

An Endangered Grassland Denizen: The Short-eared Owl

Story by Kathy Andrews Wright



Above: A short-eared owl hunts over the grass at Sibley Pheasant Habitat Area. Circle Photo: Dr. Ting marking poles with numbers and GPS coordinates. Poles were installed a month prior to trapping so owls would acclimate to their presence. Photos by Jacques Nuzzo.



Recovery Plan for the Short-eared Owl

In the document “Status Review and Recovery Outline for Grassland Raptors,” approved by the Illinois Endangered Species Protection Board in 2010, Dr. Jeff Walk, now The Nature Conservancy’s Director of Conservation, presented recommendations for the management of two Illinois-endangered species: the short-eared owl and northern harrier.

- **Restore and maintain large, open grassland/wetland areas.** Grasslands larger than 250 acres, and areas with a concentration of more than 30 percent grassland/marsh cover, are most likely to be occupied by both species.
- **Enhance the composition of large, open grassland/marsh areas.** Grasslands with floral diversity, managed to provide a variety of structures and successional stages, are more likely to attract northern harriers, short-eared owls and other wildlife, and support larger, and more reliable, populations of prey.
- **Identify and monitor sites with possible nesting to document confirmed nesting.** Confirming the presence of short-eared owls is critical, but often difficult because of their secretive nesting behavior.

HIDING BEHIND A bush on the open, wind-swept winter grassland, Dr. Tih-Fen Ting focused her binoculars on a short-eared owl hunting in the fading light. Anxiously eying the owl’s movement, she silently wills it to land on the pole perch and to become a subject of her research.

A professor at the University of Illinois at Springfield, Department of Environmental Studies, Ting is leading a three-year research project on the Illinois-endangered short-eared owl (*Asio flammeus*). Funded by the National Wildlife Research Center, the research arm of the USDA-APHIS Wildlife Services Program, she is collaborating with Dr. Brian Washburn to study winter habitat use, movements and prey selection of owls in two environments—a rural grassland and an urban airport.

Short-eared owls were described in the 1800s as sporadically nesting in the northern half of Illinois, and as being commonly sighted during the winter months. As Illinois grasslands and marshes declined, so did the open land owl. By the 1950s the short-eared owl was an irregular migrant in southern Illinois, and an uncommon permanent resident in central and northern Illinois. The Illinois Endangered Species Protection Board listed it as endangered in 1977, and the lack of documented nesting activity continued for more than another decade.

Field technicians set up 57 pole traps on the Sibley study site. Photo by Jacques Nuzzo.



The fate of the short-eared owl is similar throughout its North American range. Partners in Flight estimates a global breeding population of 3 million short-eared owls, with 14 percent of the birds spending part of the year in the United States. Between 1996 and 2013, numbers declined more than 3.2 percent each year, resulting in an overall decline of the North American population of 80 percent (North American Breeding Bird Survey).

Dr. Ting's current year of the research project has focused on the rural aspect of the study, which is taking place on the Sibley Pheasant Habitat Area, a 635-acre Illinois Department of Natural Resources restored prairie in Ford County.

Capturing short-eared owls entails establishing a series of pole traps across the open grassland.

"We have set up 57 pole traps, arranged in six trap lines to allow one person of the research team to monitor a couple lines each evening throughout the first month of the field season," explained research partner Jacques Nuzzo, Program Director with the Illinois Raptor Center and designer of the traps. "Traps are 4-foot high poles set 30 feet apart and erected a month prior to the expected arrival of wintering owls, encouraging them to utilize these poles like they do fence posts, as perches while hunting."

When the research team is in place and ready to trap the owls, each perch is covered in a noose carpet with vinyl-coated wires, in which, hopefully, the bird's toes will be entangled.

"This type of trap is passive, lacking any bait, and you're taking a chance an owl chooses to sit on a carpeted platform, and that a toe will be tangled in one of the 16 loops," Nuzzo continued, noting the frustrations felt watching birds hunting in the study area, yet avoiding the platforms. Researchers also tested a spring-loaded bow net baited with a starling, which attracted no short-eared owls, yet did draw interest from a Cooper's hawk and a northern harrier.

"Crepuscular in nature, this species is most active at dusk, and we operate the trap lines mostly from 3:30 to 7 p.m.," Ting said.

Nate Brown, a field technician, holds a short-eared owl that was captured on one of the pole traps. Photo by Dr. Ting.



