



**NORTHERN SAW-WHET OWL MIGRATION  
AT BEAVERHILL LAKE NATURAL AREA  
FALL 2004**

**LISA PRIESTLEY**

Beaverhill Bird Observatory, P.O. Box 1418, Edmonton, Alberta T5J 2N5



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Volunteer Bryn Spence shows a visitor how to band a Saw-whet Owl  
(photo by Lisa Priestley)

## INTRODUCTION

A Northern Saw-whet Owl migration monitoring program was initiated at Beaverhill Lake Natural Area in central Alberta. In 2002 and 2003, 145 and 151 saw-whets were captured respectively using a standard migration monitoring protocol (Priestley and Priestley 2004). A full time program was run in 2004, with the objectives of:

- 1) determining how many Saw-whets were migrating through the Beaverhill Lake region
- 2) determining what age and sex classes of saw-whets were moving through the area
- 3) determining the timing of the fall migration of saw-whets,
- 4) providing educational opportunities for the public,
- 5) creating some video that show the techniques of monitoring saw-whet owls, and
- 6) developing a second monitoring site in cooperation with a volunteer bander.

The following report will detail the results from 2004.

## METHODS

The main study site is located on the southeast end of Beaverhill Lake in central Alberta, Canada (53°22.8'N, 112°31.6'W elevation). The lake is approximately 18 km long and 10 km wide and is located in the aspen parkland ecoregion. In 2004, four saw-whet owl mist nets (60mm mesh) were set up about 150 meters away from the banding laboratory. Two nets were set adjacent to each other to form an L-shaped net array, and two single nets were set on their own. Nets were opened one hour after sunset, and the solicitation call of the saw-whet breeding advertising call (Cannings 1993) was broadcast with a CD player next to the L-shaped net array. Nets were set for four hours from August 15 to October 10 and for six hours from October 11 to November 15. Nets were not set when: temperature was below -20°C, wind was stronger than 3 on the Beaufort Scale, or during precipitation events. Nets were checked every half-hour, and any captured owls were removed from the nets and brought back to the lab for processing.



In 2004, a new secondary site was set up in cooperation with Hardy Pletz (photo right), a volunteer raptor bander, at his acreage south of Millet, Alberta. Beaverhill Bird Observatory provided Hardy with nets, an audiolure, and datasheets, and helped him set up the site. Two nets were set in an L-shape along a creek valley, and the solicitation call of the saw-whet breeding advertising call. Nets were set for between September 28 and November 26 for between 4 and six hours.

Data collected included: age (Pyle 1997), sex (Brinker - [www.projectowl.net.org/df.htm](http://www.projectowl.net.org/df.htm)), weight, wing chord, tail length, and flight feather molt pattern. In 2004, a sample of each feather generation was clipped and four body feather were plucked for a cooperative study on isotopes and sexing (C. Priestley, University of Alberta, pers. comm.). All data was entered into Excel and into a provincial database (BSOD).

Two evening ‘Steaks and Saw-whets’ events were organized as part of the public education component of our project. The event began with a steak barbecue with all the trimmings. Food was followed with a short presentation about the project. The evening concluded with the mist nets being set up for trapping and banding. Small groups of people (<10 people per check) were led to the nets to check for owl captures. If a bird was captured, researchers brought it back to the lab to show all the visitors how birds are handled and measured.

Additionally, the public was invited to visit the lab on any night staff were on site to observe the work that was being done. Finally, there were presentations made throughout Alberta, which highlighted nocturnal owls, and the various monitoring techniques we use.

## RESULTS

### *Beaverhill Lake Site*

In 2004, we caught an amazing 309 saw-whet owls! This is more than double the number of owls captures in any previous year. Most of the owls were hatch year birds, and most were - females.

Table 1. The number of northern saw-whet owls captured at Beaverhill Lake 2002-2004.

Year	Number of Nights	Number of Net Hours	Number of Owls Captured	Number of Owls/Net Hour
2002	74	1097.00	145	0.132
2003	64	903.00	151	0.167
2004	75	1172.00	309	0.264
Total	213	--	322	--

