Project Title: Rocky Point Bird Observatory Avian Monitoring – Northern Saw-whet Owl Project:

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Project Status: started 2002; ongoing

Introduction:

The Northern Saw-whet Owl (*Aegolius acadicus*) is a small, migratory raptor which has been monitored extensively in eastern North America with well over 150,000 individuals banded since 1955.

Since the fall of 2002, Northern Saw-whet Owls have been actively monitored at Rocky Point during their southward migration. A total of 2803 Northern Saw-whet Owls have been banded at Rocky Point since this project's inception. Owls banded at Rocky Point have been recaptured at the banding site in subsequent years, as well as found or recaptured in British Columbia, Washington, California, and Saskatchewan.

Study Area and Methods:

Northern Saw-whet Owl migration was monitored following protocols established by Project Owlnet (www.projectowlnet.org), a continent-wide consortium of banding stations. Owl monitoring at Rocky Point was conducted nightly from one half hour after sunset for six consecutive hours during the period from 15 September to 31 October, except when constrained by military activities or inclement weather. Banding occurred on a total of 43 nights during this period, although on several dates the schedule was shortened due to rain.

The mist-netting site established in 2008, southeast of the banding station was used again in 2010. A triangle of three proximate 12-meter-long x 2.6 meter-high mist nets

was erected among the willow and alder, and an audio lure (playing a Northern Saw-whet Owl territorial call) was placed in the centre of the triangle. Five passive nets were also employed: one to the southwest, one directly west, one to the northwest, and two to the east of the owl-triangle.

Once captured, the owls were removed from the nets and numbered aluminum leg bands were affixed. In addition, various morphometric measurements were taken and the age of the birds was determined. When possible, using the criteria from Project Owlnet, the sex of the owl was also determined, then the bird was released.

Results:

In 2010, 525 Northern Saw-whet Owls and 7 Barred Owls (*Strix varia*) were banded during 1794.78 net hours of operation. The capture rate of Northern Saw-whet Owls was 0.29 birds/net hour, slightly higher than 2009's rate of 0.27 birds/net hour and well below the best rate of 0.42 birds per net hour achieved in 2003. Of the 525 Northern Saw-whet Owls banded, 77.0% were hatch-year birds, 10.5% were second-year, 11.8% were after second-year and 0.8% were unspecified after hatch-year birds.

The captures were well distributed throughout the banding period, with an extended peak week occurring between 28 September and 4 October. 179 Northern Saw-whet Owls, 34.1 % of the season's total, were captured and banded during this week. The highest volume night was 29 September, with 38 Northern Saw-whet Owls banded.

As in previous years, the majority (51.2%) of the Northern Saw-whet Owls captured were determined to be females using the combination wing chord/mass criteria established by Project Owlnet. Only 16.6% were identified as male. The remaining birds fell within the overlap range of the two sexes and thus their gender could not be determined through measurements.

Six Northern Saw-whet Owls banded at Rocky Point in 2010 were subsequently recaptured on-site, only one of which was recaptured on the same night as it was

banded, as is the usual case. The other five captures ranged from 1 to 16 days after original capture, indicating significant stopover use of southern Vancouver Island this year. There were no between-year or foreign recaptures in 2010.

Although Barred Owls are not specifically targeted for capture, they are also found at the banding site and are sometimes caught in the mist-nets. Five of the seven Barred Owls captured in 2010 were hatch-year birds and two were after hatch-year individuals. Based on the criteria in Pyle (1997), one bird was determined to be a male and two were determined to be female. The measurements of the other four birds fell within the range of overlap between males and females, so the gender could not be determined. A Barred Owl captured on the first night of banding (15 September) was recaptured in the same net 11 nights later.

Discussion:

Northern Saw-whet Owls are believed to have a four-year population cycle synchronized with that of their most common prey species, deer mice (Swengel and Swengel 1995). Captures in 2010 were predicted to be higher than in 2009 based on this cycle, and in fact, this happened. One interesting pattern that is developing concerns the proportion of hatch-year birds over the cycle as shown in Figure 1. As the population is increasing during each four-year cycle, the proportion of hatch-year birds is decreasing. This is counter-intuitive and is worthy of investigation. Priestley (2008) suggests that Northern Saw-whet Owls may demonstrate a significant northward post-breeding dispersal before their southward migration. This could partially explain the unexpected decrease in hatch-year birds during an increase in migratory populations and if confirmed, could have international conservation implications for birds encountered at Rocky Point.

