



GHOST IN THE GRASSLAND

— Tracking the short-eared owl

By Theresa Swenson and Glenn Hewitt

On a brisk December evening, volunteers, birders, and biologists gather near dusk, in hopes of glimpsing one of New York's rarest owls. The surrounding landscape of hayfields and pasture promises both a truly exceptional birding opportunity and a chance to contribute to the conservation of a unique and declining species, the short-eared owl.

A medium-sized owl, the short-eared is named for the small ear tufts atop its head, although these are often not visible. These owls have a distinct round, beige to white facial disk with brown and white mottling over much of the body. In flight, their most distinguishing characteristics are the bold, dark "wrist" patches, dark wingtips, and an erratic flight pattern which is often described as "moth-like." Their bark-like vocalizations, which are often heard in winter when large numbers of birds congregate, are almost unmistakable once you have heard them.

The short-eared owl is among the world's most widely distributed owls, occupying all continents except Australia and Antarctica. In New York, they often prey on small mammals, particularly the meadow vole, but will also take small birds and insects. This highly opportunistic species will sometimes congregate in great numbers in areas experiencing population explosions of small mammals. If food resources are plentiful

on wintering grounds, these areas may also be used for breeding. However, when environmental conditions such as deep snow and ice limit access to prey, owls must move on to search for better foraging grounds. Their nomadic and sometimes irruptive nature, along with their rapidly declining habitat, make targeted monitoring and research imperative to evaluating this species' status in New York State.

A bird of open country, the short-eared owl is more common in winter in New York than in summer. This is because our state is at the southern edge of its breeding range; the owl usually spends the summer breeding season further north. In his 1914 *Birds of New York*, Elon Howard Eaton called the short-eared owl "one of our commonest owls." Just six decades later, in *Birds of New York State* (1974), John Bull considered the species "a local breeder, greatly decreased in recent years." While rare breeding still occurs in the St. Lawrence and Champlain Valleys, parts of western New York, and on coastal Long Island, the species continues to decline as a breeder in New York. Distribution of this species declined by 33% between the first (1980-1985) and second (2000-2005) *Atlas of Breeding Birds in New York State*. Most of these declines occurred in the marshes and coastal grasslands of Long Island's southern shore.



Grasslands are open areas dominated by herbaceous vegetation and characterized by very few trees and shrubs. Grasslands are maintained naturally by fire, flooding, and wildlife grazing, but in New York, they are predominantly maintained by agricultural practices such as hay production and livestock grazing. The long-term decline in agriculture and subsequent abandonment of farmlands in New York has led to habitat succession, from grasslands to shrublands to woodland, making it unsuitable for grassland-dependent birds.

The precipitous decline of the short-eared owl in New York and other parts of its North American range coincides with that of other grassland-dependent species such as the horned lark, upland sandpiper, and Henslow's sparrow. As land use practices have changed, grasslands have become one of the most imperiled habitats throughout New York, the Northeast, and much of North America. The reforestation of the Northeast since the peak of agricultural clearing in the early 1900s is an important factor, but threats such as development, fragmentation of habitat, and changes in agricultural practices, including conversion to row crop and early mowing, have also contributed to grassland declines.

This winter, and for the fourth consecutive year, biologists and birders will conduct coordinated surveys to document wintering hawks and owls. Surveys focus on the New York State-endangered short-eared owl and state-threatened northern harrier, but also include the rough-legged hawk, American kestrel, and snowy owl. From December through March, participants track these species in a rural area in western Washington County commonly referred to as the Washington County Grasslands. Their efforts are part of DEC's statewide Winter Raptor Monitoring Project, which aims to monitor winter raptor concentration areas and better understand species supported by grassland habitats.



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While the collective acreage of these grasslands constitutes only a fraction of New York State's landscape, their conservation is the key to the continued existence of our short-eared owls. In addition to the volunteer-based surveys to determine whether short-eared owls

are using an area, DEC's Winter Raptor Monitoring Project also includes trapping and tracking individual owls equipped with transmitters, characterizing the habitat they frequent, and using this information to guide future conservation efforts and management activities.



