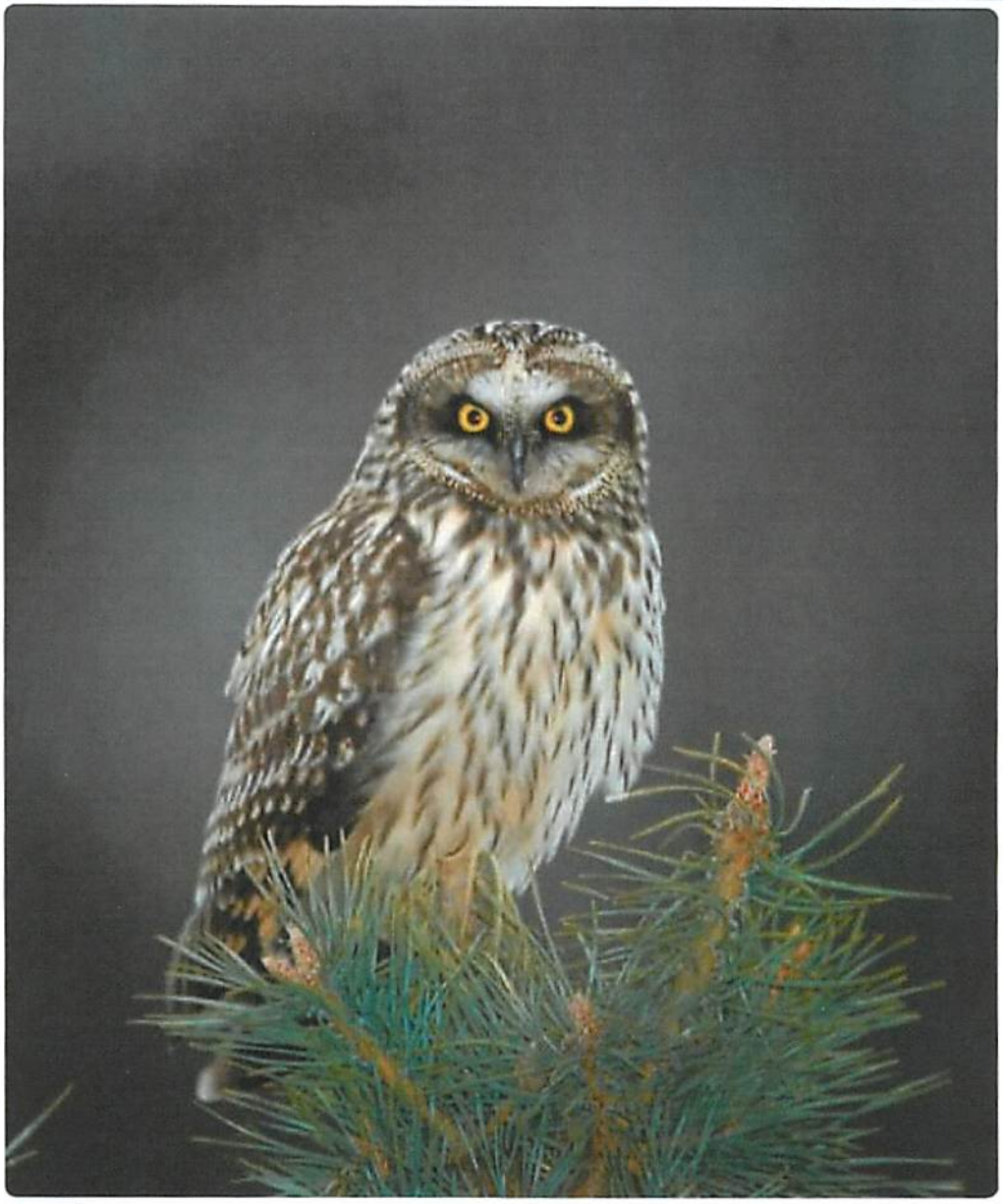
Short-eared Owl *Asio flammeus* (Pontoppidan, 1763)



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Short-eared owl (Asio flammeus)

A.J. Hand

Class

Aves (Birds)

Family

Strigidae (Typical Owls)

State Protection

Endangered

Listed as Endangered by New York State: in imminent danger of extirpation in New York. For animals, taking, importation, transportation, or possession is prohibited, except under license or permit. For plants, removal or damage without the consent of the landowner is prohibited.

