

Tatlayoko Lake Bird Observatory

2020 Annual Report



Prepared by Avery Bartels

On behalf of BC Spaces for Nature,

Tatlayoko Field Station Society

and Canadian Wildlife Service



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Photos by Avery Bartels unless otherwise stated

1. Introduction

The Tatlayoko Lake Bird Observatory is a project of BC Spaces for Nature. BC Spaces is a tax-charitable non-profit organization which has worked for decades to preserve over 4 million hectares of BC's vast wild lands in places such as the Tatshenshini-Alsek (now a UN World Heritage site), the Spatsizi-Stikine, Purcell Wilderness and the Chilcotin Ark. Each of these are vast natural areas of global conservation significance, large enough to ensure that entire ecosystems - and especially large predator-prey wildlife populations - will survive over time. These spaces will serve as globally significant sanctuaries for biodiversity, wildlife and wilderness in perpetuity.

In 1992, BC Spaces for Nature framed the vision for a **Chilcotin Ark** protected area complex, which would stretch 500 kilometres across the Chilcotin Mountains from Tweedsmuir Park to the Fraser River. Over the next 15 years, we implemented this campaign through a series of initiatives and strategies that led to the protection of **1.5 million hectares** bringing the overall preserved wild land area across the **Chilcotin Ark up to 2.5 million hectares**.

In the heart of the Ark, at the north end of Tatlayoko Lake, BC Spaces was instrumental in securing the involvement of the Nature Conservancy of Canada, as well as the initial funding, to achieve protection of the exceptionally beautiful and ecologically key Tatlayoko and Lincoln Creek Ranches. Situated on the trans-Coast Mountain Homathko low elevation corridor, featuring diverse surrounding ecosystems (biogeoclimatic zones), prime grizzly bear habitat, extensive wetlands and astride a key bird flyway, Tatlayoko offered a superb location to undertake top-calibre biodiversity and climate change-related scientific field research.

Accordingly, when the opportunity arose for BC Spaces to assume the management of the Tatlayoko Lake Bird Observatory in 2017, we saw it as a natural fit. Our ability to undertake this program is made possible with support from NCC who provides access to operate TLBO on the Tatlayoko Lake Ranch conservation lands. Core project funding in 2020 was provided by the Canadian Wildlife Service. In 2020, BC Spaces for Nature collaborated with the Tatlayoko Field Station Society (TFSS) to run the TLBO program.

BC Spaces is very proud of what the TLBO project is accomplishing, including the scientifically important data being gathered at this site. A key reason for the project's success is due to the exceptional dedication of our Bander in Charge, Avery Bartels, his staff and volunteers and Suzanne Senger who oversees the project for BC Spaces. As well, the interest and support of the TLBO project by the local community is key to its ongoing success.

Ric Careless

Executive Director

BC Spaces for Nature (www.spacesfornature.org)

2. Acknowledgements

In 2020 the TLBO was largely funded by the Canadian Wildlife Service, Environment and Climate Change Canada. We are very grateful to Wendy Easton and Tara Imlay of CWS (Delta) in particular for their ongoing support of this project as this years funding was applied for by their office(s). The Bird Canada Birdathon fundraiser was once again a success thanks to the many generous folks who contributed to Avery and Sachi's respective Birdathons. Several private and in-kind donations were also made to the project, with special thanks to Charlie and Ruth Travers, Joerg Fischer, John Snively, Barry Lancaster, Ara Elamjian, Peter and Roma Shaughnessy, Hana Kamea, Otter Books, the William's Lake Field Society, Avery Bartels and Suzanne Senger. As ever, we are grateful to the Nature Conservancy of Canada for its ongoing support of the project through granting access to the Tatlayoko Lake Ranch property and the use of existing infrastructure and equipment.

BC Spaces' staff and the Tatlayoko Field Station Society (TFSS) along with Avery Bartels worked together to implement the 2020 project and begin the process of transitioning management of the TLBO program to the TFSS. The local community continues to engage and help with TLBO in a variety of ways. We very much appreciated support from TFSS personnel and the following local community members in 2020 and seasons past:

Peter and Roma Shaughnessy, Fritz and Sally Mueller, Sandra McGirr and Sandy Hart, Hana Kamea, Charlie and Ruth Travers, Sabina and Troy Harris, Andrew Harcombe, Steve Ogle and Chris Chutter



Yellow Warbler

Sadly, due to the ongoing Coronavirus crisis the TLBO did not accept volunteers or visitors throughout the 2020 season.



3. Overview of Season

The Tatlayoko Lake Bird Observatory's 14th season of operation started on August 3rd, 2020. Two full time staff along with a third bander through much of August and the latter two weeks of September contributed over 875 hours towards the migration monitoring project. In 334.3 hours of observation, over 57 days, a total of 140 species were recorded within the census area, four species above the 13 year average. Twelve standard nets were used for a total of 3506 standard net hours and provided us with a 1325 birds banded. In addition, three large gauge (hawk) nets, three 2-panel nets (the "pipit fence" – which lost one of the nets late in the season) in the field in front of the banding lab and non-standard songbird net MXA added 632.8 non-standard net hours during the morning banding period. Non-standard banding produced a further 200 birds banded, 190 of which came from Net MXA.

Over the course of 10 nights of owling (including Sept. 29) we had 198 net hours from our seven-net owl setup. We used the same setup as in the previous three years with five 60mm owl nets and two of our standard songbird nets (Nets 9 and 10). Over this period we banded 22 Northern Saw-whet Owls.

In total, 4132.8 net hours produced 1547 birds banded, 1325 of which were caught in standard nets during standard hours. This was a drop of just over 100 from 2019 and well below the record season we had in 2018 (Fig. 1).

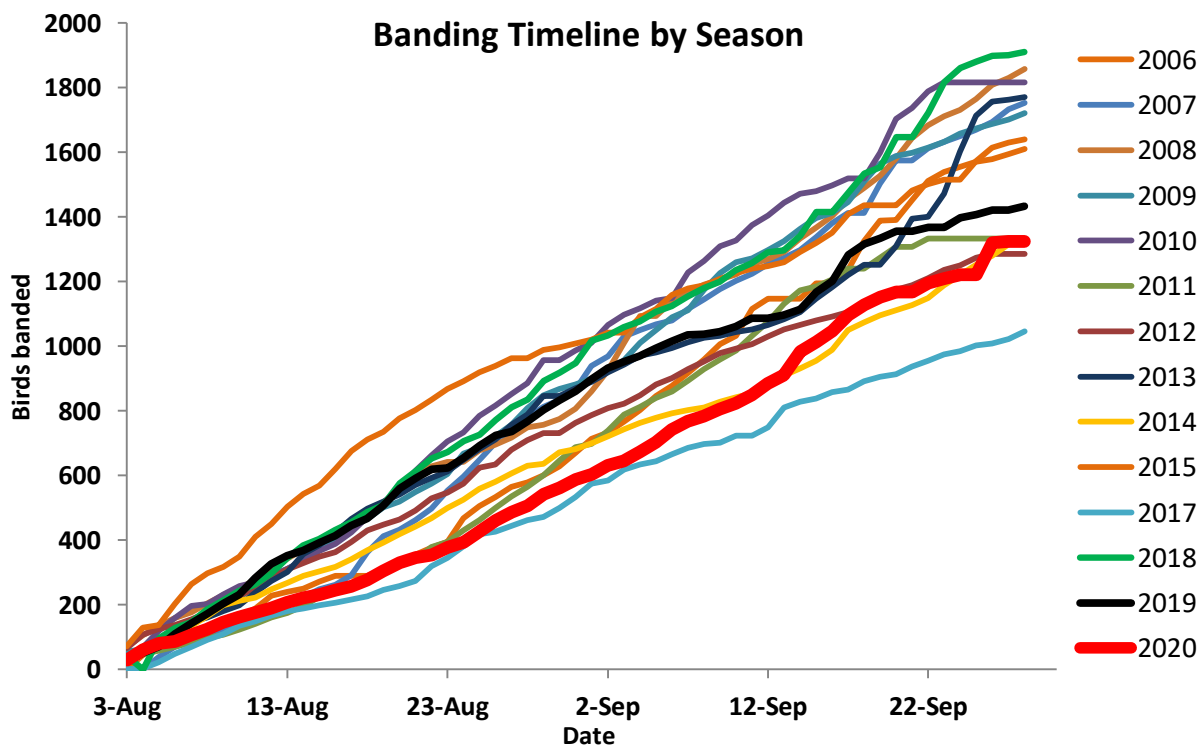


Figure 1 Banding timeline by season

4. Vegetation Management and Nets

4.1 Vegetation Management

As net locations were originally picked to cover a selection of habitat types some nets pass through regenerating riparian habitat, dominated by willow and alder. To keep habitat conditions standard across years, it is necessary to do some pruning in order to maintain similar vegetation height. This helps ensure the consistency of a net's catch rate from year to year. Only four nets regularly receive this treatment: 16, 12, 17 and 18. Upon arrival this year it was apparent that our fairly extensive pruning efforts in 2018 and 2019 had been successful in maintaining a good vegetation height for the 2020 season.

The vegetation on the west side of Net 6 that had grown up to well above the height of the net by 2018 was pruned back at the end of that season and required just the removal of a few ambitious saplings as we set up the net this year. The rest of the nets received no trimming until the end of the season.



A comparison of Net 18 before (L) and after (R) pruning

At the end of the season we spent three 2-4 hour sessions pruning at nets 18, 12/17 and 16. The latter received just a quick trim of the tallest suckers as well as the removal of four or five alder trunks to make space for some younger growth. The other three nets got a more comprehensive pruning as we again removed a selection of the older trunks to make room for the new growth that had come up as a result of our 2018 and 2019 pruning efforts. A large Alder had partially fallen over before the season, causing another trunk to lean way out over net 12. Both of these were removed completely.

In addition to pruning around the nets, we again took out this year's cottonwood and aspen saplings that had sprouted up along the path between the banding lab and net 6 as well as in the small clearings south of net 14.

4.2 Net Productivity

Our pruning efforts from 2018 and 2019 seemed to pay off, especially with regards to Net 17 which jumped up from 0.38 birds/hr in 2018 to 0.61 birds/hr this season, almost exactly the same (0.63) as in 2019. This is especially notable when you take into account that we banded almost 600 less birds this year than in 2018. While only rarely catching more than a few birds at a time, it was consistent with warblers in August, Common Yellowthroats through the middle of the season and Lincoln's Sparrows in September.

Our most productive net was, as is often the case, Net 14 which caught 0.82 birds/hour or 12.3% of our total catch (Table 1). This was well down from last year as it saw many fewer flocks hit it over the course of the season. Net 6 was our second best net, improving slightly on last year though remaining well short of its 2018 exploits when it accounted for an impressive 20.5% of our total catch! In 2020 Net 6 contributed 13% (0.68 birds/hour) of our total catch. 2018 was a bit of an anomaly and is a good example of just how much the movements of mixed flocks can vary from year to year. In 2018 the Yellow-rumped Warbler and Ruby-crowned Kinglet flocks passed through that net daily whereas this year, despite huge numbers of both, the flocks mostly remained south of Nets 6 and 14, as well as in the environs around and east of the banding lab.

Net 10 continues its decline into obsolescence as the alder patch that it and Net 9 are located in is now fairly mature. This, coupled with the fact that the net runs parallel to the Homathko River, makes for poor conditions to catch birds and this year it caught just 0.13 birds/hr (exactly the same as 2019) or 2.0% of our total catch. Net 1 was surprisingly good this year, and was consistently so throughout the season. Swainson's Thrush throughout and sparrows and Ruby-crowned Kinglets in September helped it have a much more productive year than 2019.

