

SELECTION, REPRODUCTION

Do birds pee?

Birds do not excrete urine in the same way as mammals. The lobed kidneys excrete waste products from the blood, which are then excreted directly into the cloaca in the absence of a bladder. The composition of urine also differs from mammalian urine: it is uric acid-based, with less water content, so less water is excreted. Sludge-like urine is excreted with the faeces. The absence of a bladder and unstored urine also makes the body lighter, helping flight. Except for ostriches, which pass urine before defecating solid faeces.

Reproduction

Most birds do not have external sex organs. The reproductive organs are only developed and active at the beginning of the reproductive period, when gametes are produced, and regressed afterwards. Male testes can grow up to 200 times larger than at rest during this period, after which they rapidly regress. With the exception of a few groups - waterfowls (Anseriformes), flightless birds (Palaeognathae) - males do not have mating organs. The sexual organs of the females are also only of significant size during the breeding season.

Courtship before mating

Varied singing

Females choose a mate based on the males' varied songs.

Dancing

Usually the males dance for the females.

Feathers

The combined appearance of the colourful, shiny plumage shows how healthy the bird is. This makes the male a good choice for the female.

Edible present

Some birds take food to the female, showing that they will be able to care for the chicks.

Building

The behaviour of the bowerbirds (*Ptilonorhynchidae*) is very special. They build a nest, which they decorate with flowers, shells, stones, feathers and even human waste. Other species build nests, occupy a territory and the female chooses the structure she likes.



Bowerbird busy working

Source: <https://pixabay.com/photos/satin-bowerbird-bird-359489/>

Nests

For most bird species, a male and a female pair up, this mating is usually for one breeding season, but some species (e.g. eagles) will mate for years or for life. Rearing chicks in pairs is easier than if only one parent had to do it.

Not all species build nests, as some lay their eggs directly on the ground or in the nests of other birds, leaving the breeding and rearing of the young to the "foster parents". Species that build nests usually build a new nest every year, but storks or eagles, for example, may use their nest for decades and they continuously refurbish it. How much of the construction is shared between members of the pair varies.

Emperor penguins, for example, **do not build nests**. Their eggs, and then the hatched chicks, survive the harsh climatic conditions on the legs of the egg-laying penguin or in the folds of skin on the belly.

Many species do not put much effort into nest building. They simply lay their eggs **in a depression in the ground**, which they may line with feathers, e.g. bustards, pheasants, partridges, quails.

The Australian megapodes (*Megapodiidae*) are known to build **mounds of plant parts** and lay their eggs in these rotting piles. The heat generated by the decomposition of organic substances does the incubation, a process that the male bird monitors and controls the temperature by breaking up or scraping the pile. The flamingos make a depression in the top of a cone of mud in which they lay their eggs.

Nest made of stone

The gentoo penguin (*Pygoscelis papua*) simply builds its nest using stones.



Gentoo penguin (*Pygoscelis papua*) with chicks

Source: <https://pixabay.com/photos/gentoo-penguin-penguin-bird-animal-7073391/>

Tunnel dug into the shore wall

One of our native birds is the European bee-eater, which "digs" a horizontal tunnel into a near-vertical shore wall with its beak and feet, at the end of which is a chamber-like widening where it lays its eggs.



European bee-eaters (*Merops apiaster*) in front of their „flat“

Source: <https://pixabay.com/hu/photos/term%C3%A9szet-madarak-3420043/>

Cavities in trees

Several species breed in cavities in living or dead wood. There are few species that can excavate holes in wood themselves. Most cavity-dwelling species occupy existing cavities. They can do this easily because woodpeckers excavate new holes for themselves every year.



European green woodpecker (*Picus viridis*) busy working

Source: <https://pixabay.com/hu/photos/mad%C3%A1r-hark%C3%A1ly-mad%C3%A1rtan-7843683/>

Cup nests

Various plant parts (grass, twigs, rods, often even human waste (coat lining, plastic string, etc.) are used to make a hemispherical structure, which the bird lines with feathers, moss or cotton wool to line the depression where the eggs are laid. It is often stuck together with mud to make it stronger, more durable and resistant. The weight, thickness and size of the nest is related to the weight of the adult bird. Cup-shaped nests are the most common.

Platform nests can be huge, even as large as the bird. The bird builds them from twigs and branches. Stork build nests like this, but so do birds of prey. Birds often use them for years.



White stork (*Ciconia ciconia*) family and their home

Source: <https://pixabay.com/hu/photos/g%C3%B3lya-mad%C3%A1r-feh%C3%A9r-g%C3%B3lyaterm%C3%A9szet-4290464/>

Pendent nests

An elongated, sack-like masterpiece with a tubular entrance at the top. The material of the nest, for example in the case of the penduline tit, consists of flakes of reed flower and reed mace.

Nests on the water

Coots, grebs and other species use a variety of aquatic plants to build their floating nests in the water, which are protected from land mammals.



Eurasian coot (*Fulica atra*) on its floating nest

Source: <https://pixabay.com/photos/coot-nest-bird-fulica-atra-6263147/>

The chimney swallow and the house-martin build nests made of mud. They also incorporate leaves of grass between the tiny mud balls for reinforcement.