

## LONG-EARED OWL - ASIO OTUS

Over much of its range, long-eared owls occur with the similar-looking short-eared owl. At rest, the ear-tufts of the long-eared owl serve to easily distinguish the two (although long-eared owls can sometimes hold their ear-tufts flat). The iris-colour differs: yellow in short-eared, and orange in long-eared, and the black surrounding the eyes is vertical on long-eared, and horizontal on short-eared. Overall, the short-eared owl tends to be a paler, sandier bird than the long-eared.

**Taxonomy:** Kingdom: Animalia Phylum: Chordata Class: Aves Order: Strigiformes Family: Strigidae Genus: Asio Species: A. otus

### **Habitat:**

**Biomes:** Long-eared Owls roost in dense vegetation and forage in open grasslands or shrublands; also open coniferous or deciduous woodlands. They occur at elevations ranging from near sea level to above 6,500 feet. In Idaho, large numbers of Long-eared Owls nest in willows, cottonwoods, and junipers adjacent to shrubsteppe; in several western states these owls also often build their nests in brushy vegetation adjacent to open habitats. In some areas, including in Michigan and western Oregon, Long-eared owl nests are found in coniferous or deciduous forests near open meadows.

### **Distribution:**

**In US:** Long-eared owls are found throughout the northern hemisphere. Their range extends throughout temperate North America, through Europe and the former Soviet Union as far east as Japan. Isolated populations are also found North and East Africa, the Azores, and the Canary Islands.

**In Other Countries:** Widely distributed across Eurasia from United Kingdom, Spain, and Portugal east to Manchuria, Korea, Taiwan, and Japan. Migrates south to Persian Gulf states, Pakistan, and Egypt. Nonmigratory populations in Morocco, Algeria, Tunisia, Zaire, Uganda, Kenya, Ethiopia, Azores, and Canary Is. (^^^)

**Holistic Description:** Long-eared Owls are lanky owls that often seem to wear a surprised expression thanks to long ear tufts that typically point straight up like exclamation marks. These nocturnal hunters roost in dense foliage, where their camouflage makes them hard to find, and forage over grasslands for small mammals. Long-eared Owls are nimble flyers, with hearing so acute they can snatch prey in complete darkness. In spring and summer, listen for their low, breathy hoots and strange barking calls in the night.

**Species Richness:** 6 SUBSPECIES, 4 LISTED

**Population Dynamic:** CHECK THREATS

### **Evolution and Systematics:**

**Evolution:** Asio brevipes from upper Pliocene in Idaho is oldest known member of genus. Asio otus remains occur in Pleistocene deposits in widespread localities in Europe and U.S.

**Systematics:** In North America, eastern and western populations best separated by plumage (western birds paler); no apparent differences in body size or egg size.

**Number of Species:** 6 SUBSPECIES, 4 LISTED

**Number of Genera:** 6 SUBSPECIES, 4 LISTED

### **Physical Characteristics:**

**Size and Length:** Length: 13.8-15.8 in (35-40 cm) Weight: 7.8-15.3 oz (220-435 g)

**Wingspan:** 35.4-39.4 in (90-100 cm)

**Coloration:** Long-eared Owls are fairly dark birds with buff or orange faces and intricate black, brown, and buff patterning on its feathers. The ear tufts are black with buff or orange fringes, the face has two vertical white lines between the eyes, and the eyes are yellow.

**General Body Features:** Long-eared Owls are medium-sized, slender owls with long ear tufts. The head, roughly as wide as it is long, looks squarish. The facial disks are long and narrow.

**Special Features of the Body:** Owls use tufts to help camouflage, or disguise, themselves. When the tufts are raised, they resemble small twigs or branches. They help the owls stay hidden from predators. Owls hide from songbirds, too, because the little birds dive and make a racket when they spot an owl, a behavior called mobbing.