Table 1 Birds caught per net in 2020

Net	Banded	Birds /Hr	Recaps	% time used	% Total catch
14	163	0.82	35	71.9%	12.3%
6	172	0.68	27	87.4%	13.0%
17	164	0.61	19	90.0%	12.4%
16	142	0.55	12	84.1%	10.7%
13	130	0.51	24	90.5%	9.8%
1	117	0.49	32	90.3%	8.8%
12	102	0.38	14	90.0%	7.7%
9	86	0.34	18	90.4%	6.5%
15	76	0.30	16	90.3%	5.7%
11	78	0.29	10	90.1%	5.9%
18	69	0.28	5	77.9%	5.2%
10	26	0.13	12	90.4%	2.0%



New non-standard net "MXA" with catch

5. Staff and Volunteers

The 2020 season saw Avery Bartels return for a sixth season as Bander-in-charge and ninth season over all. Sachi Dell-Snively, as in 2018 and 2019, ably filled the Assistant Bander position. Due to the Coronavirus situation no volunteers were accepted this season. Fortunately, we had funds sufficient to employ a third bander for the better part of August and the last 13 days of the season which was sufficient to conduct the full monitoring program safely and effectively. In August we were joined by Morgan Brown, returning for her second time as an Assistant Bander and fourth overall stint at TLBO. Morgan was not available for five days in the second week of the season as she was attending a virtual conference, and only for half days during the first week. However, she was on hand for the rest of the month. On September 16 Jac Curry arrived to help us see out the season and, in particular, provide much needed coverage on owling shifts.



Sachi bands a bird while Morgan scribes

As part of the TLBO Covid-19 protocol created before the season banders agreed to undertake a 14-day quarantine upon arrival in the valley. As Avery and Morgan had recently arrived from abroad this meant that Sachi conducted census until August 14, so as to limit the possibility of Avery contacting anyone outside of our “bubble”. Further aspects of our Covid-19 protocol are elaborated upon in section 11 (pg. 26). As Jac, fortuitously, had a Covid test the day before her departure to the TLBO, once her results arrived (negative) a few days after she herself did, we considered her quarantine period over.

Table 2 Total birds processed by bander in 2020

As this was Jac’s first paid banding position we put particular emphasis on allowing her to band as many birds as possible. For a full list of how many birds were banded by each of the TLBO banders in 2020 see Table 2.

Bander	Banded	Recaps	% Processed
Sachi Dell-Snively	715	122	47.29
Avery Bartels	430	70	28.25
Jac Curry	193	21	12.09
Morgan Brown	187	32	12.37

6. Outreach

Bird banding operations provide an excellent setting to engage the public in nature and conservation. The experience of seeing birds up close and learning from knowledgeable staff can have a profound impact on people of all ages but especially younger generations. With this in mind we typically try our best to encourage locals, visitors to the valley and school groups to visit the station during our banding season. However, due to the ongoing Covid-19 situation visitors were not permitted at the TLBO and we were additionally not able to organize any field trips for local schools. However, we did maintain our daily blog postings.



A female Wilson's Warbler

6.1 Blog

In 2020 we kept up the daily blog posting as we have every season since 2009 (www.tatlayokobirds.wordpress.com). After each day we would post highlights, photos, quizzes and educational pieces on various aspects of our migration monitoring. The banders took turns posting throughout the season and it was a nice to have some fresh voices in the form of posts by Morgan and Jac.

Over the course of 57 posts during the months of August and September we received 2152 views and 1062 visits. The number of views was almost exactly the same as in 2019 but the number of distinct visits was up almost half again what we received last year. The high number of visitors was likely a result of several posts onto social media, in particular to the Facebook group “Birds of BC” as well as the occasional post on the “BC Rare Bird Alert” and “Bird Ringing and Bird Banding” Facebook groups.

While most views were from Canada, we also received views from a further 30 different countries! Over the course of the season the blog received 56 comments, a quite low count compared with past years.

7. Standard Monitoring

7.1 Effort and Environmental Conditions

In 2020 the weather in August was quite erratic with several cool spells that included light frosts on both Aug. 12 (remarkably, our coldest recorded temperature all season at -1.5°C) and Aug. 30 (0°C). These spells didn't just result in cold temperatures overnight but unseasonably cool day-time highs as well (Fig.2). Over the course of August we recorded mid-day highs of over 20°C on just nine occasions and only twice (August 16-17) did we record over 25°C . The wind during August

was typically erratic and as is often the case we saw a calm period through most of the first two weeks of September before an increase to consistent strong winds in the final week of September (Fig. 3). The period of little wind in the first couple weeks of September coincided with a consistently warm spell. As in 2019 this was the only long period of consistent, good weather.

Also like in 2019, we recorded more rain than average though locals tell us that prior to August the preceding summer/late spring had been uncharacteristically dry, and cool. In total we had seven days with rain, five in August (Aug. 3, 5, 18, 20 and 21) and two in September (Sept. 21 and 25). In addition, heavy rain overnight caused a delayed opening on September 18. Overall, we had three days without any banding;

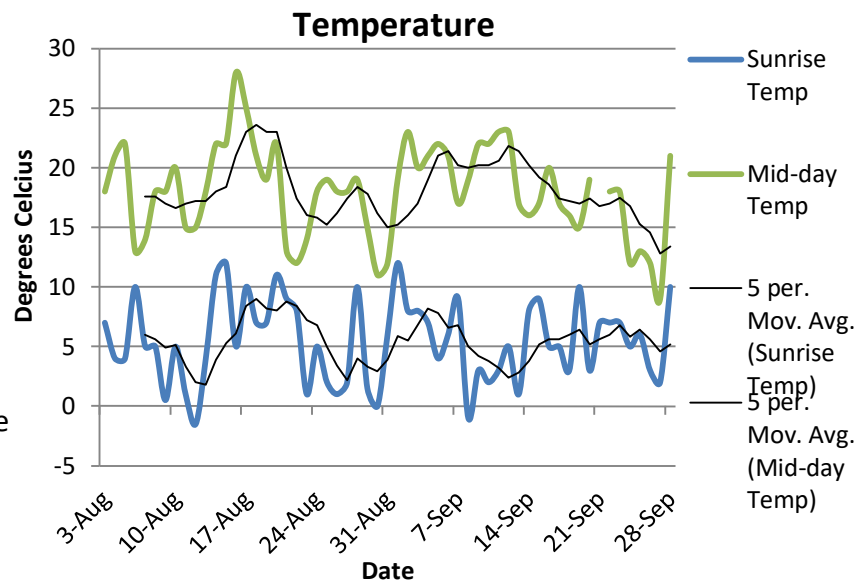


Figure 2 Temperatures over the course of the 2020 season

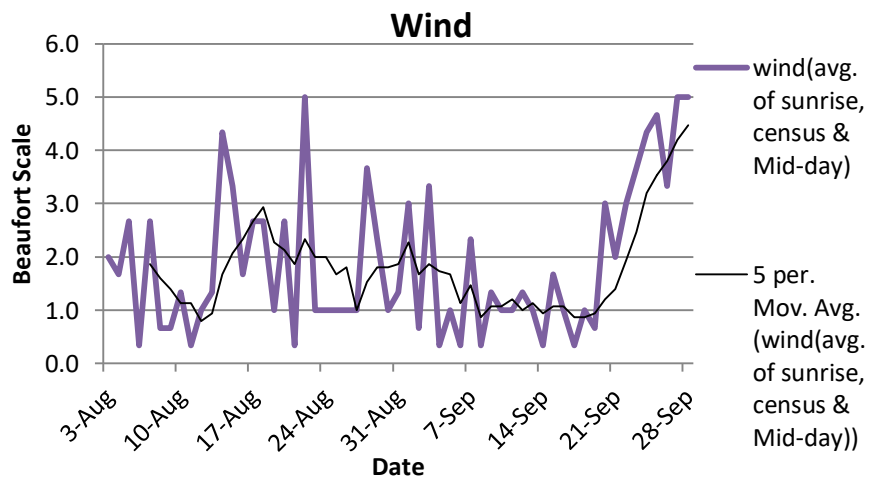


Figure 3 Wind over the course of the 2020 season

Sept. 21, 25 and 28 while we had 50% or less of full nets hours on a further four days (Aug. 21 and 22 and Sept. 24 and 27). This resulted in an every-so-slightly lower than average number of total standard net hours – 3506 compared to the average of 3521(Fig. 4).

While not likely effecting banding, moderate to heavy smoke from fires in the western USA was present in the valley from September 11-18. The snow line through the latter stages of the season remained well up the mountainside and at no point threatened the valley bottom.

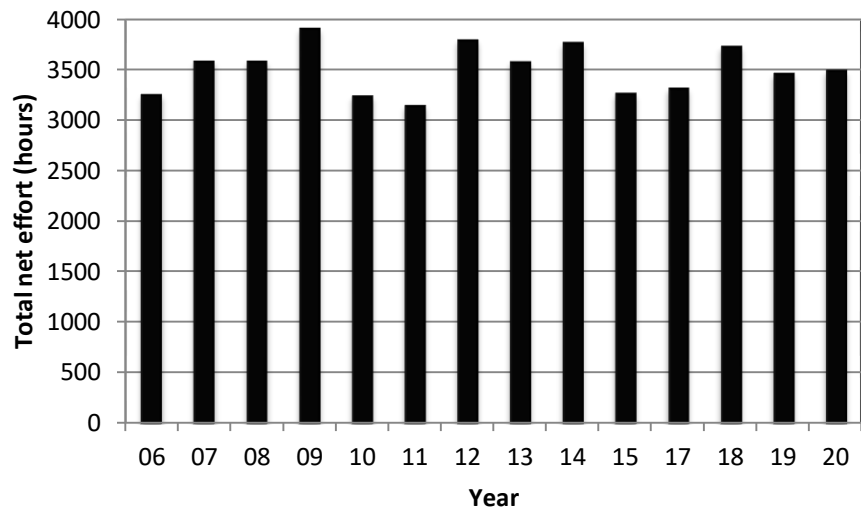


Figure 4 A comparison of standard net hours by season



A Savannah Sparrow with a backdrop of smoke-obscured mountains

7.2 Banding Results

A total of 1325 birds were banded as part of our standard banding program in 2020, the second low year in a row after our record season in 2018. The season got off to an average start with 30 birds banded on each of the first two days but for the following three weeks banding numbers remained consistently low. Indeed, from the period of Aug. 5 through 25 our banding totals remained below the average every day (Fig. 5). This included a stretch of 9 consecutive days, Aug. 10 – 18, when our daily banded totals remained below 20. This was in stark contrast to last season when our August banding totals were consistently above average throughout the month.

Throughout this period Swainson's Thrush (81 banded in August) and Song Sparrow (71 banded in August) were our most prevalent catches but this was a more than 50% decrease from the record numbers of the former that we saw in the past two seasons. While it was apparent that most locally breeding species did not have high breeding success, in the case of Song Sparrows it seemed to simply be delayed as good numbers of recently fledged young were caught throughout the latter half of August and well into September. The locally breeding flycatcher species (Dusky and Alder/Willow) seemed to be the only group to fare reasonably well while all locally-breeding warblers as well as Warbling Vireos had low years, contributing to our slow August.



