



Photo by Ken Sobon

Northern Saw-whet Owl Migration Monitoring Report 2018

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Northern Saw-whet Owl Season Summary 2018 at the Big Chico Creek Ecological Reserve

Abstract

Ken Sobon directed the spring and fall banding Northern Saw-whet Owl Migration Monitoring and Nest Box Program at the Big Chico Creek Ecological Reserve. We banded four new owls during our winter/spring monitoring and seven were recaptured from the previous fall, 2017. Fall migration owl numbers were high although field work was halted by the CampFire on November 8. We sampled two more days in late November and captured six new owls. We banded a total of 125 new saw-whets and had seven same season recaptures. Females (n=70) and after hatch owls years old (n=72) were most abundant. We set up nets on 24 nights from 8 October- 31 November and captured 10 owls on opening night. and captured two new Western Screech Owls. One of the owls banded at the Reserve in 2017 was recovered in 2018 in British Columbia, Canada. For a second year, female screech owl band #200, nested in Nest Box #15 and produced four owlets. Ken also banded three owlets in a box he installed in Paradise.

Results and Discussion

Winter-Spring Summary, banding and nest box program

During our winter/spring monitoring, three nights spanning from 25 January – 10 March, we recaptured seven Northern Saw-whet Owls (*Aegolious acadicus*, NSWO), all previously banded during fall migration in 2017. We had aged all as hatching year (HY) birds in the fall and each was recaptured between 3-5 months later, showing that the Reserve provided good wintering habitat for these young owls. Our banding outreach included two public events: Chico's Snow goose Festival (SGF) in January and Chico State's College Student Camp-out in March. Participants of the SGF got to meet five owls and students at the Camp Outing met three! We also recruited volunteers from these two outings for our NSWO monitoring project.

In 2016, we installed nest boxes to determine potential nesting of saw-whets on the Reserve. Although we have yet to document use by NSWO, for the second year in a row, a Western Screech Owl (*Megascops kennicottii*) nested in box #15 and raised four young (Figure 1). She is the same female who nested in the box in 2017 and raised two young.



Figure 1. Western Screech Owl mom and four owlets inside Nest Box 15

Fall 2018 Owl Population

Our fall migration monitoring season was very good, with a total of 125 new owls banded (Figure 2), despite losing one full week of banding due to the Camp Fire beginning November 8. Fortunately the fire did not reach the Reserve but the air quality, threat of evacuation, and devastation of the community all around, stopped our season short. Some of our volunteers lost their homes and all of us were impacted in some way due to the fire. We can't really know how the NSWOW fared during this time, but no doubt many were lost because the fire swept through the surrounding area so quickly. However, we ran the station on November 27 and 30 and captured two and four new owls, respectively. We also had recaptures on these nights and our second of the season WESO.