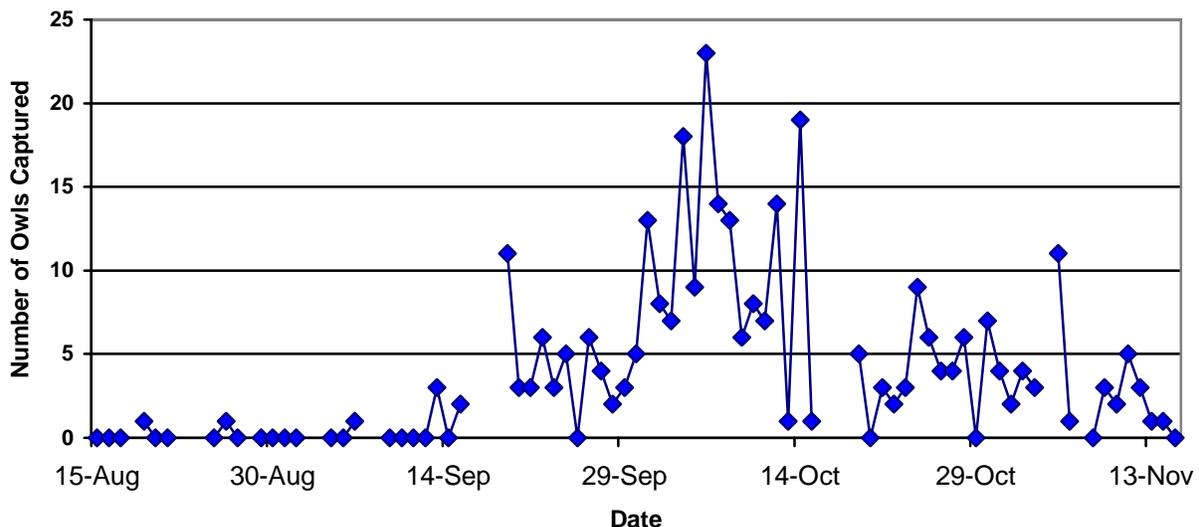


Figure 1. Capture rate (owls/net hour) in 2004 at Beaverhill Lake.

There were two other species of owls captured during the saw-whet owl banding. In 2004, one Long-eared Owl (*Asio otus*) and three Boreal Owls (*Aegolius funereus*) were captured. Only one Boreal Owl was captured in 2003.

**Millet Site**

Hardy Pletz spent 20 nights (189 net hours) trapping for saw-whets at his acreage south of Millet, and caught an amazing 86 saw-whet owls. Three of these owls were recaptures from previous nights, and two owls were foreign recoveries, one from the Beaverhill Lake site and one from the new site at Lesser Slave Lake (R. Krikun, pers. comm.). These are the first two foreign recoveries for migration monitoring in Alberta. There were also two Boreal Owls captured at the Millet site! A short movie was made about the work.

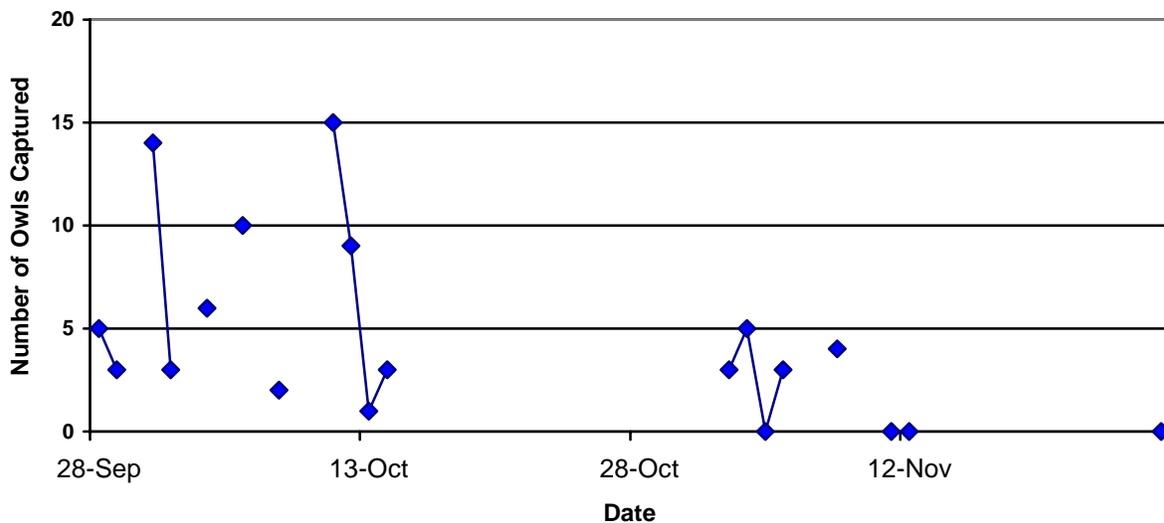


Figure 1. Capture rate (owls/net hour) in 2004 at Beaverhill Lake.

**Public Education**

Public response to the ‘Steaks and Saw-whets’ events was high. In 2004, 104 members of the public attended over the two evenings. An additional 42 people came out to the lab to observe the work on various other nights during the season. This included a group from the University of Alberta Chapter of the Wildlife Society and two people from the Canadian Wildlife Service (Environment Canada). Some video footage was taken of the events.





*The BBO's open air dining room*



© J. Duxbury  
*Matt with his catch*



© J. Duxbury *Friday's well fed Crew*

Presentations were made at the following schools and venues:

- Camrose Outdoor Group (July 21)
- Virginia Park School, Edmonton
- St. Martin's, Edmonton
- Graminia School, Devon
- John Janzen Nature Center – Homecoming weekend, Edmonton's Centennial (Oct. 9-11)
- Ardrossan Junior High – Grade 8 classes (Oct. 13)
- Calgary Field Naturalists – Bird Study Group (Feb. 2)
- Provincial Museum - Museum School grade 4 class (Feb. 17)

## **DISCUSSION**

The data from this monitoring indicates that saw-whets are moving through the Beaverhill Lake Natural Area in good numbers. Additionally, other sites can be used for increasing our knowledge about these tiny owls. We plan to help start another site north of Edmonton near Redwater. More years of data will have to be collected before we can investigate population abundance changes at our site.