MacGillivray's Warbler numbers were right on average in 2020

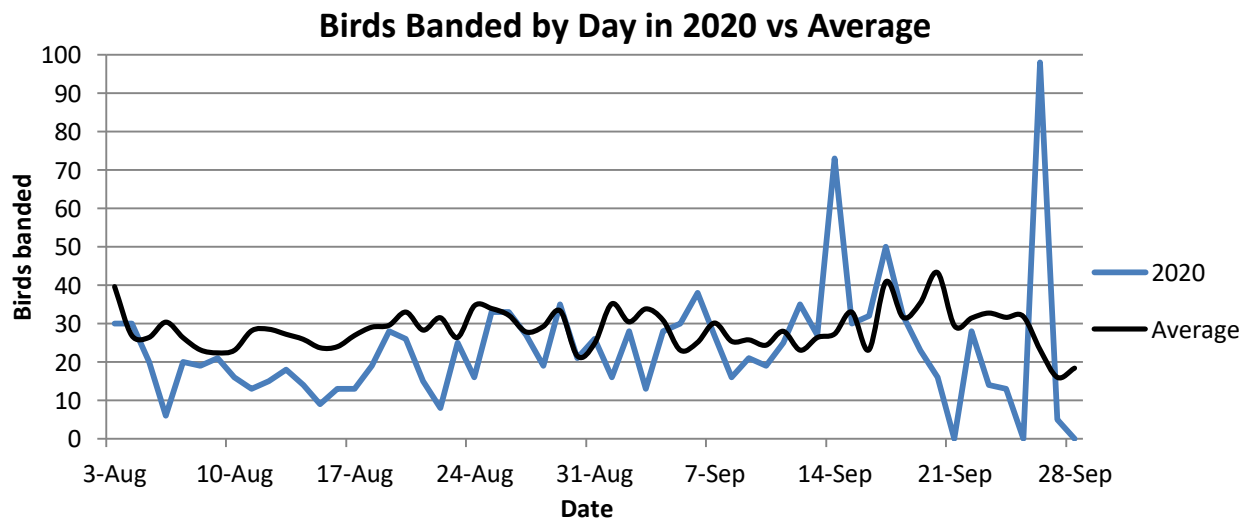


Figure 5 Birds banded per day over the course of the 2020 season

August 25 finally saw us break out of the slump as for the following week we had a notable up-tick in bird numbers when a small pulse of migrant Warbling Vireos, Common Yellowthroats and good numbers of Lincoln’s Sparrows arrived in the valley, along with the steady numbers of the aforementioned Song Sparrows and Swainson’s Thrushes.

While most of the first 11 days of September were on the slower end of the spectrum, as is the norm for this period, a push of Song Sparrows contributed to a few moderately busy days in the first week of the month. The period from Sept. 12 through 18 was our busiest of the seasons and for the seven day period we averaged 40 birds banded/day. This was driven largely by Lincoln’s Sparrows for which we banded a season high of 20 on Sept. 14, our second busiest day of the season at 73 birds banded. Ruby-crowned Kinglets started arriving in good numbers during this period and 24 were banded Sept. 17, accounting for nearly half of the day’s total of 50 birds banded. Ruby-crowned Kinglets would account for a large portion of the birds banded for the remainder of a rather weather compromised final week or so though Song Sparrows continued to consistently be the second or third most banded bird on most of the remaining days of banding. Sept. 26 gave us a final hurrah with a season high of 98 birds banded including a whopping 50 Ruby-crowned Kinglets!

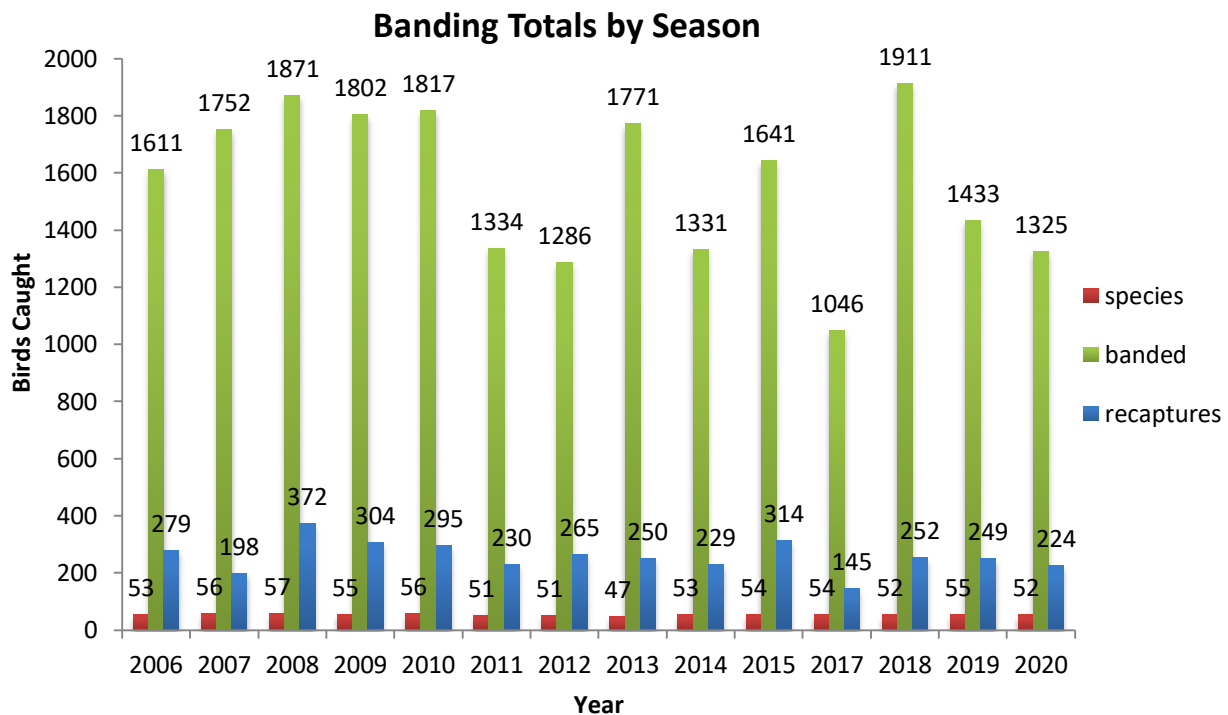


Figure 6 Banding and recapture totals for each season of operation

The 1325 birds banded from our standard nets over course of the season were comprised of 52 species, slightly below the average of 53.5 species (Fig. 6). An additional 200 birds of six species were banded by non-standard means (see Non-standard section pg. 22).

Overall, warblers had a poor season with all of the regularly occurring species being caught in below average numbers with the exception of MacGillivrays which, at 31 banded, hit exactly the 2006-2019 average (Table 3). For the second year running Common Yellowthroats were down significantly with just 86 banded, only 69% of the average. Northern Waterthrush, American Redstart and Orange-crowned Warbler were all down a similar amount below average while the 36 Yellow Warblers banded was just 47% of the average. Yellow-rumped Warblers are always quite variable and as they tend to forage in large roving flocks the numbers banded are less reflective of their true abundance in a given year. Indeed in 2020 we recorded record numbers through observations but the flocks foraged principally away from the nets preferring the zones east of the banding lab, south of nets 1 and 14 and the west shore of the Homathko.

By contrast, several of the sparrows were banded in good numbers with Song Sparrow, at 40% above average, being the top banded bird of 2020 reaching 200 for the second consecutive year and just the third time since the TLBO started. Lincoln’s Sparrows were prevalent as well though, like Song Sparrows, their numbers were a bit down from last year. At 199 banded they finished above the average of 188 for only the second year since 2011. Fox Sparrows smashed the previous record (13) with 20 banded, including one of the “Red” species group and another possible “Red” x “Sooty” hybrid. A full list of banding totals for the 2020 season can be found in Appendix A (pg. 33).

Table 3 The 15 most banded species in 2020

Species	2020	Average banded 06-19	% Of Average
Song Sparrow	200	141.5	141%
Lincoln's Sparrow	199	188.5	106%
Ruby-crowned Kinglet	129	123.3	105%
Swainson's Thrush	124	137.5	90%
Warbling Vireo	99	143.3	69%
Common Yellowthroat	86	125.5	69%
Orange-crowned Warbler	64	88.3	72%
American Redstart	38	50.8	75%
Yellow Warbler	36	76.8	47%
Wilson's Warbler	36	56.7	64%
Northern Waterthrush	32	44.0	73%
MacGillivray's Warbler	31	31.5	99%
"Gambel's" W-c. Sparrow	29	36.9	79%
Savannah Sparrow	23	27.3	84%
"Oregon" Dark-eyed Junco	22	33.5	66%



"Sooty" Fox Sparrow

7.3 Recaptures

In 2020 we had 224 standard recaptures of 154 unique individuals comprised of 20 species. This was a well shy of our average of 260 recaptures per season. However, given the low banding totals this was to be expected. The variability in recapture numbers is in part tied to the breeding season in the immediate vicinity of the station. The first few weeks of August, when most of the local hatch-years have yet to depart, typically account for a disproportionate number of a season's total recaptures. In 2020 the low banding numbers through this period made for a lower than normal number of recaptures, however, a mix of poor weather and smoke kept birds from migrating out of the valley in early/mid-September and this, along with some late broods of Song Sparrows, helped boost our recapture numbers.

Song Sparrows, perennially the most-recaptured species, made up the bulk of the recaptures with 80 accounting for 36% of the seasons total standard recaptures. This was followed by Swainson's Thrush (37), Lincoln's Sparrow (28) and the resident Black-capped Chickadee (17).

One of the more interesting aspects of our banding program is the recapture of individuals from previous years. Every year we get several of these inter-annual recaptures and in 2019 we had 28 (Table 4, pg. 15). We continued to see the carryover from our record number of birds banded in



This 8-year old Swainson's Thrush was undergoing heavy moult

2018 as recaptures from that year were almost on par with last year (8 from 2018 and 10 from 2019). We also caught an 8-year old Swainson's Thrush, an individual originally banded as a hatch-year in 2012. This ties our oldest ever recapture which was also a Swainson's Thrush, recaptured last year. We recaptured two interesting individuals that were banded as part of a short spring banding session at this site by Barry Lancaster in 2017 (highlighted in light blue in Table 4). These were a Dusky Flycatcher, which incidentally fledged a family of three young close to the banding lab, and a female Song Sparrow. Both were aged as after-second-year during banding in 2017 which means they are each a minimum of 5 years old.