NSWO BANDED AT BCCER

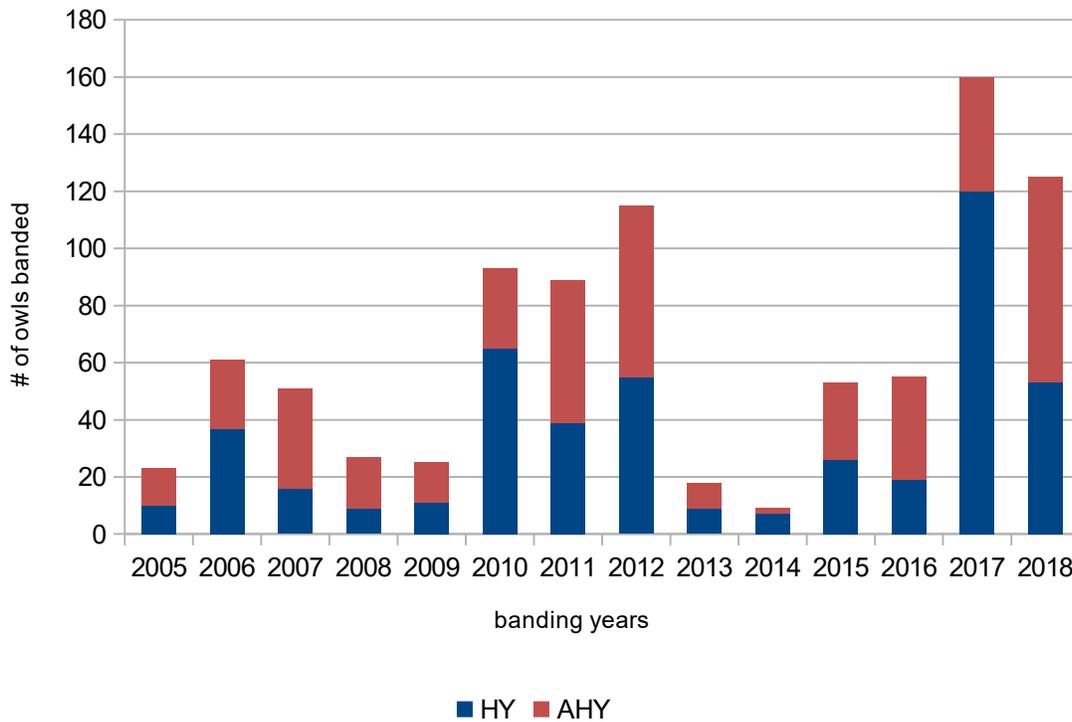


Figure 2. Number and ages of owls banded over all banding years

Recaptures

No owls from previous years were recaptured in 2018. Recaptures are generally low over all years ranging from 0-2 recaps (Table 1). The low recapture rate indicates that the owls don't always use the same migration route and wintering areas used in previous years, have a variable adult survival rate year to year, or are savvy to the nets and audiolure after being captured before (but see below). I assume a combination of the three.

We did recapture seven same-season 2018 individuals ranging from 1-30 days from original banding, showing owls are spending time on the Reserve. One female originally banded on October 27, 2018 was netted two more times on November 4 and November 27. During this time she maintained a very healthy weight of over 90 grams, indicating she was a skilled hunter and/or there was a good fall prey base of rodents on the Reserve.

Age

Young HY owls hatched in 2018, made up 42% of the population this year (n=53). We aged 72 as adults, 48 hatched in spring 2017 (SY), and 24 were 3 years or older (ASY). Although NSWOW can live over nine years (info based on banding), these tiny predators don't typically have a long lifespan. Relative to last year, we had fewer

HY, so this population of owls did not produce as many fledglings, or there was a higher mortality rate of young. Figure 2 shows the number of HY and AHY owls banded each year.

Sex

Sex is determined by the wing chord length and mass of the owl. Females are larger than males and there is an overlap zone between the sexes. As usual, our population consisted of mostly females, 70 females, 11 males, and 44 of unknown sex. Theories about this dramatic ratio seen at all NSWO owl banding stations include, 1) the males remain on territory and do not migrate and 2) males are not attracted to the broadcast of the audiolure we use to attract the owls, and therefore rarely fly into the nets.

A Surprise Recovery!

In bander’s terms, a recovery is defined as an owl subsequently captured at a different banding station other than the original banding site. At CSU Chico Reserves we have banded over 900 owls since we first opened the monitoring station in 2005. This is the very first time another station has recaptured one of the banded owls from our site. After we banded her during fall migration in 2017, she was “recovered” at the Rocky Point Bird Observatory banding station in British Columbia, during fall migration 2018! That’s approximately 800 miles straight line distance and it has been a full year since her original band date. Where has she been? We can only guess between point A and B but I assume she flew north in the winter/spring 2017 to breed, maybe somewhere in Canada. Then she flew south through the tip of Vancouver Island at the RPBO. Here her information was input into the BBL's "report a band site" by Rebecca who received the certificate of appreciation showing the owl's information (Figure 3).