Federal Protection

Migratory Bird Treaty Act

The Migratory Bird Treaty Act implements various treaties and conventions between the U. S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under this Act, taking, killing, or possessing migratory birds, including nests or eggs, is unlawful unless specifically permitted by other regulations.

State Conservation Status Rank

S2

Imperiled in New York - Very vulnerable to disappearing from New York due to rarity or other factors; typically 6 to 20 populations or locations in New York, very few individuals, very restricted range, few remaining acres (or miles of stream), and/or steep declines.

Global Conservation Status Rank

G5

Secure globally - Common in the world; widespread and abundant (but may be rare in some parts of its range).

Contents

Summary

Did you know?

The short-eared owl is unique within its family (Strigidae) in the way it builds a ground nest. The female makes a small scrape in the ground with her body and lines it with nearby material (NatureServe 2003).

State Ranking Justification

The Short-eared Owl population is declining in New York, as it is throughout much its range. The second Breeding Bird Atlas reported probable or confirmed breeding in 13 blocks (McGowan and Corwin 2008). In comparison, the first Breeding Bird Atlas (1980-1985) reported probable or confirmed breeding in 14 blocks (Andrle and Carroll 1988). The number of reported possible breeding blocks declined from 22 during the first Atlas to 11 during the second Atlas. It appears that Long Island has lost nearly all breeding locations for Short-eared Owls with one block reported during the second Atlas compared to nine during the first Atlas. Breeding may no longer occur in the lower Hudson Valley as well as a number of other historically known breeding sites in the state. Wintering Short-eared Owl populations are variable, depending on rodent populations and snow cover.

Short-term Trends

Currently, it appears that populations are continuing to decline, although it may be difficult to determine trends due to the lack of precise location data from historical records (Schneider 2003). During the first Breeding Bird Atlas (1980-1985), there were five confirmed breeding records, nine probable breeding records, and 22 possible breeding records (Andrle and Carroll 1988). Data from the second Breeding Bird Atlas seems to indicate a decline with four blocks with confirmed breeding, nine blocks with probable breeding, and 11 blocks with possible breeding (McGowan and Corwin 2008). During the first Atlas, Short-eared Owls were recorded in nine blocks on Long Island, compared to one block during the second Atlas. Breeding may no longer occur in the lower Hudson Valley as well as a number of other historically known breeding sites in the state. Some records may be a single breeding event in an area with unusually high rodent populations. Overall, the distribution in New York is largely unchanged except for the reduction of reports on Long Island. Breeding Bird Survey data is too sparse in New York to determine trends. Wintering populations are variable depending on snow cover and rodent populations. It is difficult to determine winter population trends as few sites are surveyed on a regular basis.

Long-term Trends

During the early 20th century, Eaton (1914) reported short-eared owls as one of our most common owls outnumbering all other owls found in lowlands and marshes, especially in the winter. Approximately 60 years later, Bull (1974) described short-eared owl populations as declining with localized breeding reported.

Conservation and Management

Threats

The most significant threat to short-eared owls is habitat loss due to development, reforestation, wetland loss, and changes in farming practices such as conversion of hayfields to row crops or more frequent mowing of hayfields (Post 2004). As a ground-nesting bird, eggs and unfledged young are at risk of depredation by mammalian predators such as foxes, raccoons, and skunks. There is also increased risk of depredation by domestic and feral cats and dogs in areas with some development. A limiting factor for short-eared owls is their dependency on microtine rodent populations. Poisoning may be a threat in areas where humans are attempting to control rodent populations. As with many raptors, short-eared owls have been subjected to shooting by humans.

Conservation Strategies and Management Practices

Large areas of open habitat in breeding and wintering areas need to be maintained in order to ensure the persistence of this species in New York. Potential management practices include burning, mowing, and plowing of fields after the breeding season. Use Landowner Incentive Program funds to conserve privately-owned grasslands. Coordinate conservation efforts with other agencies and organizations and initiate an outreach program (Post 2004).

Research Needs

Population monitoring standards need to be developed and implemented to better estimate the local population status (distribution, abundance, and trends) during the breeding and non-breeding seasons. Current methods, such as flushing sitting females or roadside counts, are either labor and time intensive or result in under-estimating population sizes. More could be learned about nocturnal movements, migration patterns, adult and juvenile mortality, and the relationship between rodent abundance and territory size. Studies are needed on the effects of habitat management (i.e. burning, mowing, and plowing) on grassland birds (Post 2004) as well as small mammal populations.

