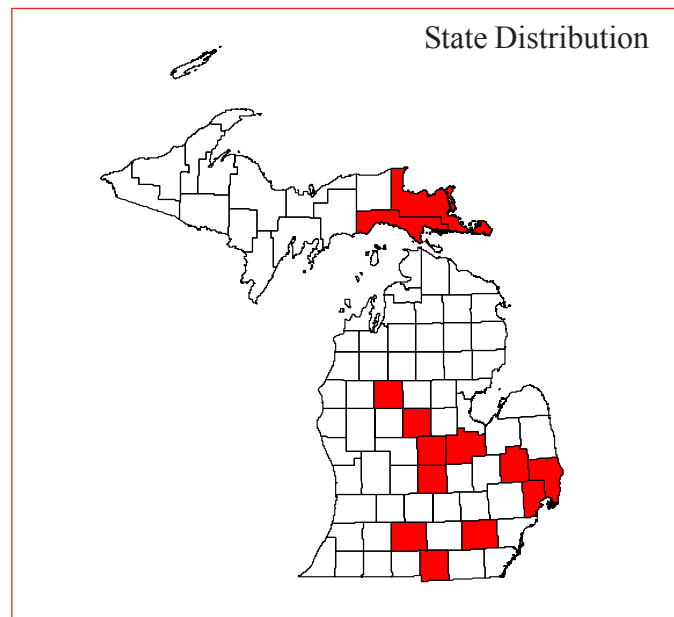
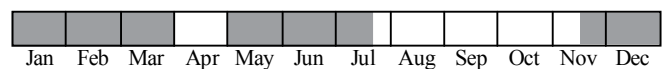




Photo by Don Baccus



Best Survey Period



**Status:** State endangered

**Global and state rank:** G5/S1

**Range:** The short-eared owl is one of the world's most widely distributed owls (Holt and Leasure 1993) and it occurs as a resident or visitor on every continent except Australia (Evers 1994). In North America the short-eared owl breeds from northern Alaska and Canada, south to central California, and east to Maryland and Prince Edward Island (Johnsgard 1988, Evers 1994).

**State distribution:** The short-eared owl probably was never a very common resident of Michigan. Early nest records from the late 1800's and early 1900's are minimal, most of which were documented in south-east Michigan. However, these early records probably do not reflect the true distribution of owls but rather the density of observers during that time period (Evers 1994). During the mid 1900's scattered breeding records were documented in several southern Michigan counties which included Calhoun, Clinton, Lapeer, Saginaw, and Wastenaw (Zimmerman and Van Tyne 1959). Since then, very few breeding records have been recorded in Michigan. The following counties have had recent records (since the 1980's) of breeding short-eared owls: Chippewa, Mackinac, Osceola, Isabella, Gratiot, Clinton, Lapeer, St. Clair, Macomb (Evers 1991), and Hillsdale (Natural Heritage Biological and Conservation Data System 1999).

**Recognition:** The short-eared owl is a medium-sized owl with females slightly larger in size than males (Holt and Leasure 1993). This species has long wings and a short tail with a **tawny, boldly streaked breast** and a belly that is paler and more lightly streaked. The face is round with **small ear tufts**. The flight pattern of the short-eared owl is **erratic and low to the vegetation**. When in flight, **pale wing patches** are visible near the ends of the upper wings and **dark "wrist marks"** may be observed on the underside of the wings (Johnsgard 1988). The vocalization of the short-eared owl, which is typically heard only in the spring, can be likened to that of a **barking dog**. Also, young make a distinctive begging call ("**Psssss sip**"), which may be heard during the later portions of the nesting season (Holt and Leasure 1993).

**Best survey time:** The best time to survey for breeding short-eared owls is from May through mid-July. Winter surveys should be conducted from late November through early March. Short-eared owls can be surveyed by watching grasslands/emergent wetlands for the presence of the bird during the late evening hours. Vocalizations by adults also may be heard during early portions of the breeding season and begging calls from the young may be heard during the later portions of the breeding season.

