

SAMPLING THE 2012 FALL MIGRATION OF NORTHERN SAW-WHET OWLS

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Most Northern Saw-whet Owls (*Aegolius acadicus*) nest in mixed deciduous/conifer forests across Canada (Rasmussen et al. 2008) although they are widely distributed in the northeastern U.S., with New York having possible to confirmed breeding in 129 of 5,333 Atlas blocks (McGowan and Corwin 2008). Hundreds of thousands migrate out of their breeding grounds and pass through the northeastern U.S. into the Appalachians and the coastal Southeast, their primary winter grounds. Despite moderate abundance during migration and in winter, saw-whets are rarely heard and seldom seen. Fortunately, saw-whets respond to an audio lure (Erdman and Brinker 1997) and can be caught in mist nets and then banded. Data from the U.S. Bird Banding Laboratory (D. Bystrak) show that about 11,000 are banded every fall and about 1% of the captured birds have already been banded. The number caught varies greatly from year to year. This article describes the fall 2012 migration, one of the larger movements in several decades.

Inspired by Valerie Freer's presentation at a NYSOA meeting in 2010 in Syracuse, Confer initiated a trial banding effort and caught 17 saw-whets on his property 10 miles southeast of Ithaca, NY. In 2011, 29 birds were captured. The first indication of this year's migration came from central Ontario. Bruce Murphy reported banding record numbers of saw-whets early in the migration season, including an extremely high proportion of hatch year (HY) birds. Buoyed by this news, over a dozen volunteers assisted our Hammond Hill Owl Site (HHOWLS) and we opened our nets on 25 September to a very large migration.

Two 120' net lines were erected approximately 300' apart. The setting was second-growth hardwoods with a few conifers and scattered pockets of brush. Because of vandalism early in the season, we were forced to remove the nets and poles each night and reset them the next evening. The nets were opened one half hour after sunset and closed around midnight. As with almost all saw-whet banders, we used an audio lure to attract birds into the net. We used a FoxPro NX3 to play the saw-whet advertising call (10 seconds on, 5 seconds off) at both sets of nets.

Extracting an owl from the net required time and a delicate touch while working with a headlamp. As much as possible, we avoided shining the light in the owl's eyes to minimize night-blindness upon release. Most owls lying in the net seemed calm. The 1 1/4 inch mesh size was just sufficient to allow the bird's head to pass through, but their wings were often tangled, and their talons usually gripped a footfull of threads. Usually we started by grasping the legs and teasing

the threads from its clenched fist, then we freed any portion of a wing that may have penetrated the net and then slowly worked the threads over the head, being careful not to damage the ears or tear out any feathers. Freed from the net, the birds were taken in a carry-box to the banding shed. Net checks were started at 45 minute intervals.

Each owl had a #4-short aluminum band placed on its right leg, a process requiring three hands: one to hold the bird, one to hold the leg, and one to crimp the band with special pliers. Often during this operation the bird would test its agility by trying to sink a couple of needle-sharp talons into the bander. We recorded the bird's wing chords and weight (bird upside down in an orange juice can on the scale). Females are generally larger than males and the sex can be determined for most birds by its weight and wing chord length (Brinker, D. F. 2000). The entire process of banding, measuring, and recording took about ten minutes per bird, depending on how many times the bird managed to get its talons into someone's finger.

It is possible, as with many other birds, to determine the age of an individual owl from molt patterns under traditional visible light. A more easily visualized technique involves organic compounds called porphyrins that occur in 13 avian Orders (Weidensaul et al 2011). The word porphyrin comes from a Greek word for *purple*—an appropriate etymology considering that the compound fluoresces a brilliant magenta under ultraviolet light. In owls, the porphyrins are most conspicuous in the underside of owl flight feathers. As feathers age, the porphyrins degrade and fluoresce less strongly. To age the birds, we gently opened each bird's wing under a black light while shading the eyes and examined the color pattern. A fluorescent pink glow throughout the primaries and secondaries indicated a HY bird. As with many owls, saw-whets do not molt all flight feathers every year. Other patterns of glow/no-glow were compared to reference photos to determine second-year (see image p. 326) and after second-year birds.

Avian mist-netting inherently exposes birds to some risk of stress, injury, or mortality (Recher et al. 1985). The small Northern Saw-whet Owl, which is eaten by every larger owl (Rasmussen et al. 2008), is especially vulnerable. For this reason, saw-whet banders take special precautions. Frequent net checks minimize the stress on owls and their vulnerability to predation. In 2011, a dead owl was found in a net next to a live Eastern Screech-Owl (*Megascops asio*). Presumably the screech owl entangled itself while attacking the saw-whet. We banded this screech owl and released it a mile away to avoid a repeat experience. No known predation on a saw-whet occurred during the rest of 2011, nor during 2012. However, early in the 2012 season we heard a screech owl as we opened the nets. We switched the audio lure to screech owl playback and captured two screech owls during a single net check. One was a recapture of the owl banded and relocated in 2011. Both screech owls were released a few miles away and screech owls were not seen or heard again.

