

BIRD SENSES III.

Smell

The birds' sense of smell is very underdeveloped. Sight and hearing play a key role in food finding. An exception to this are the flightless kiwis (*Apterygidae*) of New Zealand, which use their sense of smell to find food, consisting of molluscs and insects. Other exceptions include species of the order storm-petrel, which feed primarily on fish.



North Island brown kiwi (*Apteryx mantelli*)

Source: https://hu.wikipedia.org/wiki/%C3%89szaki-szigeti_barna_kivi#/media/F%C3%A1jl:TeTuatahianui.jpg

The sense of taste

Birds have fewer taste buds than mammals, located at the base of the tongue and in the pharynx.



Redshank (*Tringa totanus*)

Source: <https://pixabay.com/hu/photos/mad%C3%A1r-v%C3%B6r%C3%B6s-cs%C3%BCl%C3%B6k-r%C3%A9ti-mad%C3%A1r-7511096/>

Touch

Sensory receptors are found on the legs, beak and tongue of birds. In some waterfowl, such as those that forage in mud, their beaks are almost the only means of finding food. Nerve endings on the woodpecker's tongue can detect food. In fact, their tongues are sticky, which makes it easier to get and keep food. And receptors in the skin help the bird adapt to changes in air movement.

The sixth sense

Birds have a special ability to sense the Earth's magnetic field. This is particularly important for migratory birds and especially during migration. Light-sensitive cryptochrome proteins also exist in plants, but their role there is in growth towards light. In animals, in

addition to regulating circadian rhythms, the individual components of this group of proteins are responsible for sensing magnetic fields. These specific light-sensitive proteins in the eye may play a role in the sensing of magnetic fields. Interestingly, the photosensitive proteins are also present in the retina of the domestic fowl (*Gallus gallus domesticus*) and in the migratory robin (*Erithacus rubecula*). However, while it is present in hens at a constant low concentration, it increases in the robin - and in other migratory species - during migration.

Another idea is that the bird's tissues contain magnetite (Fe_3O_4) crystals that move in response to magnetic forces when the body is moving, thus affecting certain nerve cell extensions.



Robin (*Erithacus rubecula*)

Source: <https://pixabay.com/photos/robin-redbreast-robin-bird-avian-5651465/>