As described above, monitoring projects, such as this one, could give us data that indicates a change has occurred to wildlife populations on a local scale. The benefit of such programs increases when monitoring other areas throughout the range of the species, is compared and/or pooled. Lesser Slave Lake Bird Observatory also initiated a Saw-whet migration monitoring program in 2004 (R. Krikun, pers. comm.). Results could help determine the conservation status of the target species over large spatial scales. These analyses are not only interesting to the volunteers that participate in these programs but they could also provide ecosystem managers with information that is essential when decisions are being made.

In addition to this, consideration needs to be given to which target species are selected for monitoring. It is not possible to monitor every species, and many factors can influence the decision about which species are monitored. We chose to monitor the Saw-whet for the following four reasons. Firstly, Saw-whet migration monitoring methods are simple and inexpensive. Secondly, Saw-whets are at a high trophic level, therefore changes in their abundance could indicate larger ecosystem changes. Thirdly, large numbers of Saw-whets can be caught which allows for marginal changes in relative abundance to be detected with statistical significance. Lastly, Saw-whet programs garner a great deal of public interest and support (Priestley and Priestley, in press).

Due to the remote nature of our study site, it was great to have more than 200 members of the public visit to learn about our project while the monitoring was being conducted. Clearly, the amount of interest that this project has attracted is a testament to the appeal of our target species, the Saw-whet. We are excited to continue this monitoring in the future, and are pleased to have TD Friends of the Environment supporting our work in 2005.

## REFERENCES

- Brinker, D.F. 2000. Sex Criteria for Northern Saw-whet Owls. Website: Project OwlNet - <http://www.projectowl.net/org/df.htm>
- Cannings, R. 1993. Northern saw-whet owl (*Aegolius acadicus*), in The Birds of North America No. 42 (A. Poole and F. Gill, eds.), no. 42. Acad. Nat. Sci., Philadelphia.
- Erdman, T. and D. Brinker. 1997. Increasing mist net captures of migrant northern saw-whet owls (*Aegolius acadicus*) with an audiolure. In: Biology and conservation of owls of the Northern Hemisphere; Second International Symposium, February 5-9, 1997, Winnipeg, Manitoba, Canada by J. R. Duncan, D. H. Johnson and T. H. Nicholls (eds.). U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, St. Paul, MN. GTR-NC-190. Pp. 533-544.
- Frye, G.C. and R.P. Gerhardt. 2003. Northern saw-whet owl (*Aegolius acadicus*) migration in the Pacific Northwest. *Western North American Naturalist* 63(3):353-357.
- Hamilton, S. 2000. Idaho Bird Observatory owl migration project: fall 2000 owl monitoring report. Idaho Bird Observatory, Boise, ID. 12 pp.

Holroyd, G.L. and J.G Woods. 1975. Migration of the saw-whet owl in eastern North America. *Bird-Banding* 46(2): 101-105.

Hussell, J.T. and C.J. Ralph. 1998. Recommended methods for monitoring bird populations by counting and capture of migrants. Website: <http://www.bsc-eoc.org/download/Hussell-Ralph%20migmon.pdf>

Levesque, P.G. 2003. Nocturnal owl monitoring at Rocky Point Bird Observatory. Poster presented at Raptor Research Conference in Anchorage Alaska September 2003.

Marks, J.S. and J.H. Doremus. 2000. Are northern saw-whet owls nomadic? *Journal of Raptor Research* 34(4):299-304.

Pyle, P. 1997. *The identification guide to North American birds: part 1*. Slate Creek Press, Bolinas, CA. 732 pp.

Slack, R. and C. Slack. 1987. Spring migration of long-eared and northern saw-whet owls at Nine Mile Point, New York. *Wilson Bulletin* 99(3): 480-485.

Takats, D.L., C.M. Francis, G.L. Holroyd, J.R. Duncan, K.M. Mazur, R.J. Cannings, W. Harris, and D. Holt. 2001. Guidelines to nocturnal owl monitoring in North America. Beaverhill Bird Observatory and Bird Studies Canada, Edmonton, Alberta. 24 pp.

Taverner, P.A. and B.H. Swales. 1911. Notes on the migration of the saw-whet owl. *Auk* 28: 329-334.

Weir, R.D., F. Cooke, M.H. Edwards, and R.B. Stewart. 1980. Fall migration of saw-whet owls at Prince Edward Point, Ontario. *Wilson Bulletin* 92(4):475-488.

Whalen, D. and B. Watts. 1999. The influence of audio-lures on capture patterns of migrant northern saw-whet owls. *Journal of Field Ornithology* 72(2): 163-168.



Photo of the author Lisa Priestley with Saw-whet Owl

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**APPENDIX – Photos of Northern Saw-whet Migration Monitoring in 2004, © Lisa Priestley**

