

# Long-eared Owl Breeding Survey

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*Michael Motek*



## Abstract

Following the incidental capture of three Long-eared Owls (*Asio otus*) (LEOW) during the fall 2020 Northern Saw-whet Owl Migration Monitoring at the Rocky Point field station located at the southernmost tip of Vancouver Island, British Columbia, on the Department of National Defense property at Rocky Point, the question arose as to whether or not a breeding population might have established itself at Rocky Point. A two phase trail was conducted using audio lures, call playback and human observation. While many suitable nest sites were identified no LEOW were detected in the study and it is assumed that LEOW are not breeding at Rocky Point.

## Introduction

LEOW are infrequent visitors to Vancouver Island. Individual LEOW are occasionally observed in the winter but, apart from a single hand-captured owl in 2017 and a skeleton found circa 1994, no evidence of them had been detected at Rocky Point. The capture of three owls of this species, two juveniles and one adult, in the fall of 2020 led to the conjecture that they might be breeding locally. A 1980's breeding record from San Juan Island in Washington State provided was cited as evidence that this might be possible.

A two phase study was proposed by Michael Motek of Rocky Point Bird Observatory. This study would use Autonomous recording units (ARU's) and call playback devices to determine if LEOW were present in the breeding season. The second phase would use camera traps and human observation to confirm successful breeding by observing food deliveries.

## Methodology

### Proposed

A two phase study was proposed as outlined below.

### *Phase 1:*

Method: Using ARUs and call playback attempt to determine whether or not LEOW are nesting at Rocky Point Ammunition Depot. Audio recorders would be installed at sites in the front and back meadows supplemented with call playback units. The call playback units would broadcast male LEOW advertisement calls, female LEOW food demand calls and LEOW wing claps. These would be played once every 3-4 days for approximately 40 seconds once an hour from sunset to sunrise. Audio recorders would run continuously from ½ hour before sunset to ½ hour after sunrise.

The proposed locations were near passerine net 4 in the front meadow, at the pond and near the “barn” in the back meadow.

Audio recordings were reviewed between site visits. Priority was given to the dates when call playback was being used as it was thought this was the most likely period in which a response would be obtained. Weather data from the Race Rocks weather station were used to further prioritize which recording periods to review, time periods with high wind and/or rain were de-prioritized. Audacity software (<https://www.audacityteam.org/>) was used to view the spectrograms, and candidate segments were played to confirm the species. Segments of the recordings that might be of interest for future projects were tagged using the label feature of Audacity. A license for automated audio analysis software was not purchased as part of this project but the sound files were saved in the event that RPBO obtains a license in the future.

### *Phase 2 – Look for Signs of LEOW Activity*

Method: Using camera traps and onsite observation to monitor possible nest sites.

### **Actual**

#### *Phase 1*

As the tree to which the ARU would be attached at net 4 was difficult to access it was determined that net 5 was a better location for the front meadow and so a Swift ARU and a FoxPro Patriot playback unit were deployed to that location. The “barn” was a suitable location and a second Swift ARU and FoxPro Patriot playback unit were installed there. The pond was not a suitable location as the noise from the stream draining it would mask any owl vocalizations. This resulted in an AudioMoth being deployed in a tree in the upper west meadow. A second AudioMoth became available and was installed at the T-junction facing into the meadow.

*Table 1: Monitoring station locations*

Location	Coordinates	ARU	Playback unit
Front meadow – net 5	48.3200307, - 123.5468601	Swift	Y
Back meadow – “barn”	48.3231305, - 123.5479308	Swift	Y
Back meadow – T junction	48.3258285, - 123.5467653	AudioMoth	N
Western back meadow	48.3220897, -	AudioMoth	N

A survey for suitable LEOW nesting sites was also conducted. Several suitable sites were observed, however the presence of several pairs of Great Horned Owls (*Bubo virginianus*) would likely deter any attempts.



Figure 1: Suitable LEOW nest site

Credit: Michael Motek

## **Phase 2**

Unfortunately the only camera trap that was available was damaged and had to be returned for service. The protocol was changed to conduct on-site observation supplemented with audio recording for 2 hours once/week with call playback of juvenile food begging calls used to attract any adult LEOW.

## Results

### Phase 1

Including installation and removal of equipment a total of 8 site visits were undertaken in this phase. A possible LEOW call was detected by the ARU in the front meadow at 02:38 on 21 February 2021. This call was extracted from the larger sound file and sent to a number of experts. There was a difference of opinion as to whether or not this was a LEOW call. The possibility that this was an instance of the ARU picking up the broadcast playback call from the back meadow was considered. The timing of the calls was compared to the known broadcast call time as captured by the ARU in the back meadow. There was a discrepancy of 4 minutes between the call playback and the recording by the ARU in the front meadow which caused this possibility to be discounted.

### Phase 2

Based on the call detected on 21 February 2021 the decision was made to proceed with Phase 2. This resulted in a total of 3 site visits between the dates of 25 April 2021 and 15 May 2021. No LEOW were seen or heard on any of these visits.

## Conclusion

Long-eared Owls are not breeding on the grounds of the DND property at Rocky Point.

Although thought to be unlikely, it is possible that the single note that was heard in phase 1 might have been from the playback unit at the front due to a transient atmospheric anomaly. Tania Tripp did confirm that the clocks on the Swift ARUs run fast, however, it was judged that the time interval was too great for this to be the front meadow ARU picking up the call playback from the back meadow. Additionally, since no other call playback sequences were captured by the opposite ARU's during the project this hypothesis is suspect and it remains unclear as to the source of this call.

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