

= Tawny owl =

The tawny owl or brown owl (*Strix aluco*) is a stocky , medium @-@ sized owl commonly found in woodlands across much of Eurasia . Its underparts are pale with dark streaks , and the upperparts are either brown or grey . Several of the eleven recognised subspecies have both variants . The nest is typically in a tree hole where it can protect its eggs and young against potential predators . This owl is non @-@ migratory and highly territorial . Many young birds starve if they cannot find a vacant territory once parental care ceases .

This nocturnal bird of prey hunts mainly rodents , usually by dropping from a perch to seize its prey , which it swallows whole ; in more urban areas its diet includes a higher proportion of birds . Vision and hearing adaptations and silent flight aid its night hunting . The tawny owl is capable of catching smaller owls , but is itself vulnerable to the eagle owl or northern goshawk .

Although many people believe this owl has exceptional night vision , its retina is no more sensitive than a human 's . Rather , it is its asymmetrically placed ears that are key to its hunting because they give the tawny owl excellent directional hearing . Its nocturnal habits and eerie , easily imitated call , have led to a mythical association of the tawny owl with bad luck and death .

= = Description = =

The tawny owl is a robust bird , 37 ? 46 cm (15 ? 18 in) in length , with an 81 ? 105 cm (32 ? 41 in) wingspan . Weight can range from 385 to 800 g (0 @.@ 849 to 1 @.@ 764 lb) . Its large rounded head lacks ear tufts , and the facial disc surrounding the dark brown eyes is usually rather plain . The nominate race has two morphs which differ in their plumage colour , one form having rufous brown upperparts and the other greyish brown , although intermediates also occur . The underparts of both morphs are whitish and streaked with brown . This species is sexually dimorphic ; the female is much larger than the male , 5 % longer and more than 25 % heavier .

The tawny owl flies with long glides on rounded wings , less undulating and with fewer wingbeats than other Eurasian owls , and typically at a greater height . The flight of the tawny owl is rather heavy and slow , particularly at takeoff . As with most owls , its flight is silent because of its feathers ' soft , furry upper surfaces and a fringe on the leading edge of the outer primaries . Its size , squat shape and broad wings distinguish it from other owls found within its range ; great grey , eagle owl and Ural owls are similar in shape , but much larger .

An owl 's eyes are placed at the front of the head and have a field overlap of 50 ? 70 % , giving it better binocular vision than diurnal birds of prey (overlap 30 ? 50 %) . The tawny owl 's retina has about 56 @,@ 000 light @-@ sensitive rod cells per square millimetre (36 million per square inch) ; although earlier claims that it could see in the infrared part of the spectrum have been dismissed , it is still often said to have eyesight 10 to 100 times better than humans in low @-@ light conditions . However , the experimental basis for this claim is probably inaccurate by at least a factor of 10 . The owl 's actual visual acuity is only slightly greater than that of humans , and any increased sensitivity is due to optical factors rather than to greater retinal sensitivity ; both humans and owl have reached the limit of resolution for the retinas of terrestrial vertebrates .

Adaptations to night vision include the large size of the eye , its tubular shape , large numbers of closely packed retinal rods , and an absence of cone cells , since rod cells have superior light sensitivity . There are few coloured oil drops , which would reduce the light intensity . Unlike diurnal birds of prey , owls normally have only one fovea , and that is poorly developed except in daytime hunters like the short @-@ eared owl .

Hearing is important for a nocturnal bird of prey , and as with other owls , the tawny owl 's two ear openings differ in structure and are asymmetrically placed to improve directional hearing . A passage through the skull links the eardrums , and small differences in the time of arrival of a sound at each ear enables its source to be pinpointed . The left ear opening is higher on the head than the larger right ear and tilts downward , improving sensitivity to sounds from below . Both ear openings are hidden under the facial disk feathers , which are structurally specialized to be transparent to sound , and are supported by a movable fold of skin (the pre @-@ aural flap) .

The internal structure of the ear , which has large numbers of auditory neurons , gives an improved ability to detect low @-@ frequency sounds at a distance , which could include rustling made by prey moving in vegetation . The tawny owl 's hearing is ten times better than a human 's , and it can hunt using this sense alone in the dark of a woodland on an overcast night , but the patter of raindrops makes it difficult to detect faint sounds , and prolonged wet weather can lead to starvation if the owl cannot hunt effectively .

