



Owls



Note: Outline information derived from Warner Shedd's book: "Owls Aren't Wise and Bats Aren't Blind".

Order Strigiformes

- ◆ includes 220-225 extant (still existing) species of owls
- ◆ Most are solitary and nocturnal (exception: burrowing owl)
- ◆ Hunt small mammals, insects, other birds, some hunt fish
- ◆ Strigiformes are found throughout the Earth except Antarctica, and most of Greenland, some islands...

Parliament: the term for a group of owls

Two families:

1. Strigidae (typical owls)

2. Tytonidae (barn owls)

Description of owls:

- ◆ Large, forward-facing eyes and ear-holes.
- ◆ Hawk-like beak
- ◆ Flat face
- ◆ Usually a facial disc or circle of feathers around each eye.
- ◆ Binocular (forward vision) vision: eyes fixed in sockets so they must turn their entire head to change views.
- ◆ Far-sited (can see far distances but not anything within a few inches of their eyes. Far vision, esp. in low light, is exceptional due to the higher concentration of rods (light-absorbing part of the eye) in their eyes that are essential for seeing under low light conditions. This allows them to have 100% more sensitivity to light than humans. They also have three eyelids! -A lower eyelid, an upper eyelid and a transparent eyelid that moves horizontally across the eye that helps to moisten, clean and protect the eye.
- ◆ Prey can be felt with filoplumes, small hair-like feathers on back of beak and feet that act as feelers.

Myths:

Owls can turn their head completely around. Owls **cannot** turn their heads completely backwards. They can turn their head 135 degrees in either direction = 270-degree field of view. In both birds and mammals, the first vertebra below the skull is called the *atlas* because, as Atlas supported the globe, it holds up the skull. However, mammals have an atlas with two cups that fit against two projections on the skull, severely limiting our ability to turn the head to 180 degrees. Birds have a single cup and skull projection that facilitates greater rotation of the head. Try having a blinking contest with an owl and you may find yourself looking at the back of its head.

Owls are wise. "A wise old owl...". Owls and sinister reputations (see relationship with humans below). Anthropomorphism: Owls large eyes and facial feather discs look almost human so therefore must be intelligent like humans. An owls' true nature is not to wise but to be a superb predatory machine, with astonishing adaptations for taking their prey. Adaptations such as superb hearing and eyesight, silent flight, and a keen ability to locate and seize a variety of prey by night or day. So why do most hunt at night?

1. The majority of prey species are active at night (mice and other small rodents).
2. No nighttime competition from other raptors (hawks and eagles) for food. Night is therefore their ecological niche.

Owl Myths Continued:

Owls only make hooting sounds. Some species don't hoot at all and those that do make a wide variety of other sounds (demo).

An owl's ears are visible. What is widely regarded as "ears" on some owls are merely feather tufts that have nothing to do with hearing. The actual ears are only openings in the skull and are invisible. An owl's hearing can be considered even more astonishing than their eyesight. Despite their keen nocturnal vision, owls hunt at night more by sound than sight. Some species of owls (Allen Eckert, researcher) can hear a mouse squeak as much as a half-mile away! It can also locate its prey's position in three dimensions with uncanny precision. Laboratory experiments have demonstrated that sightless owls can catch mice by sound alone. The ear cavities in the skull are asymmetrical, so that one ear receives more sound from above, the other more from below. This ear placement permits the owl to locate prey in both the vertical and horizontal plane. Also, the facial disk aids this phenomenal hearing apparatus by capturing sound and reflecting it towards the ears = "Deer Ears" (cup your hands behind your ears to hear better).

Some owls can carry off many times their own weight. Barred owls only weigh 1.5 to 2lbs. Underneath all of those feathers there is remarkably little bird! Prefers to eat mice and voles. They will also prey on frogs, large insects, and occasionally squirrels and small birds. They occasionally seize prey as large as a rabbit, but favor smaller mammals. Great horned owls, the largest owls found commonly at Fox Island, average around 3.5 lbs. with a maximum of just over 5 lbs. The great horned owls regularly prey on rabbit, crow, weasels, opossums, muskrat, and since they cannot smell, regularly eat skunk! Wandering house cats beware! They cannot, however, pick up a medium-large dog or small toddler! The snowy owl is the heaviest North American owl at up to 6lbs. They may migrate south in winter from the Arctic Tundra (where they prefer to eat lemmings). If they migrate to Indiana, they will eat mice, Norway rats, pigeons, rabbits, dead fish and anything else of suitable size.