**Special Features of the Head and Sensory Organs:** Some owls have ears located directly across from each other, in symmetrical placement. Others have asymmetrical placement, where an ear on one side of the head is located above the one on the other side of the head, which increases their ability to locate sound on a vertical axis. These owls use their uneven ears

to judge exactly where sound is coming from. An owl would have to turn its whole head to the right and then to left to take in normal human field of vision. Not a problem, however. Owls have 14 neck bones – double the number humans have. These neck bones, along with a special bone at the base of the skull, allow movement. An owl can turn its head 270 degrees in both directions – that is more than halfway around its body, but not quite a full turn around.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: With two toes pointing forward and two back, known as a zygodactyl, the owl can perch securely on a branch. When the owl clutches its prey, its toes spread so the owl can get a firm grip. When the owl has three toes facing forward and one backward, it is known as anisodactyl. At the end of each toe is a long, sharp claw called a talon. The owl uses its talons to snatch, squeeze, and kill prey animals. It also uses talons to defend itself against predators, such as hawks, other owls, badgers, and raccoons.

Any Special Internal Anatomy: A thin tissue, called the iris, covers the front of the eye and gives the eyeball its color. At the center of the iris is the dark, round pupil. The pupil controls how much light gets into the eye. In the bright glare of a sunny day, the pupil shrinks to block out some of the light. At night, the pupil expands to let in lots of light. An owl's large pupils help it hunt in the dark. Rods help to see in dim light. Cones help to see color. An owl's eyes are packed with rods, so they see very well in the dark. Their eyes contain very few cones, however, so what humans see in color looks mostly black and white to an owl.

Sexual Dimorphisms: Males generally paler than females, especially facial disk, tarsi, and underwing coverts. Overall, female plumage tends to have more dark brown and richer buff. Mass generally higher in females.

Differences Between Juvenile Stage and Adult: Crown feathers dark brown tipped cream; 'ear tufts' very small but visible; facial disk brownish-buff with blackish border and blackish around bill and above eyes; remainder of upperparts brown with feathers tipped and barred creamy white; underparts dull buff-white with narrow pale brown bars except lower flanks, belly, and undertail coverts pale creamy-buff with bars faint or absent; wing coverts pale creamy buff barred brown, remiges, rectrices, and primary coverts.

#### **Behavior:**

Diurnal, Nocturnal, or Crepuscular: Nocturnal

Activity: Long-eared Owls hunt on the wing, coursing back and forth low above open ground. They may also hover over prey, or hunt from perches in strong winds. They kill small mammals with a bite to the back of the skull, and often swallow their prey whole. Nesting Long-eared Owls sometimes form loose colonies, occupying nests as close as 50 feet apart. They may also share nesting areas with American Crows and Black-billed Magpies. Outside of breeding season, the owls roost in groups of up to 100 birds. Older nestlings are called "branchers" because they leave the nest to take up residence in surrounding trees. They move around by jumping, hopping, and pulling themselves up with wings and bill. Long-eared owls usually form monogamous pairs. Bonding probably begins in winter, before communal roosts disband. Courting males make a complex series of calls and perform an aerial, zigzagging display over suitable nesting habitat, with glides and wingbeats interspersed with wing-claps.

Locomotion: Branchers (i.e., flightless young that leave nest to reside in surrounding trees) that jump to ground hop to other trees, which they climb by pushing with feet and pulling with wings and bill. They move within canopy by jumping, hopping, and pulling with wings and bill. Adults probably spend very little time walking on ground. Hunting flight consists of long glides on level wings interrupted by deep wingbeats. Often pulls up and hovers over prey. Extremely agile, using quick twists and turns when flying through dense vegetation.

Communication and Perception: Long-eared Owls are silent most of the year, but during breeding season they draw on a complex repertoire analogous to a songbird's song. Males give a series of 10 to more than 200 whoo notes evenly spaced about 2–4 seconds apart. This deep and forceful utterance, akin to the sound made by blowing across the lip of a very large bottle, can be heard more than half a mile away.

Home Range: The home range size of long-eared owls is between 0.7 and 20.25 square kilometers. The home range size is probably very different for different pairs and changes between winter and summer.