The commonly heard contact call is a shrill , kew @-@ wick but the male has a quavering advertising song hoo ... ho , ho , hoo @-@ hoo @-@ hoo @-@ hoo . William Shakespeare used this owl 's song in Love 's Labour 's Lost (Act 5 , Scene 2) as " Then nightly sings the staring owl , Tu @-@ whit ; Tu @-@ who , a merry note , While greasy Joan doth keel the pot " , but this stereotypical call is actually a duet , with the female making the kew @-@ wick sound , and the male responding hooo . The call is easily imitated by blowing into cupped hands through slightly parted thumbs , and a study in Cambridgeshire found that this mimicry produced a response from the owl within 30 minutes in 94 % of trials . A male 's response to a broadcast song appears to be indicative of his health and vigour ; owls with higher blood parasite loads use fewer high frequencies and a more limited range of frequencies in their responses to an apparent intruder .

= = = Geographical variation = = =

Although both colour morphs occur in much of the European range , brown birds predominate in the more humid climate of western Europe , with the grey phase becoming more common further east ; in the northernmost regions , all the owls are a cold @-@ grey colour . Siberian and Central Asian subspecies have grey and white plumage , the North African race is dark grey @-@ brown , and South and East Asian birds have barred , not striped , underparts , and fine lines around the facial disc . The Siberian and Scandinavian subspecies are 12 % larger and 40 % heavier , and have 13 % longer wings than western European birds , in accordance with Bergmann 's rule which predicts that northern forms will typically be bigger than their southern counterparts .

The plumage colour is genetically controlled , and studies in Finland and Italy indicate that grey @-@ morph tawny owls have more reproductive success , better immune resistance , and fewer parasites than brown birds . Although this might suggest that eventually the brown morph could disappear , the owls show no colour preference when choosing a mate , so the adverse selection pressure is reduced . There are also environmental factors involved . The Italian study showed that brown @-@ morph birds were found in denser woodland , and in Finland , Gloger 's rule would suggest that paler birds would in any case predominate in the colder climate .

= = Taxonomy = =

The species was first described by Linnaeus in his *Systema naturae* in 1758 under its current scientific name . The binomial derives from Greek *strix* " owl " and Italian *allocco* , " tawny owl " (from Latin *ulucus* " screech @-@ owl ") .

The tawny owl is a member of the wood @-@ owl genus *Strix* , part of the typical owl family *Strigidae* , which contains all species of owl other than the barn owls . Within its genus , the tawny owl 's closest relatives are Hume 's owl , *Strix butleri* , (formerly considered to be conspecific) , the Himalayan owl , *Strix niviculum* , (sometimes considered conspecific) , its larger northern neighbour , the Ural owl , *S. uralensis* , and the North American barred owl , *S. varia* . The Early ? Middle Pleistocene *Strix intermedia* is sometimes considered a paleosubspecies of the tawny owl , which would make it that species ' immediate ancestor .

The tawny owl subspecies are often poorly differentiated , and may be at a flexible stage of subspecies formation with features related to the ambient temperature , the colour tone of the local habitat , and the size of available prey . Consequently , various authors have historically described between 10 and 15 subspecies . The currently recognised subspecies are listed below .

= = Distribution and habitat = =

The tawny owl has a distribution stretching discontinuously across temperate Eurasia from Great Britain and the Iberian Peninsula eastwards to western Siberia , and India . The subspecies *S. a. mauritanica* extends the range into northwest Africa . This essentially non @-@ migratory owl is absent from Ireland (probably because of competition from the long @-@ eared owl) , and only a rare vagrant to the Balearic and Canary Islands .

This species is found in deciduous and mixed forests , and sometimes mature conifer plantations , preferring locations with access to water . Cemeteries , gardens and parks have allowed it to spread into urban areas , including central London . The tawny owl is mainly a lowland bird in the colder parts of its range , but breeds to 550 metres (1 @,@ 800 ft) in Scotland , 1 @,@ 600 m (5 @,@ 200 ft) in the Alps , 2 @,@ 350 m (7 @,@ 710 ft) in Turkey , and up to 2 @,@ 800 m (9 @,@ 200 ft) in Burma .

The tawny owl has a geographical range of at least 10 million km² (3 @.@ 8 million mi²) and a large population including an estimated 970 @,@ 000 ? 2 @,@ 000 @,@ 000 individuals in Europe alone . Population trends have not been quantified , but there is evidence of an overall increase . This owl is not believed to meet the IUCN Red List criterion of declining more than 30 % in ten years or three generations and is therefore evaluated as being of least concern . This species has expanded its range in Belgium , the Netherlands , Norway and Ukraine , and populations are stable or increasing in most European countries . Declines have occurred in Finland , Estonia , Italy and Albania .

