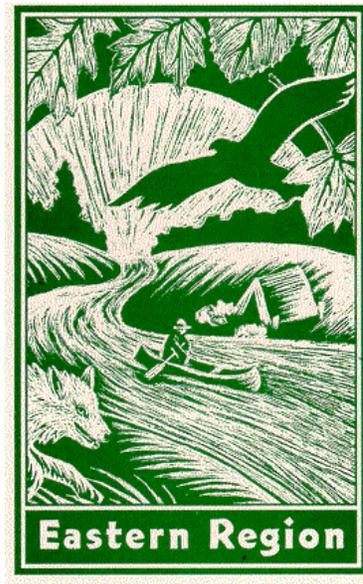


*Conservation Assessment*  
*For*  
*Short-Eared Owl (Asio flammeus)*



*USDA Forest Service, Eastern Region*  
2003

Prepared by:



*This Conservation Assessment was prepared to compile the published and unpublished information and serves as a Conservation Assessment for the Eastern Region of the Forest Service. It does not represent a management decision by the U.S. Forest Service. Though the best scientific information available was used and subject experts were consulted in preparation of this document, it is expected that new information will arise. In the spirit of continuous learning and adaptive management, if you have information that will assist in conserving the subject community, please contact the Eastern Region of the Forest Service - Threatened and Endangered Species Program at 310 Wisconsin Avenue, Suite 580 Milwaukee, Wisconsin 53203.*

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## NOMENCLATURE AND TAXONOMY

**Scientific Name:** *Asio flammeus*

**Common Name:** Short-eared Owl

**Family:** Strigidae

**Synonyms:**

**USFS Region 9 Status:** Sensitive

**USFWS Status:**

**Illinois Status:** Endangered

**Global And State Rank:** The Nature Conservancy (The Nature Conservancy 1999) ranks this species as G5/S1. This ranking means Short-eared Owls are globally widespread, but critically imperiled in Illinois.

### RANGE:

**Breeding:** Open habitats, excluding fores and some desert areas. From north Alaska, north Yukon, north Mackenzie, central Keewatin, south Baffin Islands, north Quebec, north Labrador, and Newfoundland south to eastern Aleutian Islands, south Alaska, central California, north Nevada, Utah, northeast Colorado, Kansas, Montana, south Illinois, north Indiana, north Ohio, Pennsylvania, New Jersey, and north Virginia. In the Greater Antilles, found on Cuba, Hispaniola, and Puerto Rico. Recently rediscovered nesting in Cuba. Shows patchy and irregular distribution in some areas. Can be nomadic and occur in suitable open country where prey species are abundant. In South America two mainland races: one in Colombia, Ecuador, Peru, and Venezuela; and the other in Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay (Holt and Leasure 1993). Figure 1 shows the distribution in lower forty-eight states based on breeding bird routes.

**Wintering:** Same as breeding range in some areas. From south Canada to south Baja California, Oaxaca, Puebla, Veracruz, the Gulf Coast, and south Florida. Accidental to Revillagigedo Island, Guatemala, Bahamas, Lesser Antilles, Bermuda, and Greenland. Given propensity to wander in search of food, can occur almost anywhere that suitable habitat and prey exist (Holt and Leasure 1993).

In **Illinois**, this species is currently known to breed in seven counties: DuPage, Jasper, Lee, Marion, McLean, Saline, and Vermillion (Illinois Natural Heritage Database 1999), see Figure 2.

### PHYSIOGRAPHIC DISTRIBUTION:

Short-eared Owls in Illinois are found in the Central Till Plains Section and the Central Dissected Till Plains Section of the Prairie Parkland Province and the Central Till Plains, Oak-Hickory Section and the Southwestern Great Lakes Morainal Section of the Eastern Broadleaf Forest Province (Keys et. al. 1995). Illinois has been divided up into Natural Divisions based on physiography, flora and fauna (Schwegman et. al. 1973). Short-eared Owls are found within the Grand Prairie Division, the Northeastern Morainal Division, and the Southern Till Plain Division.

