

**THE VIRGINIA SOCIETY OF ORNITHOLOGY
2006 FORAY:
A FOCUS ON THE NORTHERN SAW-WHET OWL
(*AEGOLIUS ACADICUS*)**

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INTRODUCTION

For the first time in its history, the 2006 Virginia Society of Ornithology Breeding Bird Foray departed from its traditional all-species coverage and instead targeted a single focal species, the Northern Saw-whet Owl (*Aegolius acadicus*). This cavity nesting species is eastern North America's smallest owl. It prefers coniferous forest, but may also be found in mixed or deciduous forest or woodlands (Cannings 1993). Small mammals comprise the majority of its diet (Cannings 1993). During the last decade, Northern Saw-whet Owl fall migration has been monitored by several banding stations at locations across Virginia, including the Eastern Shore, central Piedmont, and Shenandoah Valley. Data gleaned from these stations suggest that Virginia is an important link along these owls' migratory corridor (Brinker et al. 1997; Mellinger pers comm). Past research has also revealed much about habitat use of wintering owls, particularly along the Eastern Shore (Whalen et al. 1997; Churchill and Brinker 2000; Whalen and Watts 2002;).

Far less is known about the distribution of breeding Northern Saw-whet Owls in Virginia. The core of its breeding range in eastern North America extends from southern Ontario, Quebec, and the maritime provinces of Canada to northern Ohio, Pennsylvania, and New Jersey (Cannings 1993). However, peripheral breeding populations have been identified in the southern Appalachians, including high elevation forests in western Virginia. The first record of a successful nesting attempt by a Northern Saw-whet Owl pair in Virginia was reported in 1995 in Highland County, when an active nest was discovered in a nest box intended for northern flying squirrels (Pagels and Baker 1997). Other anecdotal breeding reports or

sightings of juveniles during summer are from such locations as Shenandoah National Park and Mt. Rogers, including apparently unsuccessful nesting attempts in artificial nest boxes (Pagels and Baker 1997).

Given the current scarcity of information about this species in Virginia and its vulnerability to habitat loss, we determined that a more systematic survey of breeding Northern Saw-whet Owls would contribute needed baseline data to support future population assessment and conservation efforts. Furthermore, recent surveys in Maryland and Pennsylvania have found owls in greater abundance and in more varied habitat than expected (Brinker, pers. comm.). Perhaps greater survey effort could similarly reveal a more extensive breeding population than previously thought. Finally, nocturnal species in general have received scant attention during past forays. A foray targeting such a strongly nocturnal species would begin to address this significant void in the collective foray effort.

METHODS

The survey was conducted from April 15 through June 6, 2006. Eighteen participants completed 16 routes by automobile in 13 different counties (Table 1). With the exception of Richmond County, which is located on the Northern Neck, all counties in which counts were conducted were situated along the Blue Ridge or bordered West Virginia. Routes were 6.5k long, with stops approximately 800m apart, and were run during the hours between dusk and midnight. Surveyors stopped at sites that were forested on at least one side of the road and free of human disturbance, especially noise pollution. Each survey stop was 15min long and consisted of audio-playbacks broadcasted for short intervals and alternated with listening periods (Appendix I). Calls were broadcasted so that they could be heard from at least 500m away. A total of 10min and 40sec during each stop was dedicated to watching for closely approaching owls and listening for owl vocalizations.

Appendix I. The sequence of listening and calling periods on playback tapes used by foray participants during survey road-side stops. The activity of the Period is indicated as either (L) for quiet listening or (P) as observation/listening while the tape is playing owl vocalizations (Gross and Brauning, unpublished Pennsylvania Game Commission technical report).