Table 4 The 28 inter-annual recaptures in 2020, arranged by age from oldest to youngest. Given ages in bold are known age

Band Number	Species	Recapture Date	Banding Date	Age at Banding	Sex	Days since Banding	Age at Recapture
2261-25427	Swainson's Thrush	08/11/2020	08/21/2012	HY	U	2912	8
2661-82812	Swainson's Thrush	09/17/2020	08/25/2015	AHY	U	1850	6+
2221-75268	Song Sparrow	08/09/2020	05/21/2017	ASY	F	1176	5+
2790-60063	Dusky Flycatcher	08/03/2020	05/21/2017	ASY	U	1170	5+
2521-63987	Red-eyed Vireo	08/08/2020	08/05/2017	AHY	U	1099	4+
2661-82991	Swainson's Thrush	08/11/2020	08/13/2017	AHY	U	1094	4+
2661-83114	Swainson's Thrush	09/15/2020	09/06/2017	AHY	U	1105	4+
2810-40200	Orange-crowned Warbler	09/12/2020	09/08/2017	AHY	M	1100	4+
2760-63221	American Redstart	08/03/2020	08/03/2018	ASY	M	731	4+
2810-40332	Black-capped Chickadee	08/23/2020	08/09/2018	AHY	U	745	3+
2521-89834	Northern Waterthrush	08/17/2020	08/16/2018	AHY	U	732	3+
2661-82960	Swainson's Thrush	08/11/2020	08/07/2017	HY	U	1100	3
2661-82975	Swainson's Thrush	09/05/2020	08/10/2017	HY	M	1122	3
2840-88990	Yellow Warbler	08/11/2020	08/05/2019	AHY	F	372	2+
2840-88994	Yellow Warbler	08/03/2020	08/06/2019	AHY	F	363	2+
2221-83836	MacGillivray's Warbler	08/07/2020	08/10/2019	AHY	F	363	2+
2691-76488	Swainson's Thrush	09/02/2020	08/11/2019	AHY	U	388	2+
2840-89092	Yellow Warbler	08/14/2020	08/17/2019	AHY	M	363	2+
2840-89190	Common Yellowthroat	08/03/2020	08/25/2019	AHY	F	344	2+
2951-23629	Swainson's Thrush	08/08/2020	08/25/2019	AHY	U	349	2+
2920-62025	Common Yellowthroat	09/15/2020	08/30/2019	AHY	M	382	2+
2521-64181	Red-eyed Vireo	08/16/2020	08/04/2018	HY	U	743	2
2771-57176	Song Sparrow	09/09/2020	08/05/2018	HY	U	766	2
2691-76014	Song Sparrow	08/06/2020	08/17/2018	HY	U	720	2
2810-40426	Black-capped Chickadee	08/24/2020	08/18/2018	HY	U	737	2
2810-40692	Black-capped Chickadee	09/12/2020	09/07/2018	HY	U	736	2
2840-88982	Black-capped Chickadee	08/23/2020	08/04/2019	HY	U	385	2
2691-76446	Swainson's Thrush	08/30/2020	08/07/2019	HY	U	389	1

7.4 Estimated Totals and Diversity

2020 Saw a total of 140 species recorded in the census area, well above the average of 135.5 (Fig. 7). In the two previous seasons we added a whopping 13 new species to the station list and in 2020 we saw the more modest addition of a further two species to the TLBO list, Brewer’s Sparrow and Gray-cheeked Thrush. These new additions are elaborated upon in Table 8 (pg. 31) in the “Highlights” section of this report. The TLBO species list now sits at 204 species detected during diurnal monitoring +1 in a Long-eared Owl seen in 2018 during owl banding. Over the course of the season a record 28,196 detections were made, 47% higher than the 2006-2019 average of 19,203. This was undoubtedly helped by a large visible migration event on September 25 when over 3000 individual birds were recorded on that day alone. A full list of detections for each species can be found in Appendix B (pg. 34). A list of the commonest species recorded at TLBO and their numbers in 2020 vs average can be found in Table 5, pg. 21.

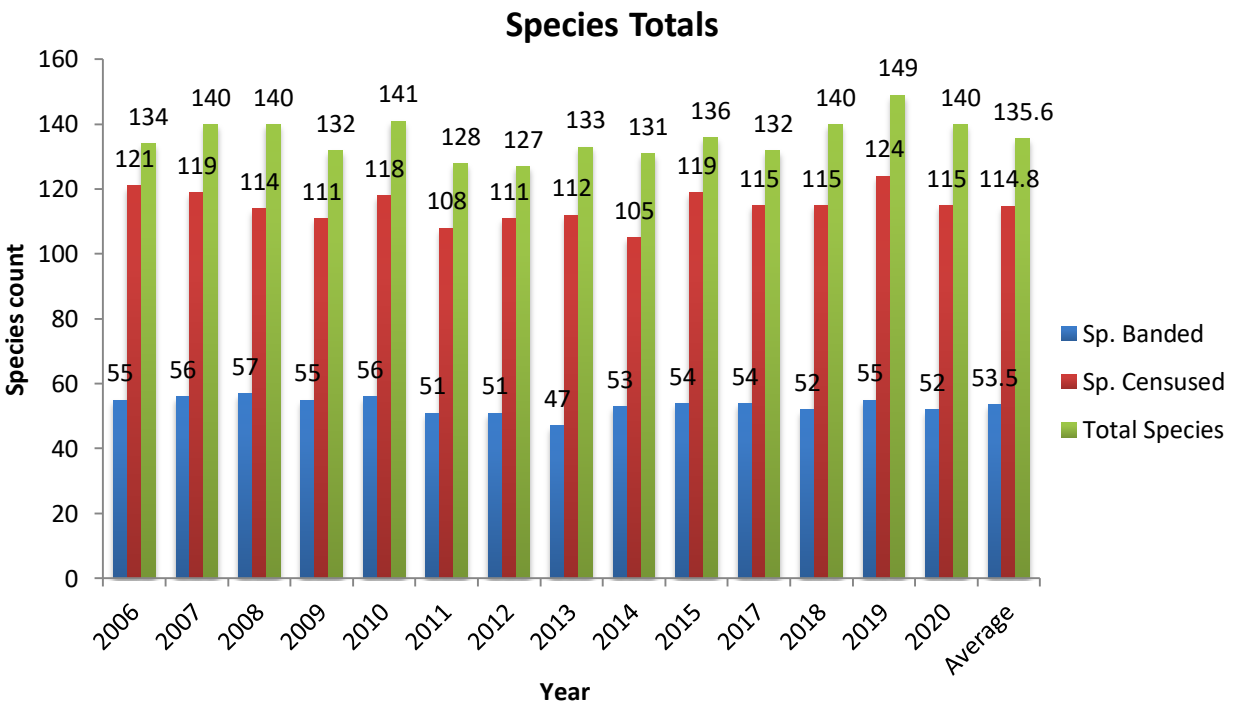


Figure 7 Species detected through banding, census and total

Waterfowl numbers were down from average with 1198 detections being 82% (remarkably, the exact same percentage as in 2019!) of the 2006-2019 average. However, numbers were really a mixed bag and this overall figure was heavily influenced by the fact that Canada Geese were almost non-existent with just a single sighting of five flybys being recorded all season. While Canada Geese numbers are variable at the TLBO this is the third low season in a row and by far the lowest total on record (they average 434.5 detections/year). American Wigeon also saw record low numbers with just 36 detections representing only 15% of the average. Northern Shoveler and Common Merganser were well below average as well. On the

flip side, Green-winged Teal (181 detections, 194% of avg.), Ring-necked Duck (100 detections, 121% of avg.) and Northern Pintail (47 detections, 196% of avg.) all had good years. Meanwhile, our commonest species, Mallard were detected in well above average numbers with the total of 790 detections marking the second highest ever season total and a 167% increase on the average. As per usual waterfowl numbers grew in late August and remained high through much of September though there were some slow periods through the first half of the month, somewhat uncharacteristically.

Raptor numbers were well above the 2006-2019 average with most of the common species including Northern Harrier, Osprey, Red-tailed Hawk, Bald Eagle and Merlin having a good year. The two exceptions among our regular raptors were Sharp-shinned Hawk with 63 detections, at 93% of the annual average and American Kestrel, also with 63 detections, at 75% of the average. It is unclear whether the resident Osprey pair had a successful breeding year despite being seen carrying fish towards their nest in early August and being detected virtually throughout the season. The American Kestrels, of which a pair typically breeds on the property, were present, along with several young, for much of the season. However, there were periods of a week or so when they would all but disappear from the property. Northern Harriers seemed to be on track for a low year right up until mid-September before they finally became daily fixtures. Three dates, Sept. 17, 19 and 25 accounted for 30 of their total 63 detections.

Shorebird numbers are never high at TLBO and this year was no exception, though even by our standards diversity was particularly low. The three species that are detected with any sort of regularity are Killdeer, Spotted Sandpiper and Wilson's Snipe. The first two of these were detected in more or less standard numbers with 6 and 65 detections respectively. Wilson's Snipe on the other hand, at 15 detections was double the average and this was in most part due to a couple individuals that were flushed on several days in early August from the pasture just to the south of the oxbow.

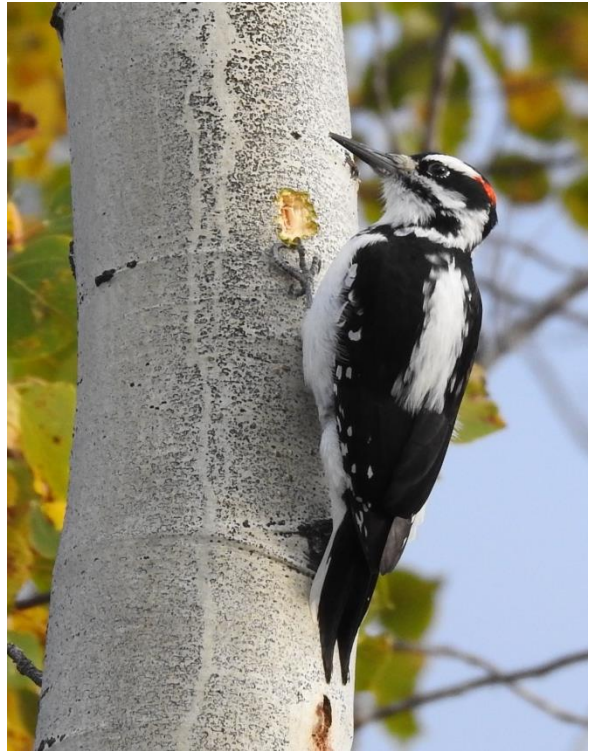


There were 6 detections of Killdeer in 2020

The date indicates they may have bred on the property. Gulls are typically sparse and this year fit the pattern with just 10 California Gull detections (double the average) and 26 Herring Gull detections, well below the average of 41, to go along with 21 detections of unidentified gulls. Since 2015 we've had regular Sandhill Crane sightings at the TLBO as at least one pair has seemingly spent the summer in the vicinity. This year we had eight detections though in several other instances we could hear them calling from well outside our census area.

Rufous Hummingbirds detections were less than half of the average at just 11 over the course of the season. Belted Kingfisher by contrast, with 90 detections, were a bit above the average of 81. Woodpeckers were a mixed bag with Red-naped Sapsucker, Downy and Hairy Woodpeckers all below average while Northern Flickers, at 267 detections were well over the average of 206 detections/season. Pileated Woodpecker numbers were a bit over average. As is usual, it is likely that almost all detections of this species pertain to the same few individuals that are resident in the area.

Aerial insectivores, including Swifts, Flycatchers and Swallows often see similar trends as a group in a given year and this was the case in 2020. After a low year for aerial insectivores in 2019 it was encouraging to see all three of the above mentioned families finish off with detections double, or more, the average. On the Flycatcher front all of the commonest species were up a modest amount with the exception coming with Dusky Flycatcher which had a somewhat misleading total of 232 detections. This was the first season this species has been detected in triple figures and while they were indeed quite prevalent this huge total was in large part due to two families that each succeeded in fledging 3 young near the banding lab shortly after our arrival on site and provided a base of 10 individuals that were noted more or less daily over the course of a couple week period. Swallows, coming off three straight seasons of low numbers, started with a bang as for the first few days of the season a large group of up to 80 Violet-green Swallows were detected resulting in the bulk of our 274 detections of this species (way above the average of 57). Northern Rough-winged Swallows fell above the average (34 detections, 126% of avg.) and while Barn Swallows, at 32 detections, totalled just 66% of the average this amount is more than double what has been detected in any season since 2015. Finally, the 65 detections of Black Swift were also more than double the average of 27.



Hairy Woodpecker detections were below average in 2020



This Dusky Flycatcher nest was found opposite Net 1

For the fifth successive year American Pipit numbers were high in 2020. The 758 detections was well below the record setting 1306 detections in 2018 and 941 detections in 2019 but were still 166% of average. Meanwhile, another high elevation breeder that prefers open habitats the Horned Lark, at just 57 detections, was well short of their average of 82.