## **HABITAT:**

Short-eared Owls require large, open grassland or wetland areas, such as native prairie, hayland, retired cropland, small-grain stubble, shrubsteppe, and wet-meadow zones of wetlands. Such areas need to be large with properly timed moderate disturbance. This species seems to prefer cool season over warm season grasses, based on observations from Prairie Ridge State Natural Area (Jim Herkert pers. com.). Local occurrence is unpredictable, because populations fluctuate yearly due to variation in small mammal populations. Given sufficient habitat and food supply, Short-eared Owls are able to colonize new areas (Dechant et. al. 1999). However, this species has a sporadic and nomadic nature, so actual colonization events are difficult to predict.

Short-eared Owls generally nest on the ground. Nests typically are built on dry uplands, but wetter lowlands, such as peat bogs and wetlands, are occasionally used. Nests may be fully concealed by dense cover, partially concealed by grasses and forbs, or poorly concealed in open fields and wetlands (Dechant et. al. 1999).

Short-eared Owls also will nest in grain stubble. In North Dakota, nests were usually in areas with vegetation 30-60 cm high and 2-8 yr old residual vegetation. In northwestern North Dakota, most Short-eared Owl nests were in sites dominated by western snowberry (*Symphoricarpos occidentalis*) mixed with herbaceous vegetation. Two nests in Conservation Reserve Program fields in Wisconsin were surrounded by quackgrass (*Agropyron repens*) with maximum vegetation heights of 70 and 90 cm (Dechant et. al. 1999).

## **SPECIES DESCRIPTION:**

Medium sized owl with females larger. Adult plumage: dorsally mottled brown and buff, resembles dried grasses. Ventrally, whitish to rust colored with dense vertical streaking on breast, thinning out on sides and flanks. Females generally darker dorsally owing to more brown, and ventrally owing to rust color and heavier streaking. Sexes readily distinguished during the breeding season using color, size, and behavior. Head large and round with very small tufts arising from the center of forehead, generally not seen. Face large and facial ruff round during the normal posture. Facial disk gray/white, orbits black, eyes yellow, bill black. Wings long and broad with 10 primaries and 12 secondaries. Tail medium length with 12 feathers. In ascending flight, bouncing high flapping wing-beats. When hunting, few wing-

beats interspersed with quartering on slightly positive dihedral wings. Aerial agility a good field characteristic of this species as it is often seen foraging during the day (Holt and Leasure 1993).

Morphologically similar to the Long-eared Owl (*Asio otus*), but larger overall. Long-eared Owl's flight is more direct with wings held most often on a horizontal plane. Long-eared Owl plumage is darker dorsally and more heavily streaked and barred ventrally. Usually separated by diel activity period (Long-eared: nocturnal, Short-eared: crepuscular), but latitude and season may complicated this (Holt and Leasure 1993).

## **LIFE HISTORY:**

Short-eared Owls generally breed from early April to late August. In North Dakota, the mean hatch date for Short-eared Owl nests was mid-June, but hatching dates range from early May through late July. Early dates of arrival on the breeding grounds range from late March to early May; late dates of departure for wintering grounds range from early September to early November. In areas where the wintering and breeding grounds overlap, Short-eared Owls may begin nesting by late March. If the first clutch is destroyed, Short-eared Owls may reneest. There is little evidence of Short-eared Owls producing two successful broods in one breeding season (Dechant et. al. 1999).

## **NATURAL AND HUMAN LAND USE THREATS:**

Nesting habits and nomadism make this species particularly vulnerable to habitat loss at any season; such loss-conversion of open habitats to agriculture, grazing, recreation, housing, and resort development are key factors in declines. Reforestation in some areas may also contribute to habitat loss. Predation by skunks on eggs and nestlings suspected in decline on Martha's Vineyard Island, Massachusetts and disturbance at nests by domestic and feral cats and dogs is known. Interspecific competition with Barn Owls (*Tyto alba*) may also occur; successful nest box programs to attract Barn Owls have coincided with the decline of the Short-eared Owl on Martha's Vineyard and Nantucket Island, Massachusetts (Holt and Leasure 1993).

