6-2005

# Northern Saw-whet Owls: Rare or Overlooked? An Example from the Central Platte Valley

Daniel H. Kim
*Platte River Whooping Crane Maintenance Trust*

# NORTHERN SAW-WHET OWLS: RARE OR OVERLOOKED? AN EXAMPLE FROM THE CENTRAL PLATTE VALLEY

Daniel H. Kim
Platte River Whooping Crane Maintenance Trust
6611 W Whooping Crane Dr, Wood River, NE 68883
dkim@whoopingcrane.org

## INTRODUCTION

Assessing the population status for species requires accurate measures of local or regional numbers. For many species, standardized protocols exist for estimating local numbers through visual counts (e.g., Breeding Bird Survey routes, Christmas Bird Count circles, and point count protocols used by the U.S. Forest Service). For many raptor species, monitoring populations at migratory bottlenecks such as the Goshute Mountains, NV, Hawk Mountain, PA, and Cape May, NJ, provide yearly indices of population health. Unfortunately, most monitoring protocols overlook a suite of small crepuscular or nocturnal species. Project Owlnet (www.projectowlnet.org) is a volunteer-based network of banding stations focusing on Northern Saw-whet Owl (*Aegolius acadicus*) migration in the eastern part of the United States and Canada. Information collected by Project Owlnet volunteer groups reveals that this small owl appears to be far more common than previously thought.

## METHODS

I set up a banding station at the Platte River Whooping Crane Maintenance Trust in Hall County. I placed three 12 x 3 m, 60mm mesh nets in a "T" formation

in a small opening within a patch of gallery forest comprised of Eastern Cottonwood (*Populus deltoides*) and Eastern Redcedar (*Juniperus virginiana*). I used a Jimmy Stewart game caller with a continuous loop tape of a Northern Saw-whet Owl "advertisement call" played at approximately 90 dB (Cannings 1993, Whalen and Watts 1999). Station operation started 8 October and continued sporadically through 11 Dec 2004. Nets were open from dusk until 0200 – 0400 the following morning. Net checks occurred at least every 40 minutes, more often in cold temperatures. All owls were identified to species. Sex and age were assigned using unflattened wing chord, body mass, and molt pattern as described by Pyle (1997) and Brinker (personal comm.). All owls were banded with a USGS leg band and released within 25 minutes of capture.

Northern Saw-whet Owls. Photo courtesy of Daniel Kim.

## RESULTS

I operated the station a total of 14 nights for approximately 370 net hours. I captured 16 owls: 14 Northern Saw-whet Owls and 2 Eastern Screech-Owls (*Megascops asio*). Of the 14 Northern Saw-whet Owls, 10 were females and 4 were undetermined sex, while age composition was 4 hatch-year birds, 6 second-year birds, and 4 after-second-year birds (Table 1). Peak captures occurred on 11-12 November, when 9 birds were caught on two nights.

## DISCUSSION

The capture bias towards female, after-hatch-year birds displayed in Nebraska is consistent with banding stations in the southeastern United States. Owl banding stations in the Northeast and mid-Atlantic regions display variable sex and age

capture rates (Brinker et. al. 1997). Capture rates are female-biased (69-96 %) at all stations in eastern and mid-Atlantic regions, with the sex-ratio bias increasing from north to south. The percent of after-hatch-year individuals increased from north to south, but was highly variable among years at all stations (Brinker et al. 1997). Northern Saw-whet Owls are considered uncommon regular winter residents throughout the eastern part of Nebraska (Sharpe *et. al.* 2001), yet only three Christmas Bird Count circles have ever recorded saw-whets (Lincoln, Omaha, and Lake McConaughy) during eight of 95 years with count circle data from Nebraska (National Audubon Society 2005). There are a couple of explanations for the dearth of CBC sightings. First, Northern Saw-whet Owls may not occur in Nebraska every year, as the number of migrating individuals relates to vole populations, resulting in "irruption" years when vole numbers crash in the northern forests, forcing northern owl species to move south in great numbers (Cheveau et al. 2004). Second, these small owls display little winter site fidelity and are not reliably found in the same areas over a series of winters (Marks and Doremus 2000). However, the most likely explanation is that these are small, secretive owls that remain undetected with passive survey methods.