Smallest Owl = Elf Owl. Weighs 1.1oz. and 5.3 inches tall. Pygmy owls are only scarcely larger.

Largest Owls = The eagle owls: Eurasian Eagle Owl and Blakiston's Fish Owl. Weigh 4.5kg or 10lbs. and 28.4 inches tall, wingspan of 6.6 ft. or 2 meters.

Owl Sounds:

Wide range of calls that aide them in finding mates or announcing territories. The facial disc or circle of feathers around each eye funnels the sound of prey to their asymmetrical ears. Why asymmetrical? Allows for better directional hearing (extends their field of hearing).

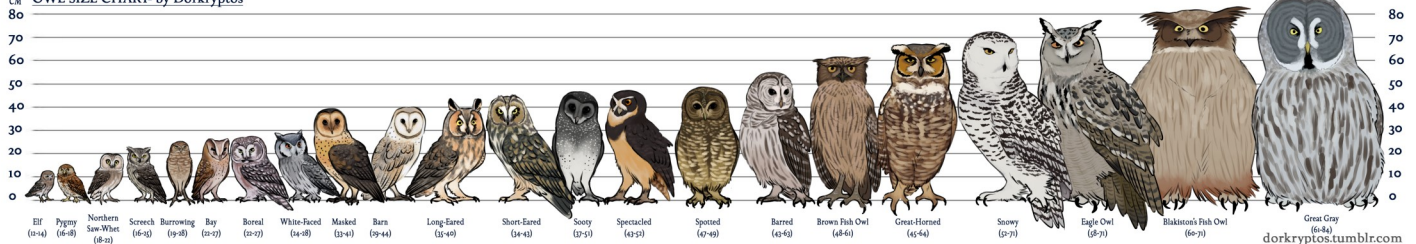
Owl eggs:

Usually white and almost spherical. Range in number from a few to a dozen, depending on species. Eggs are laid at intervals of 1-3 days (not all at once). They also do not hatch at the same time, allowing for a wide variation in the size of sibling nestlings.

Owl nests:

Owls are nature's nest recyclers! Owls do not construct their own nests. They look for sheltered nesting sites inside tree cavities, barns, etc... or use an abandoned nest (built by other bird or animal species such as red-tailed hawks, pileated woodpecker cavities, squirrel nests, etc...) Some use underground burrows dug out by other animals or in caves. Snowy owls will simply scrape out an unlined hollow on a hummock or other high point and begin to lay eggs.

OWL SIZE CHART by Dorkryptos



Elf Screech Barn Short Eared Barred Great Horned Snowy Great Gray

Behavior:

Nocturnal: actively hunting for prey under cover of darkness. Several species of owls are **crepuscular** (active during twilight hrs. of dawn/dusk). Example: pygmy owl. A few owls are active during the day (**diurnal**), such as the burrowing and the short-eared owls.

Hunting strategy: depends on stealth and surprise. Two adaptations for this are: 1. dull coloration of owl feathers = camouflage! 2. Silent flight rendered from the serrated edges on the leading edge of the owls' wing feathers or remiges. This muffles the wingbeats. Fish-eating owls lack this adaptation as silent flight does not give them an advantage over sneaking up on fish.

Eating: sharp beak and talons allow it to kill its prey before swallowing it whole (unless it is too big). Scientists study owl pellets or regurgitated indigestible parts of their prey, such as bones, scales and fur, to understand the diets of individual species of owls.

Evolution and Nomenclature:

Each of these two families (Strigidae and Tytonidae) are classified as either barn-owls (Tytonidae) or typical owls (Strigidae). Some debate exists as to whether owls should be grouped in the same Order as nightjars and their allies (whip-poor-will, common nighthawk, and Chuck-will's-widow in Indiana) as owls are more closely related to them than to the diurnal predators in the order Falconiformes (vultures, kites, eagles, hawks, and falcons).