At the start of the season, owls were released by placing them on a fence rail facing a lawn. In most cases they took flight shortly and disappeared into the night. Occasionally a bird would sit for a few minutes while it collected itself

before flying off. Late in the fall of 2012 we released a saw-whet owl and witnessed another owl, almost certainly a Barred Owl (*Strix varia*), attempt to capture the saw-whet in flight. The saw-whet evaded capture and flew off into the forest with the larger owl in pursuit. We immediately suspended banding for the night to ensure the safety of the saw-whets. During the following week we reopened the nets and played a Barred Owl advertising call. Because we neither captured nor heard a Barred Owl during 3.5 hours of playback, we decided that the owl might be only an occasional visitor at the banding site and resumed saw-whet banding. Following the advice of other owl banders contacted at "sawwhetnet," we began releasing owls into dense shrubbery rather than into an open area and decided to immediately discontinue saw-whet owl banding if we heard a nearby, larger owl. Fortunately, we had no other experiences with Screech or Barred owls during the remainder of the season.

A cold front on 16 October brought an extraordinary event to HHOWLS. Our first net check was unsuccessful, as was typical, although we did hear a Barred Owl gave a single, distant call that set us all on edge. Thus it was with slight apprehension that we conducted the second net check around 8:45 pm. To our relief we caught four saw-whets with no evidence of a larger owl. Our next check produced nine owls and nearly filled our carry-boxes. After processing, it was immediately time to check the nets once more, and this time we came back with two full boxes and two in the hand for a total of 12 owls. With 12 birds in hand, a variety of saw-whet owl vocalizations filled the darkness outside our head lamp beam, along with two coyote packs talking to each other and a distant calling Barred Owl. One bander watched an owl fly past her head and into the net, trampoline out, and fly into a nearby shrub. The bander turned her head with a headlamp, temporarily blinding the bird, and picked it up by hand. This was our peak capture as the winds began to blow from the east and migration came to a halt around 1:30 am. In all, we caught 36 saw-whets on that night, more than the total for the previous year.

Irruption abundance of saw-whets is likely due to a high proportion of HY birds (Rasmussen et al. 2008). An unusual preponderance of HY birds reflects very high nesting success and, probably, high abundance of small mammals in the breeding region. This year at HHOWLS, HY birds comprised 85% of the total number caught and a striking 90% of the birds during the first half of the season. There must have been a lot of voles during the saw-whet breeding season in northeastern Ontario and adjacent Quebec, the primary region providing migrants for HHOWLS.

The irruptive movement we observed occurred over much of eastern North America. Kate Duffy reported that banding near Cape May, near the southern end of migration for owls passing through our region, caught the fourth highest number in 32 years, 192 birds with 86% of them HY. Simon Duval of McGill Bird Observatory (<http://www.migrationresearch.org/mbo.html>) near Montreal, QC reported by far their largest number ever with 90% HY birds, and Valerie Freer in Ulster County, NY reported her best numbers in five years with 66% HY birds, higher than average for her station, although lower than at other banding stations.

Recaptures of banded birds provide much information about saw-whet migration (Beckett and Proudfoot 2011). HHOWLS has shared in seven recaptures of birds banded at one site and recaptured elsewhere. In 2010, one of our birds was recaptured that fall in Virginia. In the same year, HHOWLS recaptured a saw-whet that had been banded in spring 2009 at Whitefish Point Bird Observatory on the southeastern shore of Lake Superior. That bird had survived two breeding seasons and was in its second fall migration since being banded. It was about 525 miles southeast of Whitefish Point. In 2011, we banded a bird that was recaptured this fall near Lock Haven, PA, ~ 120 miles southwest from HHOWLS. This fall we caught four banded birds. We have learned that one was banded at Braddock Bay Bird Observatory, near Rochester, NY (BBBO) and moved a straight line distance of ~ 95 miles in 16 days at a compass direction of 131°. Another came from Prince Edward Point Bird Observatory (PEPtBO) on the north shore of Lake Ontario and had moved a net distance of ~110 miles in four days at a direction of 165°.

In 60 years the senior author has had many great birding experiences. But thanks to Northern Saw-whet Owls and all the volunteers, especially my wife, banding Northern Saw-whet Owls this fall migration was the best of all.

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Northern Saw-whet Owls at Hammond Hill Owl Site, *Tompkins*: ready for release (top); awaiting banding (middle); and showing age-specific porphyrin fluorescence (bottom); see pp. 290-294 for article about HHOWLS.