Habitat

Habitat

Open areas such as grasslands (hayfields, fallow farm lands, and pastures) and fresh and salt water marshes are typically used during the Short-eared Owl breeding season in New York. They tend to prefer habitats with some water which may be due to the habitat preference of voles, their primary prey. Day roosts are typically on the ground, but also may be under low shrubs, in conifers, or low open perches. During the winter months, Short-eared Owls use habitats similar to the those of the breeding season. They also can be found at old dumps where rodent populations may be high. They may move further south during winters with deep snow cover.

Associated Ecological Communities

- Cropland/field crops ℹ

  An agricultural field planted in field crops such as alfalfa, wheat, timothy, and oats. This community includes hayfields that are rotated to pasture.

- Dwarf shrub bog* (guide(/dwarf-shrub-bog/)) ℹ

  A wetland usually fed by rainwater or mineral-poor groundwater and dominated by short, evergreen shrubs and peat mosses. The surface of the peatland is usually hummocky, with shrubs more common on the hummocks and peat moss throughout. The water in the bog is usually nutrient-poor and acidic. * probable association but not confirmed.

- High salt marsh (guide(/high-salt-marsh/)) ℹ

  A coastal marsh community that occurs in sheltered areas of the seacoast, in a zone extending from mean high tide up to the limit of spring tides. It is periodically flooded by spring tides and flood tides. High salt marshes typically consist of a mosaic of patches that are mostly dominated by a single graminoid species.

- Low salt marsh (guide(/low-salt-marsh/))

  A coastal marsh community that occurs in sheltered areas of the seacoast, in a zone extending from mean high tide down to mean sea level or to about 2 m (6 ft) below mean high tide. It is regularly flooded by semidiurnal tides. The mean tidal range of low salt marshes on Long Island is about 80 cm, and they often form in basins with a depth of 1.6 m or greater.

- Pastureland

  Agricultural land permanently maintained (or recently abandoned) as a pasture area for livestock.

- Salt panne* (guide(/salt-panne/))

  A shallow depression in a salt marsh where the marsh is poorly drained. Pannes occur in both low and high salt marshes. Pannes in low salt marshes usually lack vegetation, and the substrate is a soft, silty mud. Pannes in a high salt marsh are irregularly flooded by spring tides or flood tides, but the water does not drain into tidal creeks. After a panne has been flooded the standing water evaporates and the salinity of the soil water is raised well above the salinity of sea-water. * probable association but not confirmed.

- Successional blueberry heath*

  A shrubland dominated by ericaceous (heath-like) shrubs that occurs on sites with acidic soils that have been cleared (for logging, farming, etc.) or otherwise disturbed. * probable association but not confirmed.

- Successional fern meadow*

  A meadow dominated by ferns that occurs on sites that have been cleared (for logging, farming, etc.) or otherwise disturbed. * probable association but not confirmed.

- Successional northern sandplain grassland (guide(/successional-northern-sandplain-grassland/))

  A meadow community that occurs on open sandplains that have been cleared and plowed (for farming or development), and then abandoned. This community is usually dominated by low, dry turf of sedges and grasses less than 30 cm (12 inches) tall, and include patches of open sand and patches of soil covered with mosses and lichens.

- Successional old field

  A meadow dominated by forbs and grasses that occurs on sites that have been cleared *and plowed* (for farming or development), and then abandoned or only occasionally mowed.

Associated Species

- Northern Harrier (*Circus hudsonius*) (guide(/northern-harrier/))

Range

New York State Distribution

New York is the southern edge of the Short-eared Owl breeding range with the exception of some scattered breeding records as far south as Virginia (New York State Department of Environmental Conservation 2003). The breeding range in the state is generally limited to the St. Lawrence and Lake Champlain valleys, the Great Lakes Plains, and marshes along the south shore of Long Island. Between the fall and spring, the number of Short-eared Owl observations increases as northern populations migrate south, possibly in search of food. Significant numbers of wintering owls are in the Finger Lakes and the Lake Ontario plains, especially in Jefferson County, at scattered locations in the Hudson Valley, and the south shore of Long Island.

