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Asio flammeus

(short-eared owl)

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2007/03/04 08:25:54.410 US/Eastern

By *Nathan Doan*

Geographic Range

Short-eared owls are one of the world's most widely distributed owls. They inhabit all of North and South America; this area includes the coast of the Arctic Ocean to Patagonia. Short-eared owls can also be found on every continent except Australia and Antarctica. (Granlund et al., 1994; Welty, 1975; Pearson, 1936)

Biogeographic Regions:

nearctic [🔍](#) (native [🔍](#)); palearctic [🔍](#) (native [🔍](#)); oriental [🔍](#) (native [🔍](#)); ethiopian [🔍](#) (native [🔍](#)); neotropical [🔍](#) (native [🔍](#)).

Other Geographic Terms:

cosmopolitan [🔍](#).

Habitat

One of the world's most widely distributed owls, *Asio flammeus* can be found throughout much of North America and Eurasia. These owls prefer to live in marshes and bogs; they inhabit open, treeless areas. Their hunting and nesting habits make them well suited to relatively flat land. This species is migratory but uses relatively similar habitats during summer and winter. Short-eared owls have specialized eating habits and tend to stay where they can find ample food. They will leave an area to find preferred prey rather than eat other animals. Nests are usually located on dry sites and in open country supporting small mammals such as voles and lemmings.

(Martin, 1990; Sparks and Soper, 1989; Pearson, 1936)

These animals are found in the following types of habitat:

temperate [🔍](#); terrestrial [🔍](#).

Terrestrial Biomes:

Kingdom: [Animalia](#)
 Phylum: [Chordata](#)
 Subphylum: [Vertebrata](#)
 Class: [Aves](#)
 Order: [Strigiformes](#)
 Family: [Strigidae](#)
 Genus: [Asio](#)
 Species: ***Asio flammeus***

savanna or grassland ; forest .

Wetlands: marsh , swamp , bog .

Other:
agricultural .

Physical Description

Short-eared owls are 37 centimeters long and have a wing length of 29 centimeters. Males and females are not easily distinguishable from each other externally, but females are usually slightly larger. Their feathers are yellow-white and dark brown; parts of the head and especially the legs and flanks are white. Individuals vary considerably in colors. The right and left ears occupy different vertical positions on the sides of their head, but the size and shape of the two ears are the same. (Holt and Leasure, 1993; Martin, 1990; Pearson, 1936)

Some key physical features:

endothermic ; homoiothermic; bilateral symmetry .

Sexual dimorphism:  female larger.

Reproduction

The difficulty of owl reproduction lies in their usually individualistic habits; a great amount of the effort goes into learning mutual recognition as mating partners rather than prey or predator. They even have some difficulty identifying the gender of prospective mates from a distance. Male short-eared owls use an aerial display that includes wing clapping to alert the female of his presence and sex. Males also may offer food to females; this prevents females from considering the male as food.

Pair formation begins in mid-February and continues through June. Breeding usually begins in April. Short-eared owls are reported to also raise a second brood although this is not confirmed. To attract females, males perform sky dancing displays, day or night. The sky dance consists of song accompanied by aerial acrobatics. Short-eared owls are generally thought to be monogamous; however, the pair bond probably does not last beyond the breeding season. (Holt and Leasure, 1993)

Mating systems:

monogamous .

After sufficient time and caution has been taken, the male mounts the female. One observer reported that copulation took 4 seconds, after which the male and female flew in different directions. Breeding usually takes place while in their summer habitat, but they may breed in their wintering area if food is plentiful. Short-eared owls nest on the ground in protection provided by tall grasses; they often return to the same nests. Each nest contains 4 to 7 white, unspotted eggs. The eggs have an average incubation of 21 days. Nestlings have been known to prey on their smaller nest mates. The young usually disperse from the nest when they are about 14 to 17 days old. They are independent 1 to 2 weeks after fledging. (Holt and Leasure, 1993; Sparks and Soper, 1989; Pearson, 1936; Welty, 1975)

Mass

206 to 475 g; avg. 347 g
(7.25 to 16.72 oz; avg.
12.21 oz)

Length

340 to 423 mm; avg.
377.50 mm
(13.39 to 16.65 in; avg.
14.86 in)

Wingspan

279 to 311 mm; avg.
296.40 mm
(10.98 to 12.24 in; avg.
11.67 in)

Basal Metabolic Rate

313.38 cm³ oxygen/hour
(average)

Breeding interval

Short-eared owls typically breed once yearly in the spring. Second broods have been reported but data is still needed to confirm this.

Breeding season

Short-eared owls typically breed late March to June, but mostly in April. In the southern hemisphere, breeding begins in September.

Eggs per season

1 to 11; avg. 5.60

Time to hatching

21 to 37 days

Time to fledging

24 to 36 days

Time to independence

31 to 43 minutes

Age at sexual or reproductive maturity (female)

1 years (average)

Age at sexual or reproductive maturity (male)

1 years (average)

Key reproductive features:

iteroparous; seasonal breeding; gonochoric/gonochoristic/dioecious (sexes separate); sexual; fertilization (internal); oviparous.

Only females brood and feed nestlings, while male provide food and defend the nest with distraction displays and vocalizations. Females protect nestlings from some weather conditions by brooding when young, and mantling when larger. When they are born young are semi-altricial, which means that they are relatively immobile and helpless when they hatch, but are down-covered rather than naked. (Holt and Leasure, 1993)

Parental investment:

altricial; male parental care; female parental care.

