbirds, which are the smallest birds in the world. The vervain hummingbird holds the record of the smallest egg ever noted, a tiny white oval just one-third of an inch long and weighing just one-third of a gram. Hummingbirds almost always lay just two of these tiny eggs per nest.

Because eggs are so rich in protein, fat, and nutrients, they are highly coveted sources of food for many predators. Squirrels, rats, reptiles, cats, snakes, raccoons, and many other predators will eat eggs. Other birds, including vultures, jays, crows, gulls, skuas, and raptors, will also eat any eggs they can find. Many nesting birds will even eat the eggshells from their own chicks, which not only replenishes the adults' calcium, but also helps protect the nest from predators by removing the shells.

Not all birds lay eggs in their own nests or even raise their own chicks. There are many species of brood parasites, birds that deliberately lay eggs in others' nests and let "foster" parents raise the chicks, even when the birds are different species. Brown-headed cowbirds and common cuckoos are well known brood parasites. Other birds, especially many different ducks, practice egg dumping, which means laying their eggs in a communal nest of the same species.

The incubation period for eggs can vary greatly, ranging from just 10-11 days for many small passerines to 60-85 days for larger birds. Emperor penguins, wandering albatrosses, and brown kiwis have some of the longest incubation periods. The overall climate and temperature can dramatically affect how long an egg takes to develop and hatch.

Collecting wild bird eggs was once a popular hobby, not just for naturalists studying the eggs or for authorized museum exhibits, but for anyone who wanted to have a prestigious collection. Today, many countries have strict laws prohibiting tampering with wild nests, and it is illegal to collect, trade, sell, or even possess wild bird eggs. In some areas, however, eggs are still

illegally gathered for food or unscrupulous collectors, a practice which continues to put some bird species at risk.

- While birds are well known for their egg-laying prowess, they are not the only creatures to lay eggs outside the body. Many reptiles, fish, amphibians, and insects also lay eggs that have to be fertilized or incubated before they will hatch. Only a few mammals, including platypuses and spiny anteaters, lay eggs. Dinosaurs also laid eggs.
- Oology is the branch of natural science and ornithology devoted to studying eggs, including the anatomy, physiology, development, and other characteristics of eggs. An oologist may also research nests, courtship behavior, mating, and other aspects of breeding that are related to eggs.
- Humans consume many different types of eggs for food. While chicken eggs are the most common, the eggs of ducks, quail, turkeys, emus, geese, guineafowl, ostriches, and pheasants are also considered delicacies in many areas. The eggs of different birds vary in texture, nutritional content, and taste. For chicken eggs, there is no nutritional or taste difference between eggs with white or brown shells, though how a chicken is raised and what it eats can significantly change an egg's taste.