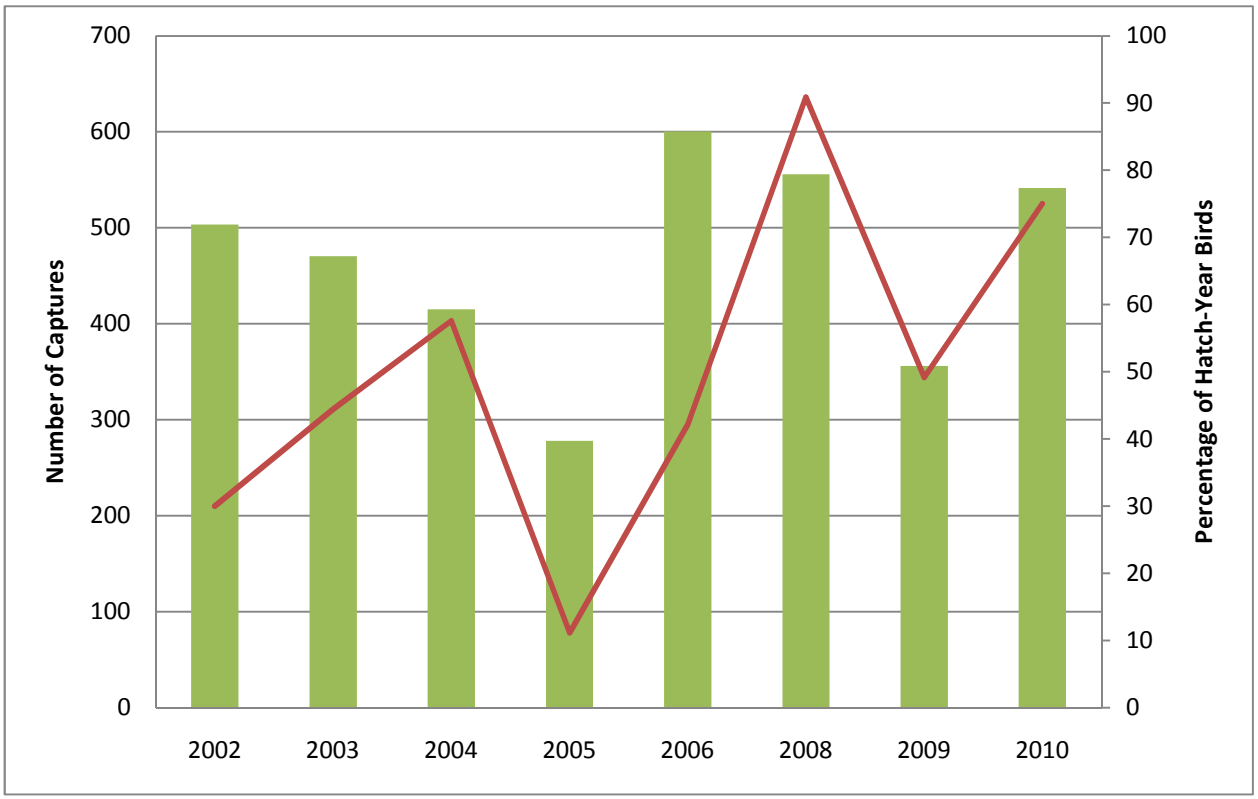

Figure 1. Northern Saw-whet Owl Captures and Percentage of Hatch-Year Birds, 2002-2010 (Note: banding was not conducted in 2007)

Conclusions and recommendations:

Rocky Point is a significant location on the southward route of the Northern Saw-whet Owl. As one of a small number of Project Owlnet sites west of the Rocky Mountains actively monitoring this species, continued banding operations at Rocky Point contributes greatly to the knowledge base for western populations. RPBO will be able to provide a coastal perspective to the development of sexing measurement criteria, which appear to have geographic variances. Efforts should be made to identify the geographic origin of the birds occurring at Rocky Point. Stable isotope research could be used to determine if the birds encountered here are breeding north or south of this area.

While it is clear that Rocky Point is on a significant migration corridor, movement of Northern Saw-whet Owls in western North America is still poorly understood. RPBO should attempt to capture and band owls at other locations on southern Vancouver

Island during the peak to establish if this migration corridor is narrow, focused over the southern tip of the island, or more broadly distributed.

All data from this project have been submitted to the Canadian Wildlife Service for inclusion in their database and submission to the Bird Banding Laboratory of the U.S. Geological Survey.

Acknowledgements:

The Northern Saw-whet Owl project was initiated by Paul Levesque in 2002. In 2010, project manager/licensed bander Ann Nightingale was assisted by RPBO's bander-in-charge Brian Pomfret, intern, Jessie Fanucchi and many dedicated volunteers. In 2010, 886 hours of field work were contributed to this project.

References:

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