Degree of Sociality: Communal winter roosts occasionally contain Short-eared Owls. Often roosts communally in nonbreeding season, perching < 1 m apart and 0.5-5 m above ground. Roosts form from Jun to Oct and disband in Feb or Mar. Typical roost contains 2-20 birds, but up to 100 have been reported.

Level of Aggression: Generally tolerant of conspecifics. No reports of physical contact in agonistic situations. Threat displays often directed at human intruders and presumably at potential natural predators. Crouches on perch with head lowered, wings drooped, and feathers ruffled. Threat displays accompanied by various alarm calls. Sometimes sways from side to side and commonly spreads wings over back. Spread-wing posture adopted by adults and young.

**Migration:** Winters throughout breeding range, but some individuals migrate long distances. Birds banded in the northern US and southern Canada have been recovered in Mexico. Normally migrates only at night.

**Predators:**

**Predators:** Northern Goshawk, Eagle Owls, Common Buzzard, Peregrine Falcons, Red Kite, Ural, Tawny Owls, Great Horned Owls, Barred Owls, Golden Eagles, Red-tailed Hawks, Raccoons, Porcupines, Cooper's Hawks, Red-tailed Hawk, Red-shouldered Hawk, Accipiters, Bull Snake, American Crows, Black-billed Magpie.

**Anti-Predator Defenses:** Well-camouflaged female allows close approach, seldom flushing from nest until humans are within 2 m. In 2 cases, incubating female remained on nest even after being touched. Response to humans at nest varies among individual owls and with stage of nesting. Nest defense generally weakest during incubation, strongest when young 2-6 wk old. At hatching and during brooding, adults alternately circle and perch while bill-snapping and uttering variety of alarm calls. May also perform injury-feigning and spread-wing displays from ground or perch. Adults from several close nests may simultaneously perform nest-defense displays near same nest.

**Diet and Nutrition:**

**Adult Diet:** Long-eared Owls eat mostly small mammals, including voles, many kinds of mice, kangaroo rats, shrews, pocket gophers, and young rats or rabbits. They hunt over open ground or below the canopy in sparsely forested areas. Prey items usually weigh up to about 3.5 ounces, often less than 2 ounces. They also sometimes eat small birds, capturing them on the ground or (in the case of roosting birds) from low vegetation. Rarely, Long-eared Owls eat moles, bats, weasels, chipmunks, ground and tree squirrels, snakes, and lizards.

**Juvenile Diet:** ^^^^^^

**Special Adaptations for Getting Prey:** Typically hunts on wing over open ground, coursing back and forth 0.5–2 m above ground. Kills small mammals by biting back of skull. Often swallows prey whole; may eviscerate rodents and leave entrails uneaten. Can capture mice in complete darkness, so prey probably often located by acoustical cues. Adaptations for silent flight well developed, including comblike fringe on leading edge of outer 2 primaries; soft, hairlike fringe on trailing edge of remiges; and downy surface on dorsal side of remiges.

**Reproduction:**

**Mode of Reproduction:** Monogamous

**Mating System:** Monogamy the rule, but polygyny reported twice in Europe. Given tendency to nest in colonies, parentage studies are needed.

**Mating Season:** February to July

**Courtship:** Male courtship involves advertising song and display flight. Aerial display is zigzag flight around and through nest grove using deep wingbeats interspersed with glides and wing-claps. Male advertising song may coincide with female nest call.

**Territoriality:** Does not seem to defend space outside immediate vicinity of nest. Adults from different nests may hunt same fields. May nest in loose colonies, with closest nests only 14 m apart. No evidence that hunting areas are defended around communal roosts.

**Mating:** After aerial and/or vocal display, male perches and begins swaying while raising and lowering wings. Female responds by crouching on branch or ground with wings drooped. Male then flies to female (or vice versa) and mounts, both birds bending forward with wings extended. Copulation lasts about 3 s. Pair may preen one another about head immediately before and after copulation.