Global Distribution

Breeding: In North America, Short-eared Owls are found from northern Alaska to northern Labrador, south to California, Utah, Colorado, Missouri, Illinois, Ohio, and Virginia. They are more numerous in western and central North America than in eastern North America. Breeding has been recorded in small numbers in every province and territory in Canada (NatureServe 2003). Currently, in the northeastern United States, nesting is known in Vermont, New York, Massachusetts, and Pennsylvania (Tate 1992). Breeding has also been documented in the Hawaiian Islands, Caroline Islands (Ponape), and Greater Antilles (Cuba, Hispaniola, Puerto Rico) (AOU 1983). In Eurasia, Short-eared Owls are found from Iceland, British Isles, Scandinavia, northern Russia, and northern Siberia south to southern Europe, Afghanistan, northern Mongolia, the northern Kurile Islands, and Kamchatka. Non-breeding: Outside of the breeding season, Short-eared Owls are more common from the southern parts of most of the Canadian provinces south to southern Baja California, southern Mexico, the Gulf Coast, and Florida. Short-eared Owls reside on all the main islands of Hawaii and can be found in the Greater Antilles, but are uncommon in Puerto Rico, including Isla Culebra. In the Old World, non-breeding birds are found from areas within the breeding range south to northwestern Africa, the Mediterranean region, Ceylon, southern China, and Japan (AOU 1983).

Best Places to See

- Point Peninsula (Winter) (Jefferson County)
- Gilgo Beach Marshes (Sping/Summer) (Suffolk County)
- Jones Beach/Tobay (Spring/Summer) (Nassau County)
- Fort Edward Grasslands (Winter) (Washington County)

Identification Comments

Identifying Characteristics

Short-eared Owls are a small to medium-sized owl. They are characterized by their barely visible ear tufts and a whitish facial disk with a dark area around bright yellow eyes. The back and upper wings are tawny brown to buff colored with some streaking. The ventral surface is much lighter with bold vertical streaking on the breast and a

pale belly that is lightly streaked. Wings are long with a buffy patch beyond the wrist. They have a distinct black carpal bar. There is a dark patch at the base of the primaries. Legs and feet are feathered. Sexes are similar. Generally, females are darker than males; young birds are darker than older birds. Juveniles have a dark facial disk that lightens with age. They have full adult plumage by October of the first year. Short-eared Owl flight is described as "moth or bat-like". Wing beats are unhurried and irregular. They fly low over grasslands or mashes. Females make a simple nest by creating a small depression in the ground and lining it with grass, leaves, twigs, or feathers. Eggs are white, short, elliptical, smooth, and non-glossy. Short-eared Owls are generally silent, but do occassionally vocalize. Males will make a muffled "poo, poo, poo" sound. Both sexes have an alarm call that is described as nasal barks and wheezy notes ("cheef, cheef, cheef" and "cheewaay"). Young owls have a food-begging call ("pssssip"). Both adults and young will clack their bills when annoyed or in defense. In flight, Short-eared Owls will clap their wings making the sound similar to that of a cracking whip.

Behavior

Short-eared Owls detect prey by coursing open areas while flying low to the ground. They may briefly hover over prey before taking it. At times, they hunt from a perch. Short-eared Owls were observed caching prey during the winter in Jefferson County (G.A. Smith, pers. Comm. cited in NatureServe 2003). There are three displays most commonly observed during the breeding season: wing-clapping, exaggerated wing-beats, and skirmishing. These behaviors are usually performed in territorial defense or courtship. Skirmishes can be aggressive in nature. The male Short-eared Owl courtship display is in flight and involves vocalization, a spiraling flight, and wing-clapping (NatureServe 2003).

Diet

Microtine rodents are the preferred prey. However, Short-eared Owl prey also includes other small mammals and sometimes birds. Young may also take insects (NatureServe 2003).

Best Time to See

During the breeding season, the best time to observe Short-eared Owls would be between March and April when courtship and territorial defense begin. There is an increased likelihood of observing birds during the fall and early winter while birds are migrating to their wintering grounds in the state. Short-eared Owls are found on their wintering grounds from early winter to late winter or early spring.

The time of year you would expect to find Short-eared Owl active and reproducing in New York.

Similar Species

- Northern Harrier (*Circus hudsonius*) (guide(/northern-harrier/))

  Northern Harriers have an owl-like facial disk which may cause some confusion when initially trying to distinguish them from Short-eared Owls. Short-eared Owls lack the distinctive white rump patch of Northern Harriers.