= = Behaviour = =

= = Breeding = =

Tawny owls pair off from the age of one year , and stay together in a usually monogamous relationship for life . An established pair 's territory is defended year @-@ round and maintained with little , if any , boundary change from year to year . The pair sit in cover on a branch close to a tree trunk during the day , and usually roost separately from July to October . Roosting owls may be discovered and " mobbed " by small birds during the day , but they normally ignore the disturbance .

The tawny owl typically nests in a hole in a tree , but will also use old European magpie nests , squirrel drey or holes in buildings , and readily takes to nest boxes . It nests from February onwards in the south of its range , but rarely before mid @-@ March in Scandinavia . The glossy white eggs are 48 mm × 39 mm (1 @.@ 9 in × 1 @.@ 5 in) in size and weigh 39 @.@ 0 g (1 @.@ 38 oz) of which 7 % is shell . The typical clutch of two or three eggs is incubated by the female alone for 30 days to hatching , and the altricial , downy chicks fledge in a further 35 ? 39 days . The young usually leave the nest up to ten days before fledging , and hide on nearby branches .

This species is fearless in defence of its nest and young , and , like other *Strix* owls , strikes for the intruder 's head with its sharp talons . Because its flight is silent , it may not be detected until it is too late to avoid the danger . Dogs , cats and humans may be assaulted , sometimes without provocation . Perhaps the best @-@ known victim of the tawny owl 's fierce attack was the renowned bird photographer Eric Hosking , who lost his left eye when struck by a bird he was attempting to photograph near its nest in 1937 . He later called his autobiography *An Eye for a Bird* .

The parents care for young birds for two or three months after they fledge , but from August to November the juveniles disperse to find a territory of their own to occupy . If they fail to find a vacant territory , they usually starve . The juvenile survival rate is unknown , but the annual survival rate for adults is 76 @.@ 8 % . The typical lifespan is five years , but an age of over 18 years has been recorded for a wild tawny owl , and of over 27 years for a captive bird .

Predators of the tawny owl include large birds such as Ural owls , eagle owls , northern goshawks , golden eagles , and common buzzards . Pine martens may raid nests , especially where artificial nest boxes make the owls easy to find , and several instances have been recorded of Eurasian

jackdaws building nests on top of a brooding female tawny owl leading to the death of the adult and chicks . A Danish study showed that predation by mammals , especially red foxes , was an important cause of mortality in newly fledged young , with 36 % dying between fledging and independence . The mortality risk increased with fledging date from 14 % in April to more than 58 % in June , and increasing predation of late broods may be an important selective agent for early breeding in this species .

This species is increasingly affected by avian malaria , the incidence of which has tripled in the last 70 years , in parallel with increasing global temperatures . An increase of one degree Celsius produces a two- to three @-@ fold increase in the rate of malaria . In 2010 , the incidence in British tawny owls was 60 % , compared to 2 ? 3 % in 1996 .

= = = Feeding = = =

The tawny owl hunts almost entirely at night , watching from a perch before dropping or gliding silently down to its victim , but very occasionally it will hunt in daylight when it has young to feed . This species takes a wide range of prey , mainly woodland rodents , but also other mammals up to the size of a young rabbit , and birds , earthworms and beetles . In urban areas , birds make up a larger proportion of the diet , and species as unlikely as mallard and kittiwake have been killed and eaten .

Prey is typically swallowed whole , with indigestible parts regurgitated as pellets . These are medium @-@ sized and grey , consisting mainly of rodent fur and often with bones protruding , and are found in groups under trees used for roosting or nesting .

Less powerful woodland owls such as the little owl and the long @-@ eared owl cannot usually co @-@ exist with the stronger tawny owls , which may take them as food items , and are found in different habitats ; in Ireland the absence of the tawny owl allowed the long @-@ eared owl to become the dominant owl . Similarly , where the tawny owl has moved into built @-@ up areas , it tends to displace barn owls from their traditional nesting sites in buildings .

= = In culture = =

The tawny owl , like its relatives , has often been seen as an omen of bad luck ; William Shakespeare used it as such in Julius Caesar (Act 1 Scene 3) : " And yesterday the bird of night did sit / Even at noon @-@ day upon the market @-@ place / Hooting and shrieking . " John Ruskin is quoted as saying " Whatever wise people may say of them , I at least have found the owl 's cry always prophetic of mischief to me " .

Wordsworth described the technique for calling an owl in his poem There was a Boy .