**Nesting:** Long-eared Owls typically use stick nests abandoned by other bird species. Less often, they raise their young in cavities in trees or cliffs, in abandoned squirrel nests, or on the ground. Long-eared Owls in Oregon nest have made nests of dwarf mistletoe "brooms"—dense branch profusions that form in response to the mistletoe infection. In Arizona, these owls sometimes nest in crooks of saguaro cactus. Long-eared Owls apparently do no nest-building themselves. Instead, they usually appropriate stick nests built in trees by other bird species—commonly Black-billed Magpies, American Crows, Common Ravens, and various hawks. Nest cups average about 2.5 inches deep and 8.5 inches in diameter.

**Egg-Laying:** Clutch Size: 2-10 eggs Egg Length: 1.5-1.7 in (3.8-4.4 cm) Egg Width: 1.2-1.4 in (3-3.5 cm) Incubation Period: 25-30 days Egg Description: White.

**Hatching and Incubation/Gestation:** Helpless, eyes closed, covered with white down.

**Development:** Young semialtricial and nidicolous, hatching with eyes closed and covered with white protoptile down. Mean body mass at hatching 17.4 g; egg tooth disappears 5–7 d after hatching.

**Parental Care:** Brooding by female only, from hatching until young at least 2 wk old. Female attends nest during day until young branch. Male provides food for female throughout brood-rearing. Prey stockpiled at nest shortly before first young hatches. Female begins hunting for and provisioning young during second half of nestling period. When young are small,

female feeds them small bits of food; toward end of nestling period, young swallow prey whole. No evidence that food types brought to nest are different from those consumed at other times of year.

Lifespan: Up to 12 years, but some online sources say “The oldest wild long-eared owl lived 27 years and 9 months.”

**Conservation:**

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Long-eared Owls are fairly common, but their numbers fluctuate from year to year and their population trends are difficult to determine because of their secretive nature and tendency to move nomadically. Populations may be on the decline. Partners in Flight estimates a global breeding population of 50,000, with 18% in Canada, 18% in the U.S., and 3% in Mexico. The species rates a 13 out of 20 on the Continental Concern Score. Long-eared Owl are on the 2016 State of North America's Birds' Watch List, which lists bird species that are most at risk of extinction without significant conservation actions to reverse declines and reduce threats. Long-eared Owl populations need both grassland and wooded areas; they are vulnerable to the loss of riparian woodlands and isolated tree groves, especially in the arid West.

Conservation Efforts: ^^^^

**Extra Facts:**

1. The hoot of the male Long-eared Owl can sometimes be heard up to 1 kilometer (0.7 mi) away.
2. Like other owls, the Long-eared has a body adapted for silent flight and precision hunting. Flight feathers with fringed edges and downy surfaces mute the sound of the owl's passage through air. The owls gain incredible hearing from their asymmetrically placed ear openings and large, sound-catching facial disks.
3. In 1994, a researcher discovered a nesting Cooper's Hawk incubating two Long-eared Owl eggs along with three of its own. The hawk had probably usurped the nest from the owl. Another researcher documented three cases of Long-eared Owls appropriating nests that had been recently built by American Crows.
4. Long-eared Owls swallow their prey whole and then regurgitate the indigestible parts in pellets, usually one per day. If you find these pellets they're fascinating to pick through, full of tiny animal bones and fur. Some biologists collect these pellets and use them to learn about owl diets.
5. In addition to the North American and Eurasian populations, isolated groups of Long-eared Owls occur in North and East Africa, the Azores, and the Canary Islands. While this owl's biology has been extensively studied in the U.S. and Europe, little is known about it in other parts of its range.
6. The oldest Long-eared Owl on record was at least 12 years, 1 month old. It had been banded in New York and was later found in Ontario, Canada.

**Notable Species:**

1. *A. o. otus* (Linnaeus, 1758) – very large range extending across northern Eurasia as well as Mediterranean islands, northwestern Africa, the Middle East and northern Pakistan, with isolated populations in the Azores and east-central China
2. *A. o. canariensis* Madarasz, 1901 – the Canary Islands
3. *A. o. tuftsi* Godfrey, 1948 – western North America from Canada to Mexico
4. *A. o. wilsonianus* (Lesson, 1830) – eastern North America from Canada to Oklahoma and Virginia