Our two regular Chickadee species shared opposite fates this year as Black-capped Chickadees, with 430 detections, hit just 73% of the average. There were 192 detections of Mountain Chickadees on the other hand which is nearly double the average of 99. Coincidentally, we had the exact same number of detections of Red-breasted Nuthatch as the aforementioned species, 192, which was 117% of the average and a small increase on 2019.

Ruby-crowned Kinglets are prone to large fluctuations in numbers from year-to-year and this was a bumper year for them with 1235 detections, 159% of average, making them our 4th most detected species of 2020. Meanwhile, Golden-crowned Kinglets did not show a similar spike in numbers as the 67 detections was right on the average.



A family of Mountain Bluebirds was noted a few times in August by M. Brown

After two bumper years Thrush numbers returned back to around average for most of the regularly occurring species. Our two commonest thrushes, Swainson's Thrush (446 detections, 123% of avg.) and American Robin (582 detections, 83% of avg.) were either side of their respective averages though even for the former this was a significant drop from the 750+ detections in both 2018 and 2019. Varied Thrush and Townsend's Solitaire were each detected in

high numbers, indeed the 168 detections for the former (average of 37 detections) was a single season record while the 23 detections of the latter (average of 8 detections) was the second highest season total. For Varied Thrush this high rate of detections was in most part due to a single day of visible migration on Sept. 25 when a whopping 107 individuals were detected flying over! Meanwhile Hermit Thrush (27 detections) and Mountain Bluebird (53 detections) were both almost right on their average. For the bluebirds, many of these detections came in early August when a family of individuals was recorded on several days in the pines northeast of the banding lab. We never did get a proper movement of this species in late September as we do in some years. Two other frugivores, the Cedar Waxwing (876 detections, 96% of avg.) and Western Tanager (44 detections, 56% of avg.) had unremarkable seasons, which was a bit of a surprise given the

good crops of all the native berries on the property (raspberry, saskatoon, currant and red-osier dogwood).

Warblers were a bit of a mixed bag in 2020 though more species had above average years than below average. Northern Waterthrush was the only species to be well below average (107 detections, 78% of avg.) while both Common Yellowthroat (516 detections, 92% of avg.) and Yellow Warbler (239 detections, 91% of avg.) were a down a bit. American Redstarts were exactly on their average with 208 detections though for the second year running this was countered by low numbers banded. Orange-crowned and Wilson's Warblers were up 122% and 140% of the average respectively. For Orange-crowned Warblers the 274 detections was exactly double the detections last year. MacGillivray's Warbler had their third year in a row of positive numbers, indeed the 126 detections (average of 79) was a single season record. Townsend's Warblers had a great year with 57 detections being the second highest total on record and way above the average of 20 detections/season. Finally, Yellow-rumped Warblers blew away the previous season high count with 7538 detections (average of 2685), nearly 4500 of which came in a four day period in late September that peaked with 2187 detections on September 25.

For the third year running, with the exception of Spotted Towhee (38 detections, 69% of average), all the commonly occurring sparrows were detected in high numbers. For Savannah Sparrow (981 detections) Dark-eyed Junco (834 detections), Fox Sparrow (64 detections) and White-throated Sparrow (26 detections) 2020 was a record season. Meanwhile, Chipping Sparrow (539 detections) Song Sparrow (1187 detections) and Lincoln's Sparrow (924 detections) had their second highest season totals, all only trailing their 2019 tallies. It is worth noting that for the past two seasons, detections of Savannah and possibly Vesper Sparrows will no doubt have been effected by an increase in coverage of the field at the north end of the census area which has been birded once or twice a day on a near-daily basis compared to the infrequent forays into it in previous years.



Lincoln's Sparrows are always one of the commonest species at TLBO

In the blackbird department Western Meadowlark numbers were down a bit after two high years, though at 208 detections they remained well above the average of 156. Meanwhile, Red-winged Blackbird numbers were low for the second year in a row (164 detections, average of 247).

Table 5 2020 Detections of the traditionally commonest species

Last but not least, Finches are always irruptive but this was a low year for all of our regular species with the exception of Pine Siskins. Small numbers of siskins early in August grew to larger flocks during mid- and late August after which their numbers decreased drastically until the third week of September when they increased significantly again until close to the end of the season. Overall, the 2245 detections was 168% of the average. With the exception of 2017 (intense fire season) Red Crossbills have shown a quite consistent 2-year cycle at the TLBO and as this was a low year we were a little surprised to still have 96 detections (66% of average). Interestingly, after starting to note the call types in 2019 when we recorded almost exclusively “Type 4”, this year was mostly “Type 3” with a smattering of “Type 4” and some possible “Type 5” as well. Evening Grosbeak (47 detections, 58% of avg.), Purple Finch (21 detections, 41% of avg.) were way down. Interestingly, an apparent family of Cassin’s Finches (high count of four noted Aug. 30) first noted in mid-August provided us with 14 detections of this locally scarce species. Previously, this species had only been detected in three different seasons.

Species	2020	Average 06-19	% of Average
Yellow-rumped Warbler	7538	2684.9	281%
Clark’s Nutcracker	604	233.5	259%
Oregon Junco	834	335.3	249%
Savannah Sparrow	981	398.3	246%
Green-winged Teal	181	93.1	194%
Mountain Chickadee	192	98.8	194%
Chipping Sparrow	539	306.3	176%
Pine Siskin	2245	1338.4	168%
Mallard	790	473.5	167%
American Pipit	758	456.2	166%
Song Sparrow	1187	735.8	161%
MacGillivray’s Warbler	126	78.6	160%
Ruby-crowned Kinglet	1235	777.2	159%
Lincoln’s Sparrow	924	608.6	152%
Wilson’s Warbler	173	123.9	140%
Western Meadowlark	208	156.2	133%
Northern Flicker	267	206.1	130%
Warbling Vireo	657	519.8	126%
Swainson’s Thrush	446	362.6	123%
Orange-crowned Warbler	274	224.7	122%
Ring-necked Duck	100	82.3	121%
Red-breasted Nuthatch	192	163.8	117%
Belted Kingfisher	90	81.1	111%
White-crowned Sparrow	278	260.6	107%
American Redstart	208	208.2	100%
Common Raven	97	98.2	99%
Cedar Waxwing	876	904.1	97%
Common Yellowthroat	516	562.8	92%
Yellow Warbler	239	262.2	91%
American Robin	582	701.8	83%
Hairy Woodpecker	76	92.5	82%
American Crow	967	1213.5	80%
Northern Waterthrush	107	136.8	78%
American Kestrel	63	83.8	75%
Black-capped Chickadee	430	589.3	73%
Horned Lark	57	82.5	69%
Red-winged Blackbird	164	246.8	66%
Red Crossbill	96	145.7	66%
Evening Grosbeak	47	80.5	58%
Ruffed Grouse	79	150.2	53%
American Wigeon	36	236.3	15%
Canada Goose	5	434.5	1%

8. Non-standard Banding

As in previous years, non-standard nets were used in 2020. These consisted of both 30mm songbird nets and large gauge "Hawk Nets". A new location was used for a non-standard songbird net that was given the name "MXA". MXA was erected in the regenerating field 50m NNW of Net 10 and 70m S of Net 16 where new growth of several willows have created a nice bank of shrubbery along the east side of this new net (Fig. 8). The location is, in its current state, a prime net location and this was born out by catching 190 birds while only being open 48% of the time (for a catch rate of 1.31 birds/hr)! MXA was setup on August 8 and was used pretty much daily through the rest of the season though, like the hawk nets, it was usually closed during census and other periods of high volume of birds or inclement weather.

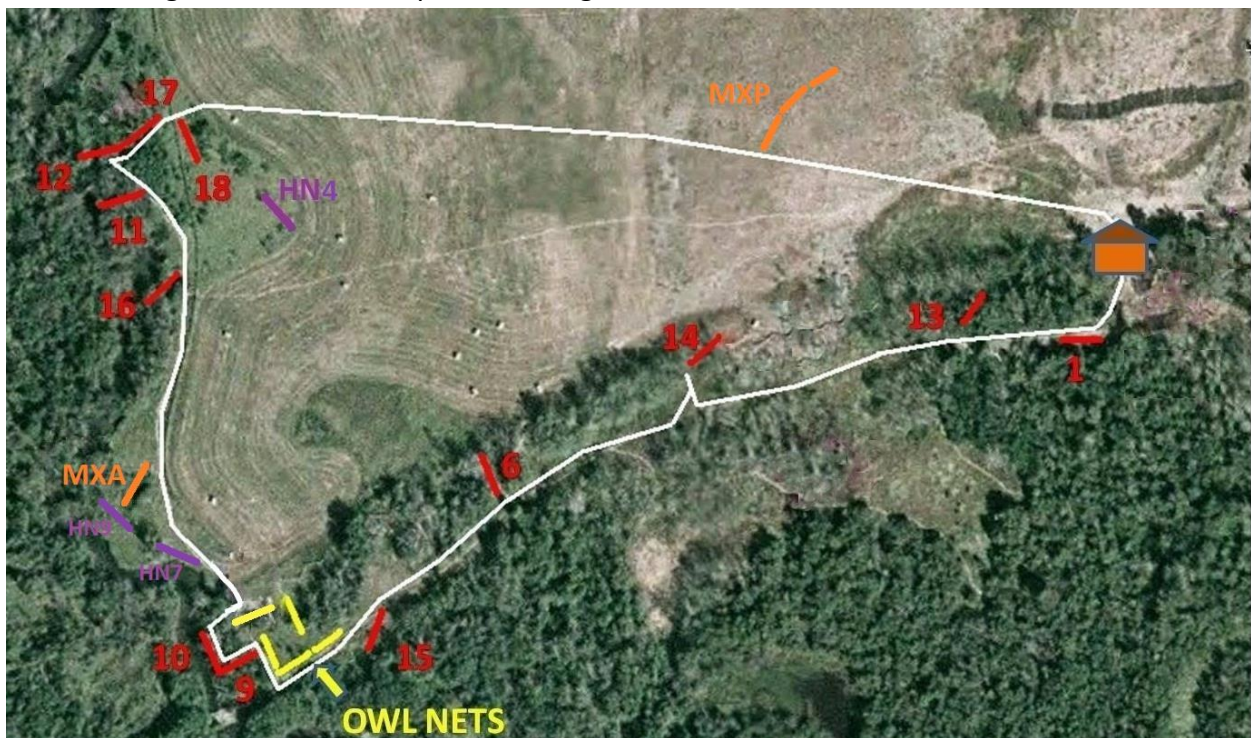


Figure 8 The net loop in 2020 including non-standard net locations

The "pipit fence" were the only other non-standard songbird nets used in 2020. While we set the three nets up in late August in the same location as in 2019 they were only actually used on three different days all season as the combination of a lack of pipits/strong wind/lack of personnel to watch the nets made opportunities to use them scarce. Additionally, cows that got into the field a few times mid-September knocked the nets over and destroyed one of them on Sept. 12. The two remaining nets were resurrected Sept. 15.

All three Hawk Nets were used for most of the season with HN7 first used Aug. 11, HN4 Aug. 12 and HN9 Aug. 16. It is interesting to see how the different nets fair each season and this year HN7 did not catch a single raptor but rather produced the first two

waterfowl the TLBO has ever caught. An immature/female type Hooded Merganser was released unbanded on August 16 and a hatch-year female Green-winged Teal was caught and banded September 10! HN9 meanwhile was the most productive catching three Sharp-shinned Hawks along with the just the 6th banding record of Steller's Jay as well as a Fox Sparrow and a Cedar Waxwing. HN4 meanwhile caught us a single northern Harrier though we also witnessed a further one bounce out of the net. A lone Savannah Sparrow was also banded from HN4.