Table 1. Capture data for 14 Northern Saw-whet Owls from Hall County, Nebraska. Date refers to date at time of sunset; therefore, captures occurring after 2359 hours correspond to the next calendar day.

| Date | Time | Sex | Age | Wing chord (mm) | Weight (g) |
|---|---|---|---|---|---|
| 27 October | 0230 | Female | Second-year | 136 | 98 |
| 6 November | 2300 | Female | Hatch-year | 141 | 96 |
| 11 November | 2220 | Female | Third-year | 143 | 100 |
| 11 November | 2120 | Female | Second-year | 139 | 90 |
| 11 November | 2220 | Female | Second-year | 142 | 92 |
| 11 November | 1940 | Female | Hatch-year | 142 | 102 |
| 11 November | 1940 | Female | Hatch-year | 140 | 90 |
| 11 November | 1940 | Female | Hatch-year | 134 | 96 |
| 12 November | 1920 | Female | After second-year | 140 | 90 |
| 20 November | 0200 | Female | After second-year | 142 | 86 |
| Average | | | | 139.9 | 94 |
| | | | | | |
| 28 October | 2130 | Unknown | Second-year | 139 | 84 |
| 6 November | 0030 | Unknown | After second-year | 135 | 86 |
| 12 November | 2120 | Unknown | Second-year | 136 | 86 |
| 12 November | 2120 | Unknown | Second-year | 136 | 86 |
| Average | | | | 136.5 | 85.5 |

## CONCLUSION

Any comparisons made between one year of banding data from Nebraska and multiple studies from the East are tenuous at best. While all stations display female-biased capture rates, annual changes to percent of juvenile/adult captured in eastern populations preclude inferences from a single year of data from one banding station Nebraska. Banding stations throughout the Northeast are associated with local nature centers, and new stations in other regions like Nebraska could provide additional data on Northern Saw-whet Owl migratory patterns and winter distributions. In addition to a nature center staff member, locations near Lincoln and Omaha could draw upon a volunteer core of local birders and college students to run banding stations during weekends. Standardized protocols are available at the Project Owlnet website.

## LITERATURE CITED

Brinker, D. F., K. E. Duffy, D. M. Whalen, B. D. Watts, and K. M. Dodge. "Autumn Migration of Northern Saw-whet Owls (*Aegolius acadicus*) in the Middle Atlantic and Northeastern United States: What Observations from 1995 Suggest." Proceedings of the Second International Symposium on Biology and Conservation of Owls of the Northern Hemisphere, J. R. Duncan, D. H. Johnson and T. H. Nicholls, eds. 1997: 74-89.

Cannings, R. J. "Northern Saw-whet Owl (*Aegolius acadicus*)." *Birds of North America,* No. 42 (A. Poole and F. Gill, eds). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington D.C. 1993.

Cheveau M., P. Drapeau, L. Imbeau, and Y. Bergeron. "Owl Winter Irruptions as an Indicator of Small Mammal Population Cycles in the Boreal Forest of Eastern North America." *Oikos* 107 (2004): 190-198.

Elliot, L., D. Stokes, and L. Stokes. *Stokes Field Guide to Bird Song: Eastern Region.* Time Warner Audio Books. 1997.

Marks J. S., and J. H. Doremus. "Are Northern Saw-Whet Owls Nomadic?" *Journal of Raptor Research* 34 (2000): 299-304

National Audubon Society. The Christmas Bird Count Historical Results [Online]. Available at http://www.audubon.org/bird/cbc [21 April 2005]

Pyle, P. *The Identification Guide to North American Birds: Part 1.* Bolinas, CA: . Slate Creek Press, 1997.

Sharpe, R. S., W. R. Silcock, and J. G. Jorgensen. *Birds of Nebraska Their Distribution and Temporal Occurrence.* Lincoln, Nebraska: University of Nebraska Press, 2001.

Whalen D. M. and B. D. Watts. "The Influence of Audio-lures on Capture Patterns of Migrant Northern Saw-whet Owls." *Journal of Field Ornithology* 70 (1999): 163-168.