

Built for the Night: A Barn Owl's Adaptations

A free factsheet on how a Barn Owl is made for hunting in the dark

QUICK FACTS

Hearing: can locate prey more precisely than any other animal tested

Flight: silent, thanks to specially shaped feathers

Neck: can turn about 270 degrees, three quarters of a full circle

Face: a heart shaped dish that funnels sound to the ears

A face built to listen

The heart shaped facial disc is really a sound collector. Stiff, curved feathers around its edge scoop up noise and funnel it towards the ear openings, which sit just behind the eyes. The two ears are at slightly different heights, so a sound reaches each one at a very slightly different moment, and the owl's brain uses that tiny difference to work out exactly where a sound came from, both side to side and up and down.

A Barn Owl can locate a sound more accurately than any other animal scientists have tested, and it can catch prey in complete darkness using hearing alone.

Eyes built for dim light

Barn Owl eyes are large, dark and shaped more like tubes than balls, packed with light sensitive cells. They see very well in low light, though not in total darkness. The eyes are fixed in their sockets and cannot roll, so instead the owl moves its whole head, bobbing and swaying to judge distance from slightly different angles.

Wings built for silence

The front edge of each main wing feather is shaped like a tiny comb, the back edge has a soft fringe, and the upper surface is covered in a velvety layer of hair like structures. Together they smooth the airflow over the wing and cut the noise almost to nothing. Even the legs and feet carry fine feathers to reduce turbulence.

The wings are also huge for the bird's size, known as low wing loading, which lets a Barn Owl fly very slowly without stalling, sometimes barely faster than walking pace.

A neck that turns, and feet that grip

An owl can twist its head around by about 270 degrees, enough to look straight behind itself. Its feet carry sharp, curved talons, and the outer toe can swing forward or backward to change its grip for perching or for gripping prey.

DID YOU KNOW?

Silent flight comes at a price. Barn Owl feathers are not very waterproof, and a bird caught in heavy rain can gain around a quarter of its body weight in water, which is why they avoid hunting in wet weather whenever they can.