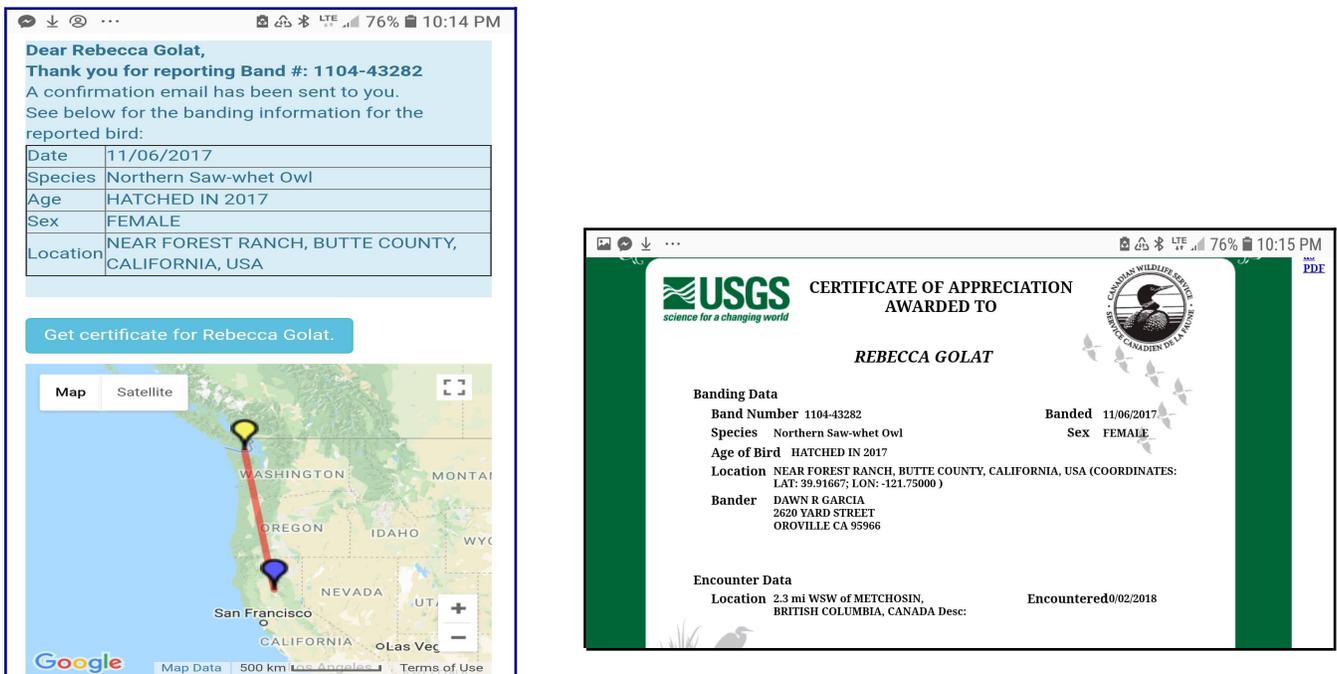


Figure 3. First NSWO recovery for BCCER, information sent by the Bird Banding Laboratory (BBL)

Banding Effort and Owls per Effort

We captured an equal number of owls for our banding efforts as in 2017, more than all previous years; 26 owls for each 100 net hours of banding. However we put in less netting hours, 480, vs 618 in 2017.

Banding effort is defined as the number of owls captured/number of hours we had the nets erected (net hours). It defines how much time we spent attempting to capture owls and standardizes our efforts so we can compare them between years and with other banding stations. Here is an example. In one evening, we have 5 nets up = 5 net hours. We band for 4 hours, so each night = 5×4 =20 net hours each night. In 2018, our total net hours were 480

and we captured 125 new owls. So=125 owls/480 hours = 0.26 owls/net hour. To make more sense of it we multiply by 100=26 owls per 100 net hours. Table 1 shows the statistics for all years.

Incidental Captures and Other Owls

Every year we capture a few species incidental to our NSWOW targets. This year we netted one Pallid bat (*Antrozous pallidus*). Two Western Screech Owls were captured this season, and a pair called randomly throughout the season around the barn and ranch house. A pair of Great Horned Owls (*Bubo virginianus*) and a Northern Pygmy Owl (*Glaucidium gnoma*) were regularly detected in the area during the season.

Community Outreach

Educating the community about the saw-whets is an important part of our project. We had several guests visit over the season and recruited and trained several new volunteers. Two planned field trips were canceled due to the Camp Fire.

Project Support and Volunteers

Logistical support continued this year from CSU Research Foundation and Altacal Audubon Society. Thanks to a very generous donor, AAS also awarded us with a monetary gift assisting banders to run the station. Licensed banders were Project Director Ken Sobon and assistants Wyatt Hersey and Dawn Garcia. Thank you to our returning seasoned volunteers Julie Newman, Carol Anderson, Steve King and Brenda Sobon and many new volunteers: Diane Brown, Emily Smith, Jacqueline Amor, Taunya Shilling, Francisco Vargas, Jenny Reike, Carter Moore, Joseph Porter, Stephanie Hughes, Anna Harris, Jan Walker, Amanda Costa, Jessica Dell' Agostino, Chris Guerra and Ross Schaefer. WOW, thanks to all!



Figure 4. Volunteers learn to handle and release NSWOW after they are banded

Northern Saw-whet Owl Migration Monitoring Project Summary, 2018

Table 1. Northern Saw-whet Owl fall capture rates and age ratios, and recaptures during fall migration 2005-2018. HY indicates birds hatched that monitoring year. AHY indicates birds in their 2nd year or older.

Banding Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTAL
Total Individual Owls Captured	23	61	51	27	25	93	89	115	18	9	53	56	162	125	907
# Nights Netting Effort	19	20	27	30	28	32	28	29	22	12	15	19	33	24	338
Net-hours	340	322	327	561	550	621	511	480	398	114	266	338	619	480	5927
Owl captures/100 Net-hrs	6.8	19.0	15.5	4.8	4.5	14.8	17.6	24.1	5.5	7.9	20.6	16.5	26.1	26.0	
Owl captures/Unit effort	0.45	1.3	1.0	0.32	0.30	1.0	1.2	1.6	0.30	0.75	1.3	1.4	2.1	1.7	
Hatch Year (HY)	10	37	16	9	11	65	39	55	9	7	26	19	120	53	476
After Hatch Year (AHY)	13	24	35	18	14	28	50	60	9	2	27	37	40 (2U)	72	429
HY/AHY Ratio	0.77	1.5	0.45	0.5	0.78	2.3	0.78	0.92	1.0	3.5	0.96	0.53	3.0	0.74	
Recaptures															
From Same Season	3	5	3	1	4	9	1	1	1	1	1	9	13	7	37
From Previous Years	0	0	2	0	0	1	2	2	1	0	1	0	0	0	9
Foreign Recoveries	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Owls Recovered	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

^aowls/net hour/net area (m²) x 1,000 (as per Project OwlNet 2016) =150m² at OWL3

^boriginally banded at another banding station

^cowl banded at BCCER and recovered at another banding station