



Habitat and Research Needs of Midwest Owls

Barn Owl (*Tyto alba*)

Not only is the barn owl one of the most widespread owls in the world, it is one of the most widespread of all land birds. This is probably due to the versatility this species possesses when it comes to nest site and prey selection. Barn owls will readily adapt to habitats modified by humans and will generally take to nest boxes as well.

Barn owls are found primarily in open habitats, such as grasslands, marshes, or farm fields.

Even though barn owls have been intensively studied in both North America and Europe, there are areas where further research is needed. First on the list would have to be population assessments. Being nocturnal and secretive by nature, getting a hold on their population densities and distribution is problematic. Trends cannot be assessed. A survey technique for adequately finding and counting barn owls is a high priority.

What effects do barn owls have on rodent control? Can they be introduced in certain situations to assist with otherwise out-of-control rodent populations?

Eastern Screech-owl (*Megascops asio*)

Eastern screech-owls occur in both urban and rural habitats as long as there are trees that supply nesting cavities. In some cases, they have nested in artificial nest boxes. In many cases, eastern screech-owls are the only avian predator in urban and suburban habitats. There doesn't seem to be any minimum area required for this species to nest in most areas.

Generally speaking, the eastern screech-owl has received little attention from the scientific community. In two long-term studies, one in Texas and one in Ohio, artificial nest boxes were utilized to facilitate observations. Since eastern screech-owls are found in such a wide variety of habitats, studies need to focus on different life history strategies that might be employed within different habitats.

Other studies could look at eastern screech-owls from a metapopulation perspective that includes both urban/suburban and rural populations, but this would require a multi-generational study, of probably 10-15 years.

Great Horned Owl (*Bubo virginianus*)

The great horned owl is, to say the least, a remarkable animal. "It has the most extensive range, the widest prey base, and the most variable nesting sites of any American owl." Habitats can include deciduous forests, coniferous forests, mixed forests, and second-growth forests, as well as swamps and farms. Home territories usually include some sort of open area, such as pastures or farm fields.

Like many other owls, great horned owls are difficult to study. Nonetheless, population studies are needed, especially in the Midwest and areas that form the edge between urban and rural habitats. We also need to know the age at which they first breed.

We do know that dispersal movements occur during periods of food scarcity. Do birds that move into these new areas return to their old haunts or stay in the newly-found habitats? We are also lacking information on:

- whether territories change with prey availability
- how pair bonds are formed
- how nest sites are selected
- aspects of territorial defense

Some of this information might be gathered with the use of night vision scopes.

We also need to know how populations change with changing forest practices and we should attempt to determine what effects shorter harvest cycles might have on the species.

Finally, we need to learn more about interspecific competition, specifically with regard to other protected owls such as the spotted owl in the western US and the barn owl, a state endangered species in Indiana.

Snowy Owl (*Bubo scandiaca*)

Snowy owls are only found in this part of the country during the winter months and then it is usually only during irruptive years. Three main habitats seemed to be used in this part of the country during the winter of an irruptive year:

1. roadsides – making them vulnerable to collisions with vehicles
2. farm fields – especially along the edges presumably where they would find more food
3. airports – probably due to the short grass that makes hunting easier

There is probably not any study required for this species that could be planned due to their erratic and unpredictable movements into the area. When sightings are made, care should be taken to fully document all activity as well as the macro- and microhabitat in which the activity occurs.

Barred Owl (*Strix varia*)

The Barred Owl is one of the birds that has managed to extend its range over the course of the last century. In many cases, this can be a bad thing (think of the brown-headed cowbird). But one would tend to think that with an owl, how can that be a bad thing? Nevertheless, it just might be. The Barred Owl has expanded its range into that of the Spotted Owl (*Strix occidentalis*), a federally endangered species. Because the Barred Owl is more aggressive, it can displace the Spotted Owl and, in some cases, hybridize with it.

The Barred Owl is a bird of the forests, but it can range throughout numerous forest types from swamps and riparian areas to upland woodlands. It typically likes larger tracts of mixed forests, avoiding younger stands with the inherent greater stem density in the understory. Several studies over the years have shown a preference for areas near water as well. Habitat preferences do not seem to change with the seasons.