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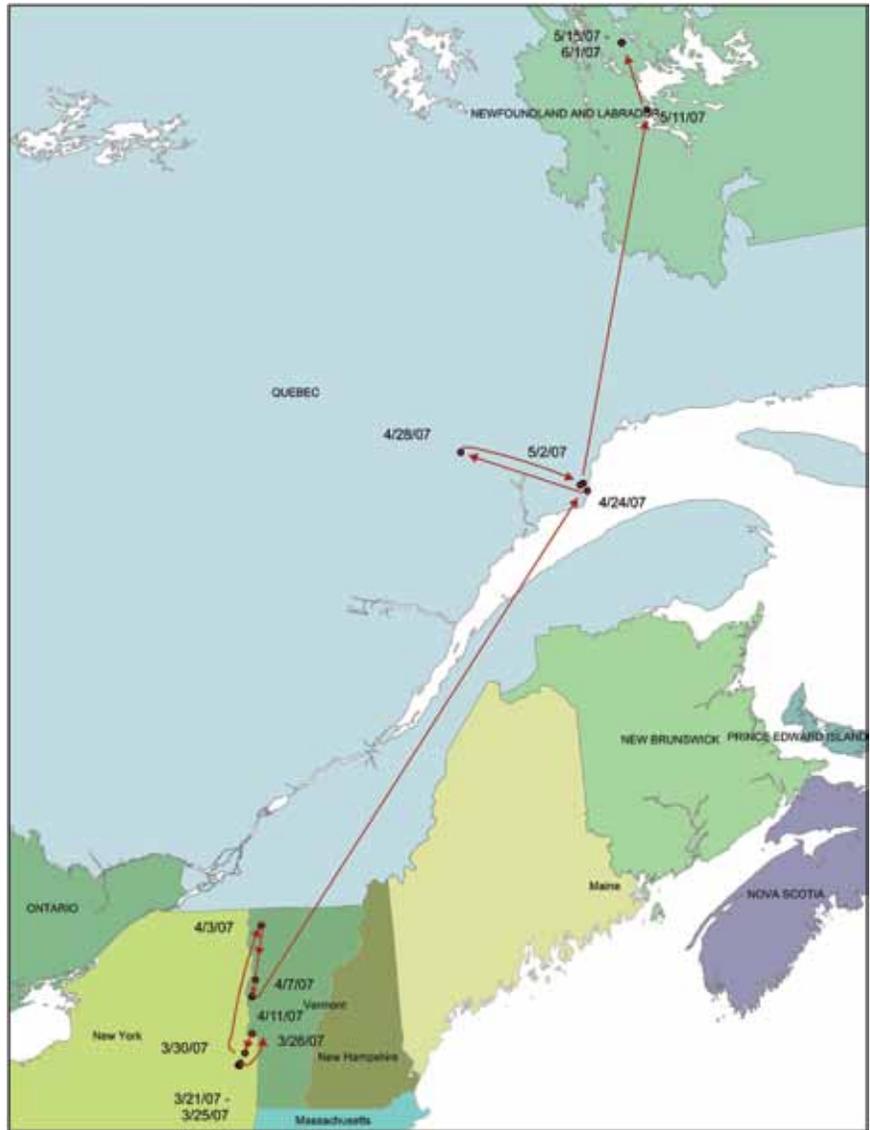
Biologists trap and examine short-eared owls as part of DEC's statewide Winter Raptor Monitoring Project. Here, a biologist examines an owl's wings.

Over the past several years, DEC staff have captured, banded, and placed transmitters on more than 70 short-eared owls. Using a variety of nets, DEC staff safely capture short-eared owls and northern harriers, determine their age and sex if possible, and gather other biological information. The short-eared owl is surprisingly docile in the hand, making processing relatively easy. Staff place a unique federal identification band on each owl's leg to facilitate reporting if it is seen again or recovered. A lightweight radio or satellite backpack-style transmitter is also placed on each owl so it can be tracked throughout the grassland complex.

Biologists use these battery-powered radio transmitters to track a bird's local movements. The batteries last for 12 to 18 months, and each transmitter has a specific radio frequency. With receivers and antennas in hand, DEC staff scan the known frequencies of radio-tagged birds and track them as they forage throughout the night. This provides valuable information on what areas the birds regularly use, and allows staff to evaluate individual bird's home ranges. Biologists can then use these data to determine what areas and habitat types are of critical importance to roosting and foraging owls. The following winter, DEC staff again scan these frequencies to see if owls have either returned to their capture area or have relocated to other parts of the state.

DEC staff also use satellite transmitters on some owls. Because of their greater range, these transmitters go a step further by providing insight into both migratory routes and locations of summer breeding grounds. Satellite transmitters can provide data for up to three years.

Biologists also assess the habitat in areas frequented by congregating owls. Biologists take specific measurements to learn about the owls' habitat needs and preferred cover types. A thorough understanding of the habitat used by owls will



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Above: This map shows the flight pattern of an owl captured in NY, fitted with a satellite transmitter, then released.

Below: Short-eared owl fitted with transmitter.

enable biologists to prepare management plans that ensure high quality habitat for this species while also benefitting other grassland-dependent species. DEC currently manages more than 11,000 acres of grassland habitat on state Wildlife Management Areas, some of which are regularly used by short-eared owls.

As well as managing state lands, DEC also encourages private landowners to protect and manage grassland habitat on private property. The Landowner Incentive Program (LIP) gives qualifying landowners incentives to manage their property to benefit grassland birds for a minimum of five years. Since most grassland habitat in New York is privately owned, the program is an essential part of grassland conservation.

Our winter raptor work has already produced noteworthy results. In the Washington County Grasslands, telemetry data from owls led to the purchase, with help from The Nature Conservancy, of more than 250 acres of habitat as conservation grassland. This land now protects a key roosting and foraging area for both short-eared owls and northern harriers, as well as habitat for other at-risk grassland species. Satellite telemetry data have helped biologists identify migratory routes and breeding grounds of short-eared owls that winter in New York, and provided insight on different migration routes used by birds at various wintering locations.

Little is known about short-eared owls' and northern harriers' winter site fidelity (the tendency to return to the same site year after year), but this project has already contributed to the knowledge base for both species. In western New York, two owls captured one winter returned to the same location the next winter. In the Washington County Grasslands, a northern harrier was also captured in successive seasons. Documentation of this behavior highlights the importance of pro-

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WINTER WILDLIFE WATCHING

Short-eared owls are crepuscular (active in low light levels), and dusk is the best time to view them. Migrating and wintering birds typically arrive in New York from mid-November to early December and depart on their spring migration from late March to late April. Short-eared owls respond readily to changes in environmental conditions and prey availability, so it's important to remember that site occupancy can vary year to year and throughout the season. While enjoying any wildlife viewing experience, it is important to keep a respectful distance and not to disturb wildlife. If viewing from a car, observers should pull safely off the road and respect landowner rights and privacy.



For more information about wildlife viewing opportunities, visit www.dec.ny.gov/outdoor/55423.html.

For more information on the Landowner Incentive Program, visit www.dec.ny.gov/pubs/32891.html.

tecting certain wintering grounds despite these species' nomadic tendencies.

The Winter Raptor Monitoring Project has helped us better understand the needs of grassland species and to better protect the habitat that they require. While the short-eared owl is rare throughout much of New York State, if you know when and where to look, you may have an opportunity to see this magnificent bird courging over our grasslands.

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