Time	Period	Activity
0:00	L	Listen for owl vocalizations (2 minutes)
2:00	P	Tape plays owl vocalization (15 seconds)
2:15	L	Quiet. Listening period (25 seconds)
2:40	P	Tape plays owl vocalization (15 seconds)
2:55	L	Quiet. Listening period (25 seconds)
3:20	P	Tape plays owl vocalization (15 seconds)
3:35	L	Quiet. Listening period (25 seconds)
4:00	P	Tape plays owl vocalization (15 seconds)
4:15	L	Quiet. Listening period (25 seconds)
4:40	P	Tape plays owl vocalization (15 seconds)
4:55	L	Listen for 2 minutes
6:55	P	Calling period. Continuous vocalizations for 3 minutes (15 seconds of calls followed by 2-second breaks).
10:00	L	Quiet. Listening period (5 minutes)
15:00	END	End of survey

Participants were instructed to avoid conducting surveys during steady rain or under windy (Beaufort scale 4 or greater) or foggy conditions.

RESULTS AND DISCUSSION

Northern Saw-whet Owl responses were detected at fifteen out of 125 total survey stops, a 12% response rate (Table 1). While the peak number of responses occurred in Montgomery County (Table 1), a total of six survey routes, all conducted in different counties, yielded at least one Northern Saw-whet Owl vocal response. The earliest detection occurred on April 28 in Giles County, and the latest was on May 30 in Frederick County (Table 1).

The locations and characteristics of sites where Saw-whet Owls were detected were consistent with previous reports of breeding owls in Virginia (Pagels and Baker 1997). Lack of detections may be attributable not only to absence of owls, but failure of playbacks to elicit responses from territorial pairs. Conversely, if owls were not present at the particular time when a given survey route was conducted, they may have established their territories earlier. Our results nonetheless reinforce prior anecdotal evidence that breeding Northern Saw-whet Owls are more widespread than previously thought.

Most current breeding range maps for the Northern Saw-whet Owl show the southeastern extent of their contiguous range as a narrow finger extending south-southwest from western Maryland and into northern West Virginia, and include a separate, isolated breeding population that straddles the border between Tennessee and North Carolina (Cannings 1993; Johnsgard 2002; Alderfer 2006). Our results, in conjunction with published breeding reports from the 1990s, may force a reconfiguration of this species' range map to include a corridor that connects the southern edge of the contiguous breeding population in western Maryland to the

Table 1. Locations, calendar dates, and detections of Northern Saw-whet Owls in response to call playbacks. Playbacks were conducted at 800m intervals along 6.5km auto routes.

County	Calendar Date	No. of detections
Augusta/Albemarle	May 9	3
Clark	May 10	-
Frederick	May 30	3
Giles	April 28	1
Giles	May 9	1
Greene	April 15	-
Highland	May 9	2
Highland	May 10	-
Highland	May 14	1
Highland	May 15	-
Montgomery	May 6	5
Richmond	May 11	-
Rockingham	June 6	-
Rockingham/Greene	May 18	-
Shenandoah	May 16	-
Warren/Rappahannock	April 22	-

isolated pocket along the Appalachian spine to the southwest. Furthermore, our data suggest that this corridor would have to be drawn deeper into western Virginia than any current range map indicates.

This survey was limited in scope, but calls strongly for more extensive monitoring of breeding Northern Saw-whet Owls in Virginia. Populations at the peripheries of a given species' geographical range are often most vulnerable to decline in the face of environmental challenges. Since the Virginia population is situated near the southeastern extreme for the species, it may suffer sooner than other populations from breeding resource changes stemming from such causes as invasive species, deforestation, and global warming. Finally, given positive responses of these owls to nest boxes (Cannings 1993; Pagels and Baker 1997), perhaps greater initiative could be taken to expand nest box availability to increase the frequency of successful nesting attempts.

ACKNOWLEDGEMENTS

We thank the following individuals for their participation in this foray: Mark Adams, Fred Atwood, Kurt Gaskill, Bruce Grimes, David Hogg, Clyde Kessler, Harry and Beth Lumadue, Mamie Mellinger, Bill Minor, Bill and Peggy Opengari, Judy Palladinetti, Pat Polentz, Robert Powers, Mary Ratliff, Paul Saunier, Alex and Bill Seebeck, John Spahr, David Spears, Sandy Spencer, and Brenda Tekin. We also thank the National Park Service for granting permission to conduct survey routes along Skyline Drive in Shenandoah National Park. David Brinker and Scott Weidensaul provided valuable information for the setting up the protocol for this survey.

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