Because of the Barred Owl's affinity for older-growth forests, shortening of harvest rotation periods can be detrimental to this species. Barred Owls will adapt to artificial nest boxes, but this should not be considered a viable alternative to careful forest management.

There are many aspects of the Barred Owl's life that need research. Specifically, the reproductive biology of the Barred Owl, survivorship, and natal dispersal need attention as does disease and parasites associated with this bird.

Range expansion and its effects on the Spotted Owl (and any other species in other parts of the country) need to be closely monitored and those effects determined as quickly as possible. The affinity for older forests makes "before and after" studies mandatory for this species as well.

Long-Eared Owl (*Asio otus*)

Most of the studies on the Long-eared Owl have focused on its food and nesting requirements. Other aspects are poorly understood.

Habitat preferences of the Long-eared Owl are focused on grasslands, open areas with some shrubs and open forest. They will, on occasion, nest in thick undergrowth within open habitats, or in forested areas next to grasslands.

Little is known about the Long-eared Owl's habitat preferences during migration but they occupy much the same habitat during the winter months that they do during the nesting season. Winter roosts are commonly found in coniferous stands of the eastern U.S. as long as open areas for foraging exist in the vicinity.

Several questions have come up based on results of banding studies on the Long-eared Owl. Questions abound on nest site fidelity and migration of some populations while other populations nest in the summer and roost in the winter in the same areas. Long-eared Owls are known to be communal roosters and while this behavior has received extensive study in many species, owls have been left out of the picture completely. Some of these questions might be answered with comparative studies of both the Long-eared and Short-eared Owls.

Short-Eared Owl (*Asio flammeus*)

The short-eared owl is a grassland, ground-nesting bird. It is also frequently found in marsh areas. Its habits on a daily and annual basis seem to be centered almost wholly on prey availability. Indeed, it is virtually always associated with open country habitat that also supports cyclic prey species. During migration, Short-eared owls use much the same habitat, only smaller patches. During the winter months, it, once again, needs larger areas with a possible greater mix of habitats within the area as long as vegetation is short. As an example, it may venture into dumps and gravel pits.

General population numbers for the Short-eared Owl shows declines in virtually all of its range and it is a listed species in at least 7 of 13 northeastern U.S. states. The reason for this decline is generally suggested to be the same as so many other species are declining – loss of habitat. However, what appears to be suitable habitat in many areas is not occupied by this species, so one has to wonder if other factors are not involved. For instance, since it is a ground-nesting bird, could an increase in coyote numbers in much of the northeastern quarter of the U.S. be causing increased predation of eggs or young and, therefore, contributing to declines in the species? This is only one of many possibilities as the area has not been studied.

The birding public can contribute to knowledge by thoroughly documenting any predator species observed in areas that are occupied by Short-eared Owls during any season.

Northern Saw-Whet Owl (*Aegolius acadicus*)

The Northern Saw-whet Owl may be one of the most common owls in the forest. In spite of this, little is known about its population dynamics, behavior and breeding. Northern saw-whet owls are only present in our part of the country outside of the breeding season. During the “off”-season, saw-whets utilize a wide range of habitats as long as the area has dense vegetation for roosting and perches for hunting.

There is little evidence for migration of northern saw-whet owls through open country. It is generally thought that, instead, migrating birds tend to move from one woodlot or forest stand to the next and the next and so on. Therefore, maintaining the existence of these woodlots, especially in agricultural areas would seem to be beneficial to these birds. However, there is no quantitative data to support this.

One male was tracked over a period of 20 nights on his wintering grounds. The data from this tracking effort showed the total area utilized by the bird to be about 115 ha. There is no information on whether or not this bird had exclusive use of the territory. Also missing is any data on inter- or intraspecific competition on wintering grounds.

Migration and wintering habitat studies are currently being conducted in southern Indiana and numerous other places especially in the eastern half of the U.S.. A correlation between the number of owls and quantitative data of prey abundance could help answer some questions about how prey density affects the density and dispersal of these owls during the winter months.

For more information on these or any of more than 700 species of birds in the continental US, subscribe to the Birds of North America – Online, presented by the Cornell Lab of Ornithology and the American Ornithologists Union. (<http://bna.birds.cornell.edu/BNA/>)