**Habitat:** Short-eared owls require large (typically > 250 ac) open grassland or emergent wetland habitats such as prairie, hayfields, fallow fields, small grain



stubble, and marshes for breeding habitat (Dechant et al. 1998, Johnsard 1988). However, smaller grassland/wetland fragments as small as 75 ac. can be utilized particularly when the surrounding landscape is largely openland habitat (Dechant et al. 1998, Herkert 1999). In the winter, congregations of short-eared owls exploit old fields, marshes, and hayfields. Pine plantations (Kinziger 1997), preferably with an average height of 5 feet, or individual conifer trees adjacent to openland/wetland habitats are preferred roosting habitat in the winter and may provide a survival advantage over ground roosting sites, particularly when snowfall exceeds 2" (Bosakowski 1986).

**Biology:** The short-eared owl is migratory but some birds over-winter in small groups in southern Michigan. When short-eared owls arrive to their breeding grounds in the spring they begin courtship displays, which are often observed during daylight hours. Breeding territory size (typically > 170 ac.) and use from year to year may vary depending on food availability. Nest sites are placed on the ground and consist of a bowl-shaped depression that is lined with grasses and downy feathers (Holt and Leasure 1993). Eggs are typically laid by mid-May with clutch sizes varying between 4-7 eggs. If nests are destroyed re-nesting may occur. Eggs are incubated approximately 24-29 days and young hatch asynchronously (Johnsard 1988). Young begin to beg for food at 3-4 days old and wander around the nest site when approximately 14-18 days old. Adults aggressively defend wandering juvenile birds. Young typically can fly at 24-27 days old and family groups may remain together throughout the entire winter, often forming winter foraging territories (Evers 1994). The short-eared owl's diet is primarily composed of small mammals, particularly voles, with smaller percentages of the diet encompassing various openland/wetland bird species. Vole abundance has been linked directly to nest productivity and habitat utilization (Dechant et al. 1998). Short-eared owls hunt primarily at dusk by taking prolonged foraging flights, usually less than 6 ft. above the vegetation and typically flying into the wind. They often hover when foraging and quickly descend vertically on prey. Occasionally short-eared owls hunt from low perches (e.g., fence posts, shrubs, etc.) by watching open areas for prey. When prey is spotted from these low perches they will fly out rapidly and pounce on the prey. Approximately 20% of all attempts to procure prey are successful (Holt and Leasure 1993).

**Conservation and management:** The primary threat to this species in Michigan and throughout the mid-west is alteration and destruction of habitat due to development, intensive agriculture, and successional changes to habitat (Evers 1994). Habitat manipulation and destruction directly impacts the species by alteration of suitable nesting habitat and indirectly by influencing

abundance, distribution, and vulnerability of prey species (Block et al. 1994, Dechant et al. 1998). Fragmented openland habitats increase the likelihood of nest destruction from predators such as skunks, raccoons, foxes, and coyotes (Sample and Mossman 1997). Management should focus on maintaining large contiguous areas of grassland, marsh, or wet meadow. This could be accomplished through conservation easements, land purchases, utilization of the Conservation Reserve Program (CRP), etc. (Johnson 1996). Management practices that increase the quality of habitat and prey-base include burning or mowing every 3-5 years (Dechant et al. 1998). Mowing or burning should not be conducted from mid-April through mid-July in order to abate nest destruction and mortality of young birds. Ideally fields should be mowed from the center outward to allow escape of fledgling owls, as well as various other grassland bird species (Sample and Mossman 1997). When burning large contiguous area (> 100 ac.) no more than 1/3 of the habitat should be burned annually. In smaller fragments (< 100 ac.) 1/2 the site could be burned annually. If several small sites are within close proximity (within 1 mile) of one another, then some of these fragments can be burned entirely while other small fragments are left unburned. Leaving unburned portions of large openlands or leaving smaller fragment entirely unburned provides refugia for owls, as well as various other wildlife species, and creates a diversity of micro-habitat conditions for multiple grassland bird species (Sample and Mossman 1997).

**Research needs:** Numerous research needs exist for the short-eared owl. Systematic inventory of breeding and wintering grounds in Michigan is needed in order to get a better sense of distribution patterns across the state. Also, more research on the impacts of prescribed burning and mowing, factors effecting nest productivity, and analysis of landscape and micro-habitat attributes that influence habitat utilization and nest productivity.

**Related abstracts:** Red-legged spittlebug, blazing star borer moth, Culver's root borer moth, emergent marsh, Blandings turtle, eastern massasauga

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