MIGRATORY SMALL OWL BANDING IN THE WESTERN DAKOTAS

2018 Report for Collections of Protected Birds for Scientific Purposes
Permit # GNF04814512

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In 2012, Bird Conservancy of the Rockies established owl banding stations during the fall migration period along the Little Missouri River corridor, focusing on the Northern Saw-whet Owl *Aegolius acadicus* (NSWO). In 2018 owls were banded at Peaceful Valley Ranch (PVR) in the south unit of Theodore Roosevelt National Park (N46.77773, W103.51591), Billings County. Owls also were banded at two South Dakota sites in Custer and Black Hills National Forests. A banding station consisted of an audiolure which broadcast the NSWO territorial call surrounded by mist nets.

Between October 1 and October 27, banders caught 34 NSWO (Table 1) and one Eastern Screech-owl *Megascops asio* in 21 nights of banding. Although 2018 was predicted to be a low owl year because of the four-year cycle (Fig. 1), this capture rate is the lowest on record at the PVR site. Of the NSWO, 65% were female, 15% male, and 20% unknown sex. One-third (35%) of the NSWO were juvenal (hatch-year) birds.

Table 1. Summary of effort and Northern Saw-whet Owl captures at the Peaceful Valley banding station during fall 2018. One net-hour is equal to one six-meter net open for one hour.

<table>
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<tr>
<th>2018 dates</th>
<th>Num nights</th>
<th>Total Num hours</th>
<th>Num net-hrs</th>
<th>Total Num owls</th>
<th>Num owls/hour</th>
<th>Num owls/net-hour</th>
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Figure 1. Average number of Northern Saw-whet Owls captured per hour by year and location.
Two NSWO caught at Peaceful Valley Ranch in 2018 were already banded (Table 2). One had been banded in Fall 2017 at Peaceful Valley Ranch. The second bird was banded in 2015 at Beaverhill Bird Observatory in eastern Alberta.

In 2018, 45 visitors observed banding at Peaceful Valley Ranch.

**Table 2.** Dates and time elapsed between captures for Northern Saw-whet Owl recaptures at Peaceful Valley Ranch, Theodore Roosevelt National Park, ND in 2017.

<table>
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<tr>
<th>Original Banding Location</th>
<th>Original Banding Date</th>
<th>Recapture Date</th>
<th>Time Elapsed (days)</th>
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The Peaceful Valley site on the Little Missouri River continues to be a major and active corridor for migrating owls. From 2012 to 2018, 737 NSWO have been banded during fall migration and 18(2.4%) have been recovered in subsequent years either at Peaceful Valley Ranch (14 birds) or by other banders (4 birds). Recoveries show that owls moving through this area appear to be almost entirely from the north in most years (2014-2018), while in other years, are from a very large area and appear not to follow a particular pathway (2013). Unfortunately, there are no banding stations to the west or south of the Dakotas and we don’t know where most (98%) of our owls come from. Nevertheless, continued owl banding in North Dakota will not only help us understand owl migration patterns in the Great Plains, but will continue to fill a gap in the continent-wide NSWO monitoring project.

**Acknowledgements:** Funding for this project was provided by the North Dakota Watchable Wildlife Fund, administered by the North Dakota Game and Fish Dept and Theodore Roosevelt National Park.
Capture Table abbreviations:

Species:  
NSWO = Northern Saw-whet Owl  
EASO = Eastern Screech-owl

Capture:  
1 = new band  
2 = repeat – caught previously this fall  
3 = foreign recapture – banded at a different site  
4 = return – banded at the same site in a previous year

Fat:  
0 = none  
1 = trace  
2 = thicker line

Age:  
0 = unknown age  
1 = after-hatch year (adult)  
2 = hatch-year (juvenile)  
5 = second-year  
6 = after second-year

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