Traps contained a noose carpet installed on top of a pole. Photo by Jacques Nuzzo.



Evidence that some raptor used a pole as a dinner table. Photo by Jacques Nuzzo.



Like the snowy owl, short-eared owls are an irruptive species, with numbers fluctuating greatly based on annual breeding success and small mammal populations. Studying a cyclic species can be a researcher's nightmare.

"Unfortunately, the winter of 2016-2017 hasn't been an irruptive year, and the number of short-eared owls present in Illinois has been low," explained Ting. "Only four owls have been sighted on the research area this year, where 11 were reported the previous year. During the last irruptive year, O'Hare airport reported just under 40 owls present, whereas this year only three have been sighted."

With owl numbers so low, researchers were ecstatic when at 4:45 p.m. on Christmas Eve 2016, an owl was captured.

"Because our main goal is to monitor the movement of the owls, we minimized stress on the bird with little handling," said Ting. A federal leg band was affixed and a quick review of the plumage undertaken to determine if it was an adult or juvenile. The bird was weighed simply as a measure to ensure that the transmitter was within the allowable weight range, no more than 3 percent of the bird's weight.

"Satellite transmitters aren't suitable for this type of work because of the weight limit," Ting explained. "While they would allow long-distance monitoring, the spatial resolution is poor for what we are interested in knowing—habitat use on a localized wintering ground."

Sibley proved to be an excellent study site for a second reason. Towers with Automated Recording Units placed for a study of ring-necked pheasants could be utilized to collect very detailed telemetry data of short-eared owl activity patterns—periods of movement, perching and roosting.

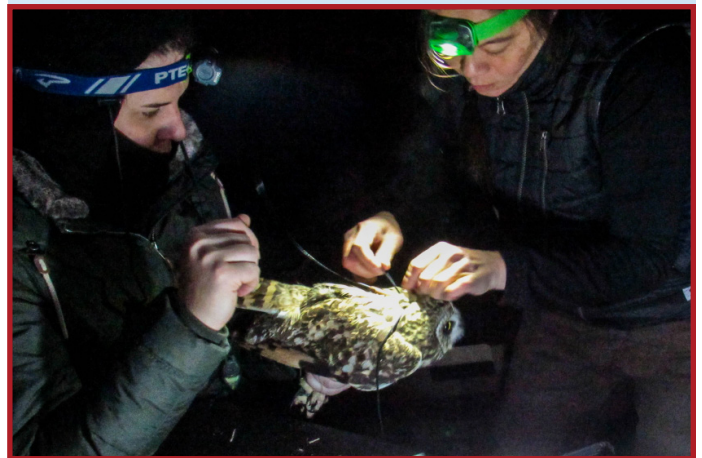
Subsequent research will focus on short-eared owl use of an urban airport habitat, valuable in not only understanding the wintering habits of the owl, but also to provide recommendations for minimizing potentially catastrophic bird strikes.

"Despite weighing a mere 7 to 17 ounces, the short-eared owl will sit on a runway, unphased by the seemingly monstrous approaching jet," Ting related of anecdotal accounts.

"People don't realize how unique the short-eared owl truly is," Nuzzo remarked. "Built for life in a grassland or marsh environment, its physiology, body shape and behavior are unique among the owl species inhabiting Illinois." Although disappointed that the trapping efforts haven't been more successful, Nuzzo is happy as he had the opportunity to sit on the grassland and listen to the bark of a short-eared owl.



One of Dr. Ting's students, Libby Errickson, held the owl while Dr. Ting worked on fitting a radio-transmitter to the bird with a backpack harness. These photos were taken without flashlights by field technician Tim Demers.



Like so many other grassland birds, the short-eared owl didn't fare well as the moldboard plow ripped into the rich prairie soil, and tiles drained Illinois' biologically diverse wet prairies and marshes.

With a short-eared owl recovery plan now in place, land management agencies working to create and manage extensive blocks of grassland and marsh habitat, and researchers working to build our understanding of the owl's winter ecology, a hope exists that the denizen of grasslands will have a secure future in the Prairie State. ■



BIO

Kathy Andrews Wright retired from the Illinois Department of Natural Resources in May 2012 after more than 33 years with the agency, with her final position as editor of *OutdoorIllinois* magazine. She is a freelance writer, environmental educator, scuba diving instructor and signed on as Illinois Audubon editor with the winter 2015 edition.