Last but certainly not least, a female American Kestrel was caught using the bal-chatri trap on August 25th. Though we attempted on several other occasions we would not have any further success with the bal-chatri.



Our only two Cassin's Vireos (above) came from MXA; American Kestrel (lower L) by Morgan Brown; TLBO's first Green-winged Teal (lower R)



Table 6 Birds caught in non-standard net "MXA" in 2020

Species	MXA Total Banded	MXA Total Recaps
Western Wood-pewee	1	0
Willow Flycatcher	1	0
Alder Flycatcher	1	1
"Traill's" Flycatcher	1	0
Hammond's Flycatcher	2	0
Dusky Flycatcher	6	0
Cassin's Vireo	2	0
Warbling Vireo	15	2
Black-capped Chickadee	1	1
Ruby-crowned Kinglet	28	0
Swainson's Thrush	2	0
Northern Waterthrush	2	0
Orange-crowned Warbler	7	0
MacGillivray's Warbler	1	1
Common Yellowthroat	30	6
American Redstart	6	1
Yellow Warbler	8	0
"Audubon's Y-r. Warbler	5	0
"Myrtle" Y-r. Warbler	1	0
Townsend's Warbler	1	0
Wilson's Warbler	6	0
Savannah Sparrow	2	0
Fox Sparrow	1	0
Song Sparrow	17	6
Lincoln's Sparrow	40	3
"Oregon" Dark-eyed Junco	1	0
"Gambel's" W-c. Sparrow	2	0
Total	190	21



9. Owl Banding

After our record season of owl banding in 2019 (62 owls banded) we were expecting a low year this time around. This came to pass as we finished with 22 Northern Saw-whet Owls banded and no recaps from 10 nights, plus one night were we were shut down after one net round due to weather (Fig. 9). With a period of cool nights in late August we anticipated that we might have an early start to owl migration in 2020. However, this was scuppered by an increase to more seasonally typical temperatures throughout the first couple weeks of September. Nine nights saw the full three hours of effort account for a total of 30 hours of effort for the season. The same seven net setup that has been used in the past several years accounted for a total of 198 net hours. The playback setup remained the same as in 2019.

Often in slow years there are a higher percentage of adult birds banded and in 2020 this did indeed pan out, though not to the degree that it can in some years. In total we banded 17 hatch-years, four second-years and a lone after-second-year. In the last couple sessions we also caught mainly smaller individuals, that were likely mostly males.

Table 7 Owling totals

Date	Effort (hrs)	Owls Banded
5-Sep	3	1
7-Sep	3	2
10-Sep	3	1
13-Sep	2.25	0
15-Sep	3	6
16-Sep	3	0
18-Sep	0.75	0
19-Sep	3	2
25-Sep	3	2
26-Sep	3	4
29-Sep	3	4



Northern Saw-whet Owl

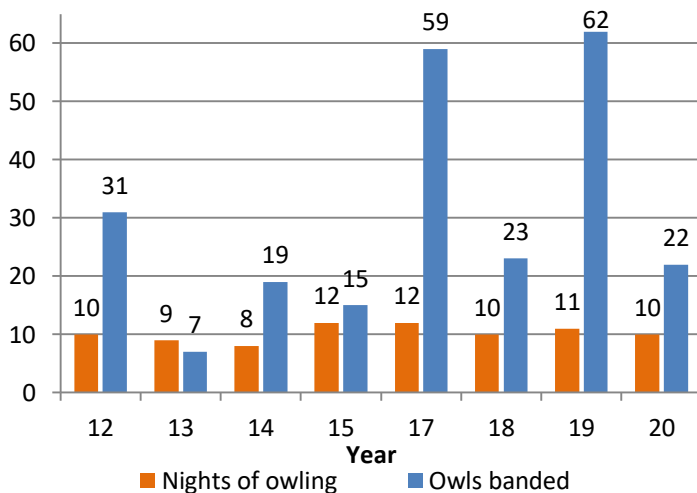


Figure 9 Owling effort and banding totals by year

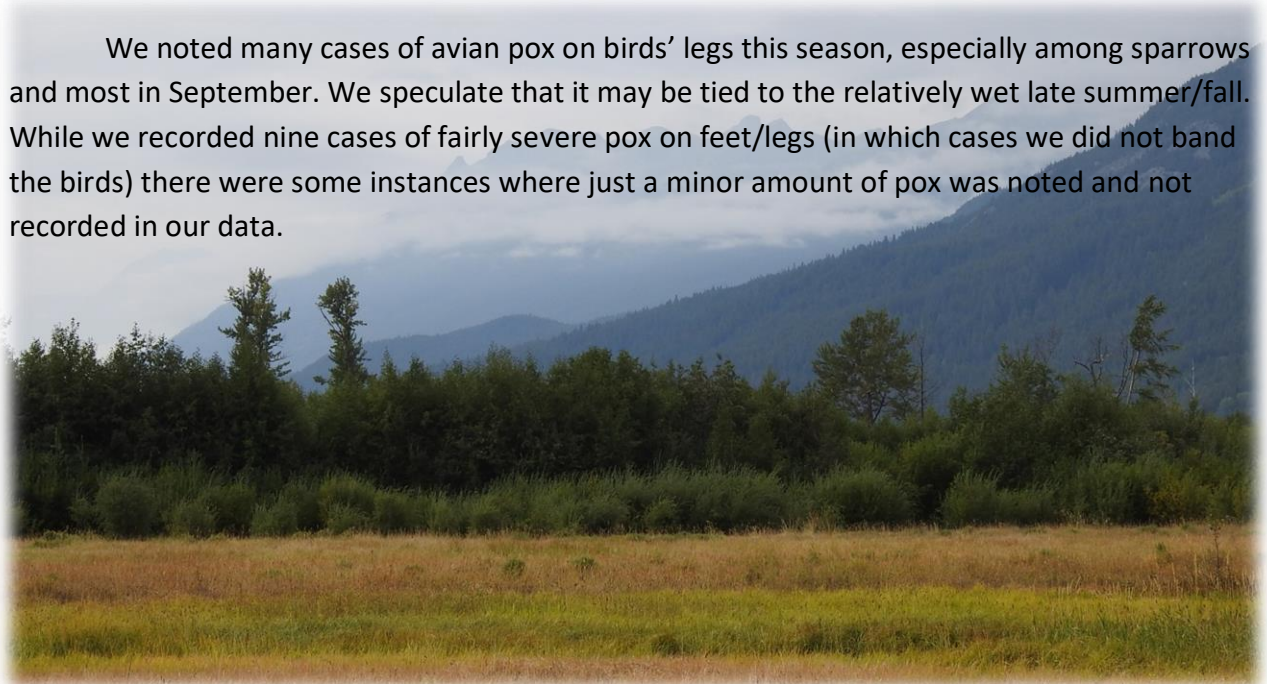
As effort had been a little low in 2020 we decided to go out for a final night of owling on September 29 (a day after our traditional end of season) and caught our last four owls. In the future it would be interesting to spend a further week or two doing owl banding at the TLBO as it seems likely that the bulk of the Northern Saw-whet Owl migration occurs in the first week or two of October.

10. Injuries and Fatalities

An unfortunate consequence of mist-netting birds is that there is the occasional injury and even fatality. While measures are taken to prevent casualties and injuries, (ie. frequent net checks, monitoring nets when a predator is seen nearby etc.) the odd mishap is inevitable. In 2020 we had a fairly low number of injuries, perhaps as a result of only having experienced personnel handling birds. Of the total of 1547 birds banded, 245 recaptured and an unknown number of same-day recaptures we had three fatalities and 11 injuries. The three fatalities were a juvenile “Traill’s” Flycatcher for which cause of death was suspected to be internal haemorrhaging/shock after a presumed wing injury during extration; a Swainson’s Thrush caught in HN4 just as a strong wind picked up between net checks; and an Oregon Junco. The latter two were both the result of strangulation by netting, an infrequent cause of mortality at TLBO.

The 11 injuries included eight incidences of wing strain, one dislocated tibia/tarsus joint and two cases of superficial wounds on the sides of the neck, almost certainly self-inflicted by the bird’s claw as they try to “scratch” the netting off their head. In the case of the latter two, both were Lincoln’s Sparrows which is the species for which this injury is almost exclusively noted at the TLBO. As is the case most years, we subsequently caught a couple of our previously injured birds that had recovered. In 2020 this included our first two injuries of the season, both Swainson’s Thrushes that were released with wing strain. Our last injury of the season was a Northern Saw-whet Owl with wing strain caught on September 29. After holding it overnight, it was released at dusk the following night when it was capable of slightly laboured but sustained flight.

We noted many cases of avian pox on birds’ legs this season, especially among sparrows and most in September. We speculate that it may be tied to the relatively wet late summer/fall. While we recorded nine cases of fairly severe pox on feet/legs (in which cases we did not band the birds) there were some instances where just a minor amount of pox was noted and not recorded in our data.



11. New in 2020

With the Coronavirus pandemic ongoing during the planning for the 2020 season (and, ultimately, the field season itself) a Covid-19 Guidelines document was created and added as an appendix to the contract of each of the banders. This document outlined several measures that banders were obliged to follow. First and foremost was a 14-day quarantine period upon arrival in the Tatlayoko Valley. In terms of how this impacted operations at the TLBO it meant that the banders wore face masks while in the banding lab, separate work stations were created to minimize sharing of equipment, hand sanitizing was frequent and required whenever entering the banding lab and equipment was wiped down with sanitizing wipes at the end of the day and in the infrequent occasions equipment was passed between users. As masks were mandatory, we did not record fat or moult scores or look for brood patches until the quarantine period finished on August 14. A further decision made in the planning for the season was to minimize personnel on site which meant no visitors or volunteers. As the latter provide important aid to the banders the TLBO was fortunate to receive sufficient funding to hire a third bander, a position that was split between Morgan Brown through most of August and Jac Curry for the latter two weeks of September.

While researchers at the Delmore Lab at Texas A&M University did not return to tag Swainson's Thrush again as they did last year we still collaborated with them through the collection of tail feathers (R4) of Swainson's Thrush. We also collected blood, claw and feather (snippings of the tips of P1 and P9 and two GC's) samples from after-hatch-year Swainson's Thrush that were undergoing flight feather moult as part of a collaborative study on moult-migration being undertaken by the Delmore Lab and researchers at McGill University and Thompson Rivers University. In the case of the latter, we were able to get samples from 21 individuals with Avery doing the bulk of the sampling and Morgan taking a few samples in early August. The number of samples was diminished somewhat by the fact that the sampling equipment and relevant permits did not arrive until August 13 meaning we missed a potential 10 or so sample birds.

Plans to setup a Motus receiving station are also in the works as the CWS Delta, BC office has the equipment that they plan on bringing up to the Tatlayoko Valley to setup in the summer of 2021. For more information on the Motus Wildlife Tracking Network see <https://motus.org/>.



Townsend's Warbler

12. Highlights

After two exceptional years when we added a whopping 13 new species to the TLBO list 2020 saw just a further two species added making for an all-time TLBO list of 204 species. Both species were banded and each, it could be argued, were perhaps overdue. The first was a Gray-cheeked Thrush that was caught on opening net round August 29th. This boreal species is known to breed in the subalpine of Tweedsmuir Provincial Park, within 150km of the TLBO. The second addition was a Brewer's Sparrow of the *taverni* subspecies, aka "Timberline" Sparrow, another subalpine breeder that could conceivably breed in the area. This latter was pulled out of Net 14 mid-day on September 6th before measurements taken during banding confirmed the identification.