Short-eared Owls are generally not sensitive to human activity because nests are difficult to locate, but 3 of 4 females flushed from nest scrapes by researchers were believed to have moved a short distance and reneested. For research activities, trapping is most effective with noose carpet and mist-net for females. Artificial perch structures have also been successful. Shooting does occur, but probably with less impact on populations than in years past. Effects of trapping are not known (Holt and Leasure 1993).

## **VIABILITY:**

The overall goal is to provide breeding opportunities for Short-eared Owls. Because short-eared owls are nomadic, they may be present only sporadically at specific sites (Holt and Leasure 1993, Dechant et. al. 1999). Maintaining a persistent, viable population at any particular site is therefore highly unlikely. The erratic nature of the bird makes such goals

infeasible. As a result, the goal is to provide habitat suitable for nesting for populations, preferably at sites where nests are already known to occur. If this is done, then when conditions are right, nesting by a sizable group is possible. This will be accomplished by providing special management as necessary to allow the continued existence of appropriate habitat for this species.

Based on data from Prairie Ridge State Natural Area, a breeding population of 15 pairs any given year would be near the upper limit of what is attainable in Illinois (Jim Herkert pers. com.). Management should therefore target the creation and maintenance of enough habitat to support a population of up to 15 pairs in any given year. Even with this information, it is best not to target a specific number as a measure of success due to the erratic nature of this species.

## **MANAGEMENT:**

Specific measures which can be taken to reach these goals are as follows:

- 1) Maintain and increase the amount of habitat suitable to nesting short-eared owls by maintaining and improving the current habitat.
- 2) Maintain and improve the current acreage of grasslands suitable to short-eared owls to a size capable of supporting a population of at least 15 pairs in any given year. Based on reported nest densities (Holt and Leasure 1993, Herkert et. al. 1999), at least 500 acres of suitable habitat may be required to achieve this goal. Besides the acreage requirements, the following management prescriptions are necessary to maintain the required acres in habitat suitable for Short-eared Owls.
  - a) Grasslands utilized for breeding should be managed to provide nesting cover that is between 30-50 cm tall (Duebbert and Loekmoen 1977, Holt and Leasure 1993, Herkert et. al. 1999). Mowing or periodic fire should not be performed during the nesting season, mid-March through early May, based on Illinois egg dates of March 15 to April 22 reported in Walk et. al. (1999). This species has been found to be compatible with grazing in western areas, so it may be here as well (Jim Herkert pers. com.).
  - b) Potential nesting areas should not be grazed. Short-eared Owls appear to avoid nesting in areas where livestock are present (Kantrud and Higgins 1992).
  - c) Breeding areas should be periodically managed (in a rotational basis) with fire, mowing, or grazing to reduce grass height and maintain habitat for small mammal prey (Leman and Clausen 1984, Kaufman et. al. 1990, Herkert et. al. 1999). The short-eared owl is very dependent upon its prey base. However, the prey base does not necessarily need to be in the same field as where nesting occurs.

Since the short-eared owl has a sporadic and nomadic nature, managers should keep in mind

that even the best management efforts may not result in the appearance of this species. Managers could provide everything short-eared owls need and still not get them. Also, since this species shows a preference for cool season grasses over restored prairie areas, it may be a challenge to get nesting in restorations.

## **MONITORING:**

Yearly censuses should be made to determine use by *Asio flammeus* and preferred habitat.

## **RESEARCH NEEDS:**

Research is needed to determine how management activities affect the winter and breeding season prey base for this species. The short-eared owl is very dependent upon the prey base, particularly small mammals.

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## **FIGURES**

Figure 1. North American Breeding Distribution

Figure 2. Illinois Breeding Distribution by County