

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

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**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 3,274 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 (B.C.), Washington, California, and Saskatchewan.

**Study Area and Methods:**

Northern Saw-whet Owl migration was monitored following protocols established by Project OwlNet ([www.projectowl.net](http://www.projectowl.net)), 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. Two test nights were conducted in early September after Northern Saw-whet Owls were encountered during passerine banding in the daytime. Several nights were lost due to base closures and, at the end of the season, by predation issues. Banding occurred on a total of 31 nights during this period, although on several dates the schedule was shortened due to rain or due to predation issues.

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 each bird was determined. When possible, using the criteria from Project OwlNet, the sex of the owl was also determined, before the bird was released.

### **Results:**

In 2011, 472 Northern Saw-whet Owls and 3 Barred Owls (*Strix varia*) were banded during 1,313.4 net hours of operation. The capture rate of Northern Saw-whet Owls (0.36 birds/net hour) was considerably higher than 2009's rate (0.27 birds/net hour), but below the highest rate (0.42 birds per net hour) achieved in 2003. Of the Northern Saw-whet Owls banded in 2011, 44.5% were hatch-year birds, 38.8% were second-year, 14.4% were after second-year and 2.3% were unspecified after hatch-year birds. The ratio of HY to AHY birds was unexpected and more typical of a "slump" year which generally occurs every four years. The cause of the atypically low number of HY birds could be the result of a poor breeding season, a good breeding season, but fewer food resources after the young had fledged, or an abundance of prey on the breeding grounds, keeping the birds closer to the breeding territory instead of dispersing. This anomalous ratio is another reason to investigate the geographic source of owls passing through Rocky Point in the fall.

As in previous years, the majority (54.7%) of the Northern Saw-whet Owls captured were classified as females using the combination wing chord/mass criteria established by Project OwlNet. Only 14.0% 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.

Three Northern Saw-whet Owls banded at Rocky Point in 2011 were subsequently recaptured on later monitoring nights. Five birds were recaptured the same night as they were banded, which was quite unusual. Two birds were recaptured the night after being banded. There were two between year recaptures of Northern Saw-whet Owls in 2011: a bird originally banded on 25 Sep 2009 was recaptured on 7 Oct 2011, and an individual originally banded on 22 Sep 2010 was recaptured on 19 Sep 2011. There were no foreign recaptures this year.

Barred Owls are not specifically targeted for capture; however, they do occur at the banding site and are sometimes caught in the nets. Only three Barred Owls were captured during nocturnal banding, however two of them were captured multiple times. One captured on 16 Oct was subsequently retrapped on 17 and 28 Oct; the second was originally captured on 14 Oct and recaptured on 18 Oct. Banded Barred Owls were frequently seen in the net lanes. In 2011, a directive from the Ministry of Environment required release of the Barred Owls in the immediate vicinity of the banding site while we were still using the audio lure. Although they would leave the area for a time, they returned frequently. Despite our attempts to chase them away from the site, the result of release in the immediate area was that seven Northern Saw-whet Owls were predated by Barred Owls in the nets in 2011. This exceeds our average losses during the banding season. Other strategies tried to reduce the predation were increased net checks, constant monitoring at the nets, use of a bal-chatri lure to catch the Barred Owls, and closing of several nets to increase monitoring and decrease opportunities for predation. Ultimately, we ceased owl banding at Rocky Point three days earlier than planned due to an unacceptable risk to the Northern Saw-whet Owls.

### **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). Based on that cycle, captures in 2011 were predicted to be higher than in 2010, which in fact was not the case. However, ten nights of owl banding during the peak of the season were lost due to military activity. It is believed that had we been banding those nights, last year's captures would have been exceeded.

Priestley (2008) suggests that Northern Saw-whet Owls may demonstrate a significant northward post-breeding dispersal before their southward migration. This birds banded at Rocky Point may originate both south and north of the banding site. If confirmed, this could have international conservation implications for birds encountered at Rocky Point.

In 2012, Rocky Point Bird Observatory will be initiating an international project to band breeding birds and their offspring in Boardman, Oregon with the hope of determining a migration linkage.

#### **Conclusions and recommendations:**

Rocky Point is an important 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. A joint banding program with GreenWood Resources in Boardman, Oregon, may also shed some light on this topic.

Barred Owls continue to be a threat to Northern Saw-whet Owls attracted to the audio lure. We recommend that permits be obtained to colour-mark captured owls to aid in identification of returning individuals, and that permission be obtained to move Barred Owls away from the banding site (i.e. at least out of range of the audio lure, but preferably further away).

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. In 2011, during base closures and after the banding period was curtailed by excessive predation, owl banding was conducted at nearby Pedder Bay Marina. The capture rate was considerably lower than the preceding and following nights at Rocky Point, except on 31 October when 17 owls were captured.

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 2011, banding responsibilities were shared by Ann Nightingale Jessie Fanucchi, Rick Schortinghuis and Colin Jennings and was supported by intern Emily Barnewall and many dedicated volunteers. In 2011, a total of 848 hours of fieldwork were contributed to this project at Rocky Point.

#### **References:**

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