Gray-cheeked Thrush

Highlights from our banding included a couple first banding records that, unlike the above two species, were not new detections at the station. This included an immature/female type Hooded Merganser that was caught in HN7 on Aug. 16. This was our first ever capture of a waterfowl species and though we did not have the appropriate band size for it we were thrilled to catch it! We would yet get to band our first waterfowl though as on Sept. 10 a hatch-year female Green-winged Teal was also caught in HN7 and this time we had the right band size for it! Our final "first banding record" was a Northern Saw-whet Owl, still in mostly juvenile plumage, which we caught in Net 14 on September 22. While we of course band many of these during our nocturnal owl banding this was the first time we have caught one during a daytime session.

Our only banded Nashville Warbler of the season came early, on Aug. 9. This was a departure from the



"Timberline" Brewer's Sparrow

norm as in most years we only catch them in mid to late September. Our third banding record of Veery came on Sept. 23 when one hit the north end of Net 6. Later that day Net 14 produced a hatch-year male Calliope Hummingbird, a species that we do not band and that we have only ever caught on a handful of occasions. On Aug. 25 some time spent trying to catch an American Kestrel with the bal-chatri trap paid off when a probable adult (they are tricky to age) female hit the trap. Sept. 8 provided us with a surprise as we came around the corner to Net 16 – a Belted Kingfisher (4th banding record), right in the middle of the net! Sept. 10 was a momentous day as not only did we band the aforementioned Teal but we also caught our only Northern Harrier of the season in HN4 as well as a hatch-year Blackpoll Warbler (6th banding record) in Net 16!



Blackpoll Warbler

Two beautiful birds graced us with their presence in mid-September. On Sept. 11, a hatch-year Steller's Jay was caught in HN9, just the 6th banding record and only the third season we have caught this species. This was followed by a third-year Red-breasted Sapsucker (9th banding record) on Sept. 13. With the exception of 2014 when we banded five, this is a scarce species at the TLBO that is not detected every year.

Late September can often bring in some unexpected species but this year we had to make do with a couple of uncommon subspecies. A "Red" Fox Sparrow was banded on Sept. 11 while a second one that could have been a possible intergrade "Red x Sooty", or just a duller "Red" was caught Sept. 27. Meanwhile, a hatch-year male "Slate-colored" Dark-eyed Junco was banded on Sept. 26, likely a first banding record of this boreal version of our "Oregon" Juncos.

Outside of the nets there were plenty of notable sightings although it took a couple weeks for anything unusual to show up. While annual the past few years, a Gray Catbird that was heard near net 6 on Aug. 8 and then seen again on Aug. 25 along the road near the lagoon was of note. Our first detection of a Mew Gull since 2014 was a surprise and just the third record of this species at the TLBO. This juvenile bird hung around and was seen on four different days over the period of Aug.



"Red" Fox Sparrow by Sachi Dell

15-Sept. 4. Cassin's Finches are scarce locally, at least in the fall, but in 2020 we detected this species several times throughout the season with a high count of four individuals in a group on Aug. 30.

August 25 brought us a trio of interesting birds including our second record of House Wren that was spotted near the outhouse. It was seen again in this same area on Aug. 31 as well. Later on that morning a Clay-colored Sparrow was spotted along the road on the way back from census. This species has



Clay-colored Sparrow

become pretty much annual and this represents what is likely the 8th record for the TLBO. Our final noteworthy sighting on the 25th was a Black-backed Woodpecker that was heard then briefly seen on the "woodpecker snag" behind Net 1, a presumed 6th record for the station that was detected again on Sept. 6.

While not a rare species, an almost completely white leucistic Song Sparrow was spotted and photographed near the banding lab on Aug. 27. Alas, despite seeing it again near Net 13 we did not end up catching it.



Leucistic Song Sparrow by Sachi Dell

Like the Blackpoll Warbler, Magnolia Warblers are one of our "regular irregulars" that show up every couple years. Sachi had the pleasure of finding one near the outhouse on census Sept. 6 and it even gave a couple snatches of song. Sachi would also have a duo of interesting sightings on census on Sept. 16 as he noted a Long-billed Dowitcher flush out the wetland north of the lagoon and then spotted an American Coot at the north end of the

lake. For both of these locally scarce species it was just the 3rd record for the station. While the Coot was not seen again the Dowitcher remained in the area for three consecutive days.

The TLBO's 3rd ever Blue Jay was heard at the north end of the lake on Sept. 18 and presumably the same bird was heard across the Homathko from Net 10 on Sept. 25. Late morning on the 18th a Lapland Longspur was heard flying south over the field in front of the

banding lab. What was likely the same bird was detected again the following morning, heading north.

Some poor weather on Sept. 21 brought us a Common Tern (3rd record) that was spotted on census flying north over the area referred to as “the pines”, about one third of the way along the census route. The next morning a Northern Shrike was briefly seen on the snag to the north of Net 12 before it flew off across the Homathko. Later that morning a very confiding Boreal Chickadee was noted foraging in the pines to the east of the banding lab. The 2nd record of American White Pelican came on Sept. 27 as a pair were noted flying south over the Homathko.

Finally, the day of September 25 as a whole deserves consideration as perhaps the “highlight of the season”. Poor weather can sometimes cause large movement of birds at a landscape scale and these often take place quite low with birds flying through at treetop level or not much higher. On this day this is precisely what happened, for just the second time in the TLBOs history to the best of the authors’ knowledge. While rain overnight and first thing in the



[Boreal Chickadee](#)

morning, along with persistent winds, delayed our arrival at the bird observatory, once we started monitoring at 7:45 it was apparent that there was a steady stream of birds heading south along both sides of the valley. An American Bittern was flushed from the banks of the Homathko (5th record) providing the most unusual species of the day along with the aforementioned Blue Jay. Between 8:00 and 10:30 we more or less had either Avery or Sachi stationed along the Homathko to document the movement of birds overhead while Jac monitored the movement along the airstrip on the east side of the valley from 8:30 until 9:30 and Avery spent some time there later in the morning as well. The bulk of movement came between 8:00 and 9:30 and over the course of the morning we would tally nearly 2200 Yellow-rumped Warblers along with over 100 Varied Thrush (the highest flyers on this day), 150 Ruby-crowned Kinglets and over 250 Dark-eyed Juncos!

Table 8 Highlights from the 2020 season; birds highlighted in yellow are 1st banding records, in orange 1st station records

Species	Details
Green-winged Teal	1 banded from HN7 on Sept. 10; 1st banding record
Hooded Merganser	1 mistnetted in HN7 on Aug. 16; 1st ever capture, no appropriate band
American White Pelican	2 Observed flying south along Homathko on Sept. 27; 2nd station record
American Bittern	1 flushed from beside Homathko near HN7 Sept. 25; 5th station record
Northern Harrier	1 banded from HN4 on Sept. 10; 13th banding record
American Coot	1 seen on census at N end of lake on Sept. 16; 3rd station record
Long-billed Dowitcher	1 seen on three consecutive days Sept. 16-18; 3rd station record
Mew Gull	1 Juv. on census Aug. 15, 16, 28 and Sept. 4; 3rd station record
Common Tern	1 observed flying N on census Sept. 21; 3rd station record
Northern Saw-whet Owl	1 banded Sept. 22; 1st banding record, 2nd station record during daytime
Calliope Hummingbird	1 HY/M caught in Net 14 on Aug 23; one of only a few ever caught at TLBO
Belted Kingfisher	1 banded Sept. 8; 4th banding record
Red-breasted Sapsucker	1 Third-year banded Sept. 14; 9th banding record
Black-backed Woodpecker	1 observed Aug. 25 and Sept. 4; presumed 6th station record
American Kestrel	1 Female (prob AHY) banded Aug. 25; 5th banding record
Northern Shrike	1 observed Sept. 22; presumed 6th station record
Steller's Jay	1 banded from HN9 on Sept. 11; 6th banding record
Blue Jay	1 on census Sept 18, observed again on 25th; 3rd station record
Boreal Chickadee	1 observed E of banding lab on Sept. 22
House Wren	1 observed near outhouse on Aug 25 and 31; 2nd station record
Veery	1 banded from Net 6 on Aug. 23; 3rd banding record, 4th station record
Gray-cheeked Thrush	1 banded from Net 1 on Aug. 29; 1st station record
Gray Catbird	1 observed Aug. 8 and 25, presumed same bird
Lapland Longspur	1 flyover calling on Sept. 18-19; presumed 11th station record
Nashville Warbler	1 banded on Aug. 9 from net 14; 12th banding record
Magnolia Warbler	1 near the outhouse on census Sept. 6; presumed 12th station record
Blackpoll Warbler	1 on census Aug. 27, banded Sept. 10, recap Sept. 12; 6th banding record
Clay-colored Sparrow	1 observed along road Aug. 25; presumed 8th station record
Brewer's Sparrow	1 banded Sept. 6 from Net 14; 1st station record
"Red" Fox Sparrow	1 banded Sept. 11, another intergrade/pure "Red" banded Sept. 27
"Slate-colored" Junco	1 banded Sept. 26 from net 12; 1st banding (and station?) record
Cassin's Finch	14 detections, apparent family group, 1-4 birds noted throughout season

Highlights 2020



Clockwise from 12 o'clock; Steller's Jay by *Sachi Dell*, Veery, Red-breasted Sapsucker by *Sachi Dell*, Belted Kingfisher, "Slate-colored" Junco and Northern Harrier

Appendix A Banding and recapture totals from 2020

Species	Band	Recap
Sharp-shinned Hawk	5	0
Northern Saw-whet Owl	1	0
Belted Kingfisher	1	0
Red-breasted Sapsucker	1	0
Red-naped Sapsucker	2	0
Downy Woodpecker	3	0
Pacific-slope Flycatcher	3	0
Willow Flycatcher	5	2
Alder Flycatcher	7	0
Least Flycatcher	1	0
Hammond's Flycatcher	7	0
Dusky Flycatcher	14	7
Warbling Vireo	99	3
Red-eyed Vireo	3	2
Black-capped Chickadee	8	17
Red-breasted Nuthatch	3	0
Golden-crowned Kinglet	2	0
Ruby-crowned Kinglet	129	1
Veery	1	0
Gray-cheeked Thrush	1	0
Hermit Thrush	9	0
Swainson's Thrush	124	37
American Robin	5	1
Varied Thrush	1	0
Cedar Waxwing	8	4
Northern Waterthrush	32	5
Orange-crowned Warbler	64	3
Nashville Warbler	1	0
MacGillivray's Warbler	31	2
Common Yellowthroat	86	11
American Redstart	38	6
Yellow Warbler	36	5
Blackpoll Warbler	1	1
Yellow-rumped Warbler	30	0
Townsend's Warbler	3	0
Wilson's Warbler	36	0
Spotted Towhee	1	0

Species	Band	Recap
Chipping Sparrow	1	0
Brewer's Sparrow	1	0
Savannah Sparrow	23	0
Fox Sparrow	20	5
Song Sparrow	200	80
Lincoln's Sparrow	199	28
"Oregon" Junco	22	0
"Slate-colored" Junco	1	0
White-crowned Sparrow	29	0
Golden-crowned Sparrow	5	0
White-throated Sparrow	2	0
Western Tanager	1	0
Lazuli Bunting	1	0
Brown-headed Cowbird	1	0
Purple Finch	3	1
Pine Siskin	8	0
"Traill's" Flycatcher	6	3
Total	1325	224