Lifespan/Longevity

Records are limited, but the longevity record for a wild short-eared owl is 4 yrs, 2 months. Causes of mortality include occasionally being hit by cars and airplanes, or being shot or trapped.

Longest known lifespan in wild
4.16 years (high)

Behavior

In contrast with many other owls, short-eared owls begin foraging during daylight or early evening. These owls may continue to be active into the night, but usually cease activity after nightfall. They have a tendency to form communal roosts during the winter months. In different times of the year, they may live alone or together, but they always hunt alone.

Territory Size
0.18 to 2.42 km²

After breeding, a mated pair remains together for the current breeding season. These owls defend their territories during the breeding season through skirmishes and chases; the size of this area depends on food availability. (Holt and Leasure, 1993; Martin, 1990; Sparks and Soper, 1989)

The individual spacing of short-eared owls is poorly known, but owls in communal winter and post-breeding season often roost within 1 meter of each other. There is a wide range in the size of breeding territories. Short-eared owls are thought to be highly migratory in the northern part of their range, above around 50 degrees north latitude. Additionally, data indicates seasonal north/south migration and west/southwest movements for some individuals at mid-latitudes. Nomadism in search of food, migration, and juvenile dispersal may be confused.

Home Range

Breeding territories vary widely in size, depending on the density of resources in the area.

Key behaviors:

flies; nocturnal; crepuscular; motile; nomadic; migratory; solitary; territorial.

Communication and Perception

Short-eared owl nestlings give high pitched calls from within the egg, and from hatching until they are about 7 days old. These are probably begging calls or perhaps expressing discomfort. The vocal pitch changes at about 7 days and becomes lower. Adults sometimes direct calls at human territorial intruders. Both males and females bark, scream, whine, and give broken wing distraction displays to defend the nest and young from potential threats. In late February and March, territorial songs are sung. (Holt and Leasure, 1993)

Short-eared owls have keen vision, especially in low light. They also use their excellent sense of hearing to help locate and capture prey.

Communicates with:

visual; acoustic.

Perception channels:

visual ; tactile ; acoustic ; chemical 

Food Habits

Short-eared owls prey primarily on voles, mice, and other small mammals. Their strong talons and sharp beak make them well adapted to 'picking up' their food while in flight. These owls may utilize a 'perch-and-pounce' hunting method if there is an adequate perching point available. Otherwise, they hunt by flying two meters above the ground in a regular, slow manner. Short-eared owls rely mainly on auditory clues; using these alone, they can catch prey that is under continuous grass cover. (Martin, 1990 and Pearson, 1936)

Primary Diet:

carnivore  (eats terrestrial vertebrates).

Animal Foods:

birds; mammals.

Predation

Short-eared owls are vulnerable primarily to mammalian predation due to the type of open habitat they occupy and their ground nesting habit. Short-eared owls fly fast and directly at an intruder, pulling up and presenting their talons at the last moment. They often use thermal updrafts during skirmishes and rise vertically, chasing and interacting with intruders. They may scream, whine, and distract predators on eggs or nestlings by pretending to have a broken wing.

Ecosystem Roles

Short-eared owls are important predators on populations of many different types of small mammals and birds.

Economic Importance for Humans: Negative

There are no known negative effects of short-eared owls on humans.

Economic Importance for Humans: Positive

Short-eared owls help manage animals that humans consider to be pests; a large portion of their diet is small rodents, such as mice and voles. In areas where small mammals can reach plague numbers, short-eared owls capitalize on the opportunity and settle in large numbers. (Sparks and Soper, 1989 and Pearson, 1936)

Ways that people benefit from these animals:

controls pest population.

Conservation Status

Due to their wide distribution, short-eared owls are not a federally endangered species; however, in the Great Lakes region of the United States, conditions are worse. This species is threatened by the diminishing area of marshes, bogs, and open grasslands. Nesting habits and nomadism make this species particularly vulnerable to habitat loss during any season. Due to these factors, short-eared owls are endangered in Michigan, Illinois, and Pennsylvania. They are also threatened in Minnesota and of special concern in Indiana and Ohio. They are among the rarest nesting owls in Michigan. There are no major efforts to help them recover in these areas. (Granlund et al., 1994)

Contributors

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Known predators

- [goshawk](#)
- [peregrine falcon](#)
- [gyrfalcon](#)
- [red-tailed hawk](#)
- [great horned owl](#)
- [snowy owl](#)
- [bald eagle](#)
- [northern harrier](#)
- [common raven](#)
- [herring gull](#)

IUCN Red List: [\[link\]](#):
Least concern.

US Migratory Bird Act: [\[link\]](#):
Protected.

US Federal List: [\[link\]](#):
No special status.

CITES: [\[link\]](#):
Appendix II.

References

- Granlund, J., G.A. McPeck, and R.J. Adams. 1994. *The Birds of Michigan*. Indiana University Press, Bloomington.
- Holt, D.W. 1993. *The Birds of North America*. The American Ornithologists' Union and The Academy of Natural Sciences of Philadelphia, Philadelphia.
- Martin, G. 1990. *Birds by Night*. T& AD Poyser, London.
- Pearson, T. G., ed. 1936. *Birds of America*. Garden City Books, Garden City.
- Sparks, J. and T. Soper. 1989. *Owls: Their Natural and Unnatural History*. Facts on File, New York.
- Wety, J.C. 1975. *The Life of Birds*. Second Edition. W.B. Saunder Company, Philadelphia.

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