For extinct fossil species, Families Ogygoptynidae, Palaeoglaucidae, Protostrigidae, and Sophiornithidae. Some extinct owls also belong to the Families Strigidae and Tytonidae.

Owl species classifications (scientific categories)

Kingdom	→	Animalia
Phylum	→	Chordata (vertebrates)
Class	→	Aves (birds)
Subclass	→	Neornithes
Infraclass	→	Neognathae
Superorder	→	Neoaves
Order	→	Strigiformes
Family	→	Strigidae or Tytonidae

Indiana Owls:

Strigidae: (typical owls)

- Eastern Screech Owl, Year-round
- Great Horned Owl, Year-round
- Snowy Owl, **Rare**, through-out IN
- Burrowing Owl, **Rare**, NW IN
- Barred Owl, Year-round
- Long-eared Owl, Winter
- Short-eared Owl-State Endangered, Winter
- Northern Saw-whet Owl, Winter
- Great Gray Owl, **Rare**, NW IN (more west)

Tytonidae:

- Barn Owl– State Endangered, **Rare**, N.IN



Barn Owl

Owl Conservation:

- ◆ Threatened by loss of habitat due to humans or climate change.
- ◆ Hunted to supplement diets in tropical countries.
- ◆ Sale of bushmeat has risen sharply in recent decades creating a “silent forest”.
- ◆ Logging roads create human access and intrusion into isolated species territories.
- ◆ Automatic weapons have made shooting of wildlife more efficient.
- ◆ Owl poaching may be on the rise in Malaysia, according to TRAFFIC, to be sold as dead, plucked wild meat.

Relationship with humans:

- ◆ Used in falconry for years.
- ◆ Owls have started to inhabit urban areas (following food???)
- ◆ Owls have been associated with death and misfortune, likely due to their nocturnal activity and common screeching call.
- ◆ Owls have also been associated with wisdom and prosperity.
- ◆ Frequently associated as companion animals for goddesses (example: Hindu Mythology-consider the barn owl to be the vehicle of Goddess Lakshmi or the Goddess of Wealth, and thus is considered lucky if a barn owl resides near your house). Greek Goddess Athena was commonly depicted with an owl.
- ◆ Western symbol of wisdom (used as logo frequently with universities and libraries)
- ◆ *Walden* by Henry David Thoreau wrote: "I rejoice that there are owls. Let them do the idiotic and maniacal hooting for men. It is a sound admirably suited to swamps and twilight woods which no day illustrates, suggesting a vast and underdeveloped nature which men have not recognized. They represent the stark twilight and unsatisfied thoughts which all have."
- ◆ Used as a natural form of pest control. Placing a new owl box on a property can control rodent populations. **One family of barn owls can consume more than 3,000 rodents in a nesting season while maintaining a naturally balanced food chain. Problem:** Owl are also known to become victims of secondary poisoning by eating mice or rats that have been poisoned with rodenticides.
- ◆ Ancient Egyptians used the owl for their hieroglyph for the sound *m*. They would often draw the owl with its leg broken to keep it from coming to life.
- ◆ The Kikuyu of Kenya, Africa believed that owls were harbingers of death. If one saw an owl or heard its call, this meant that someone was going to die. This belief is widespread even today.
- ◆ In America the owls are often used in connection with art and ritual. The U.S. regulates the possession of owl feathers as religious objects. Regulation is found in The Migratory Bird Treaty Act of 1918 and Title 50 Part 22 Code of Federal Regulations.
- ◆ The Hopi from the Uto-Aztec tribe, have taboos surrounding owls, which are associated with sorcery and other evils. The Aztec and Maya considered the owl a symbol of death and destruction. In fact, the Aztec god of death (Mictlantecuhtli), was often depicted with owls.
- ◆ In Mexico, there is an old saying still in use: *Cuando eltecolote canta, el indio muere* ("When the owl cries/sings, the Indian dies").