Appendix B Daily Estimated Totals (DET) and Banding totals in 2020 compared to average, in taxonomical order

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Greater White-fronted Goose	0	7.5	0	0
Canada Goose	5	434.5	0	0
Snow Goose	0	2.3	0	0
Wood Duck	0	6.6	0	0
Mallard	790	473.5	0	0
Gadwall	0	3.1	0	0
Northern Pintail	47	24.2	0	0
American Wigeon	36	236.3	0	0
Eurasian Wigeon	0	0.1	0	0
Blue-winged Teal	0	4.5	0	0
Cinnamon Teal	0	0.5	0	0
Northern Shoveler	7	24.8	0	0
Green-winged Teal	181	93.1	0	0
Redhead	0	0.1	0	0
Ring-necked Duck	100	82.3	0	0
Greater Scaup	0	0.1	0	0
Lesser Scaup	0	4.2	0	0
Surf Scoter	0	0.2	0	0
Barrow's Goldeneye	1	9.3	0	0
Common Goldeneye	0	4.2	0	0
Bufflehead	5	3.5	0	0
Hooded Merganser	5	10.2	0	0
Common Merganser	21	33.9	0	0
Red-breasted Merganser	0	0.4	0	0
Dusky Grouse	0	6.2	0	0
Ruffed Grouse	79	150.2	0	0
Common Loon	60	44.6	0	0
Horned Grebe	4	2.2	0	0
Red-necked Grebe	22	11.2	0	0
Western Grebe	0	0.3	0	0
Pied-billed Grebe	10	17.2	0	0
American White Pelican	2	0.1	0	0
American Bittern	1	0.5	0	0
Great Blue Heron	20	27.2	0	0
Turkey Vulture	9	0.7	0	0
Northern Harrier	72	41.0	0	0.1
Osprey	60	47.5	0	0
Sharp-shinned Hawk	63	68.5	5	4.4
Cooper's Hawk	5	12.0	0	0.1
Northern Goshawk	2	4.0	0	0
Red-tailed Hawk	22	10.2	0	0

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Golden Eagle	0	0.3	0	0
Bald Eagle	38	25.5	0	0
American Coot	1	0.2	0	0
Sandhill Crane	8	4.8	0	0
Virginia Rail	0	1.2	0	0
Sora	4	5.1	0	0
Semipalmated Plover	0	0.1	0	0
Killdeer	6	6.5	0	0
Greater Yellowlegs	0	1.3	0	0
Lesser Yellowlegs	0	0.2	0	0
Solitary Sandpiper	3	2.2	0	0
Spotted Sandpiper	65	57.8	0	0
Upland Sandpiper	0	0.2	0	0
Long-billed Curlew	0	0.2	0	0
Western Sandpiper	0	0.3	0	0
Least Sandpiper	0	2.2	0	0
Pectoral Sandpiper	0	0.1	0	0
Long-billed Dowitcher	3	0.2	0	0
Wilson's Snipe	15	7.6	0	0.2
Wilson's Phalarope	0	0.4	0	0
Red-necked Phalarope	0	0.9	0	0
Red Phalarope	0	0.1	0	0
Sabine's Gull	0	0.1	0	0
Bonaparte's Gull	0	2.0	0	0
Mew Gull	4	0.2	0	0
Ring-billed Gull	0	9.9	0	0
California Gull	10	4.6	0	0
Herring Gull	26	40.8	0	0
Caspian Tern	0	0.2	0	0
Common Tern	1	0.2	0	0
Long-tailed Jaeger	0	0.3	0	0
Mourning Dove	0	1.3	0	0
Eurasian collared-Dove	1	2.5	0	0
Great Horned Owl	6	3.2	0	0
Barred Owl	0	0.3	0	0
Northern Saw-whet Owl	1	6.8	1	0
Northern Pygmy-Owl	7	4.9	0	0
Black Swift	65	27.0	0	0
Vaux's Swift	0	1.0	0	0
Calliope Hummingbird	4	1.5	0	0
Rufous Hummingbird	11	23.9	0	0.1
Belted Kingfisher	90	81.1	1	0.2
Lewis' Woodpecker	0	1.6	0	0

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Red-breasted Sapsucker	5	3.0	1	0.7
Red-naped Sapsucker	30	42.2	2	2.1
Downy Woodpecker	66	73.8	3	3.5
Hairy Woodpecker	76	92.5	0	3.8
Three-toed Woodpecker	5	1.8	0	0
Black-backed Woodpecker	2	1.2	0	0
Northern Flicker	267	206.1	0	1.1
Pileated Woodpecker	67	49.2	0	0.2
Peregrine Falcon	1	1.5	0	0
Prairie Falcon	0	0.1	0	0
Gyr Falcon	0	0.2	0	0
American Kestrel	63	83.8	0	0
Merlin	52	36.0	0	0.2
Olive-sided Flycatcher	16	15.2	0	0.5
Western Wood-pewee	24	19.6	0	1.5
Pacific-slope Flycatcher	3	4.0	3	3.1
Yellow-bellied Flycatcher	0	0.1	0	0.1
Willow Flycatcher	8	12.5	5	9.5
Alder Flycatcher	66	60.4	7	12.4
Least Flycatcher	6	13.1	1	3.6
Hammond's Flycatcher	30	16.8	7	8.1
Dusky Flycatcher	232	58.7	14	10.6
Say's Phoebe	0	0.1	0	0
Eastern Kingbird	0	0.8	0	0
Northern Shrike	1	0.6	0	0
Cassin's Vireo	26	17.2	0	1.5
Warbling Vireo	657	519.8	99	133.1
Red-eyed Vireo	41	65.7	3	9.4
Steller's Jay	11	12.5	0	0.3
Blue Jay	2	0.2	0	0
Clark's Nutcracker	604	233.5	0	0
Gray Jay	0	4.3	0	0
Common Raven	97	98.2	0	0
American Crow	967	1213.5	0	0.1
Horned Lark	57	82.5	0	0
Tree Swallow	4	13.4	0	0
Violet-green Swallow	274	57.4	0	0
Bank Swallow	4	3.3	0	0
N. Rough-winged Swallow	34	27.3	0	0
Cliff Swallow	0	1.8	0	0
Barn Swallow	32	48.7	0	0
Mountain Chickadee	192	98.8	0	2.4
Black-capped Chickadee	430	589.3	8	21.2

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Chestnut-backed Chickadee	0	1.5	0	0.1
Boreal Chickadee	1	2.0	0	0.7
Red-breasted Nuthatch	192	163.8	3	4.7
Brown Creeper	2	5.5	0	1.9
House Wren	2	0.1	0	0
Pacific Wren	5	6.9	0	1.5
Marsh Wren	0	4.1	0	0.6
American Dipper	0	0.1	0	0
Golden-crowned Kinglet	67	66.8	2	9.8
Ruby-crowned Kinglet	1235	777.2	129	109.2
Townsend's Solitaire	23	8.6	0	0.1
Mountain Bluebird	53	50.8	0	0
Western Bluebird	0	0.2	0	0
Veery	1	0.2	1	0.2
Gray-cheeked Thrush	1	0.0	1	0
Hermit Thrush	27	24.7	9	12.5
Swainson's Thrush	446	362.6	124	136.8
American Robin	582	701.8	5	12.3
Varied Thrush	168	37.3	1	1.7
Gray Catbird	2	2.2	0	0.2
European Starling	20	43.5	0	0
American Pipit	758	456.2	0	0
Bohemian Waxwing	0	5.6	0	0
Cedar Waxwing	876	904.1	8	17.8
Lapland Longspur	2	0.8	0	0
Northern Waterthrush	107	136.8	32	43.8
Black and White Warbler	0	0.2	0	0.1
Orange-crowned Warbler	274	224.7	64	83.7
Tennessee Warbler	0	0.7	0	0.2
Nashville Warbler	2	2.2	1	0.8
MacGillivray's Warbler	126	78.6	31	31.8
Common Yellowthroat	516	562.8	86	123.5
American Redstart	208	208.2	38	50.2
Magnolia Warbler	1	0.8	0	0.5
Yellow Warbler	239	262.2	36	75.2
Blackpoll Warbler	4	0.5	1	0.4
Western Palm Warbler	0	0.1	0	0.1
Yellow-rumped Warbler	7538	2684.9	30	90.2
Black-throated Gray Warbler	0	0.1	0	0.1
Townsend's Warbler	57	19.9	3	3.9
Wilson's Warbler	173	123.9	36	55.2
Spotted Towhee	38	55.2	1	2.5
Clay-colored Sparrow	1	0.9	0	0.4

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Chipping Sparrow	539	306.3	1	3.5
Brewer's Sparrow	1	0.0	1	0
Savannah Sparrow	981	398.3	23	26.4
Le Conte's Sparrow	0	0.1	0	0
Vesper Sparrow	86	54.9	0	3.7
Lark Sparrow	0	0.2	0	0
American Tree Sparrow	0	0.1	0	0
Fox Sparrow	64	13.4	20	4.9
Song Sparrow	1187	735.8	200	140.8
Lincoln's Sparrow	924	608.6	199	187.8
Swamp Sparrow	0	1.2	0	0.7
Oregon Junco	834	335.3	22	32.4
White-crowned Sparrow	278	260.6	29	36.8
Golden-crowned Sparrow	25	23.3	5	5.2
White-throated Sparrow	26	8.7	2	1.3
Western Tanager	44	78.5	1	6.8
Lazuli Bunting	1	14.8	1	5.1
Indigo Bunting	0	0.2	0	0
Brewer's Blackbird	0	37.8	0	0
Rusty Blackbird	3	3.7	0	0
Red-winged Blackbird	164	246.8	0	2.5
Yellow-headed Blackbird	0	1.2	0	0
Brown-headed Cowbird	4	9.8	1	0.2
Western Meadowlark	208	156.2	0	0
Bullock's Oriole	0	0.2	0	0
Pine Grosbeak	0	4.0	0	0
Evening Grosbeak	47	80.5	0	0.2
Purple Finch	21	51.1	3	4.5
Cassin's Finch	14	0.6	0	0
Red Crossbill	96	145.7	0	0.2
White-winged Crossbill	6	50.3	0	0
Pine Siskin	2245	1338.4	8	13.6
American Goldfinch	0	0.1	0	0
Black-headed Grosbeak	0	0.1	0	0
Unidentified Goose	30	0.0	0	0
Unidentified Duck	19	41.6	0	0
Unidentified Dabbling	9	0.6	0	0
Unidentified Accipiter	1	1.2	0	0
Unidentified Shorebird	16	3.6	0	0
Unidentified Gull	21	28.8	0	0
Unidentified Hummingbird	1	0.5	0	0
Hybrid Sapsucker	0	0.2	0	0.1
Flicker Intergrade	4	2.8	0	0.9

Species	DET	Avg. DET 2006-19	Banded	Avg. Banded 2006-19
Red-shafted Flicker	17	0	0	0
Yellow-shafted Flicker	0	9.2	0	0
Unidentified Empidonax	3	9.7	0	0.2
Traill's Flycatcher	10	12.4	6	4.5
Unidentified Swallow	22	9.6	0	0
Unidentified Warbler	35	3.1	0	0
Slate-colored Junco	1	0.0	1	0
Unidentified Sparrow	3	4.5	0	0
Unidentified Blackbird	7	4.3	0	0
Unidentified Finch	2	0.4	0	0
Total	28196	19202.8	1325	1589.1