

**2009 Annual  
Report**



**Steve Ogle**

*Bander-in-charge*

*In affiliation with:*

**The Nature Conservancy of Canada**

**Canadian Wildlife Service**

## OUR APPRECIATION!



Calliope Hummingbird

Thank you to the following people for making our fourth season a great success:

Chris Chutter  
Peter, Roma and Patricia Shaughnessy  
Cindy McCallum  
Audrey and Nils Hoeg  
Leah and William Jones  
Karen Krushelnick  
Michael Simmons  
Manu Buschiazzo  
Anna Plancherel  
Charlie and Ruth Travers  
Mark Taylor  
Andrew and Gail Harcombe  
Amy O'Neill  
Erin O'Brian

Cory Rabourn  
Bob Sagar, Hani, and Elias  
Barry Lancaster  
Laurenz Teuber  
Rick Howie  
John Kerr  
Pierre Geoffray  
The Mueller Family  
Chris Rowat  
Eric Demers  
Karen Parry  
Mark Habdas  
Xeni Gwet'in First Nations  
Wendy Easton, CWS

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*NCC's Conservation Volunteers program  
Royal Bank of Canada  
Mr. James Lornie  
BC Trust for Public Lands*



Tatlayoko Lake



## WHY WE DO IT

August and September 2009 marked the fourth season of successful operations by the Tatlayoko Lake Bird Observatory. The primary objective of the observatory (TLBO) is to monitor, assess, and demonstrate bird migration patterns over time. Our data is annually contributed to the Canadian Migration Monitoring Network (CMMN), part of an international program to evaluate migratory bird population trends over the long term. TLBO—founded in 2006 by the Nature Conservancy of Canada (NCC)—is part of a science and monitoring initiative based on several conservation properties in the Tatlayoko Valley of south-central British Columbia. The observatory is based in a valley-bottom tract of active rangeland and riparian habitat known as the Tatlayoko Ranch, acquired by NCC in 1999. The impressive Tatlayoko Lake and Homathko River (the latter a mere trickle as it flows past the observatory) drain out to the Pacific, connecting interior and coastal habitats as they cut through the Coast Mountain Range. The riparian area of the Tatlayoko Ranch has proven to be a productive stopover point for birds passing through during the fall migration season (TLBO reports 2007, 2008).

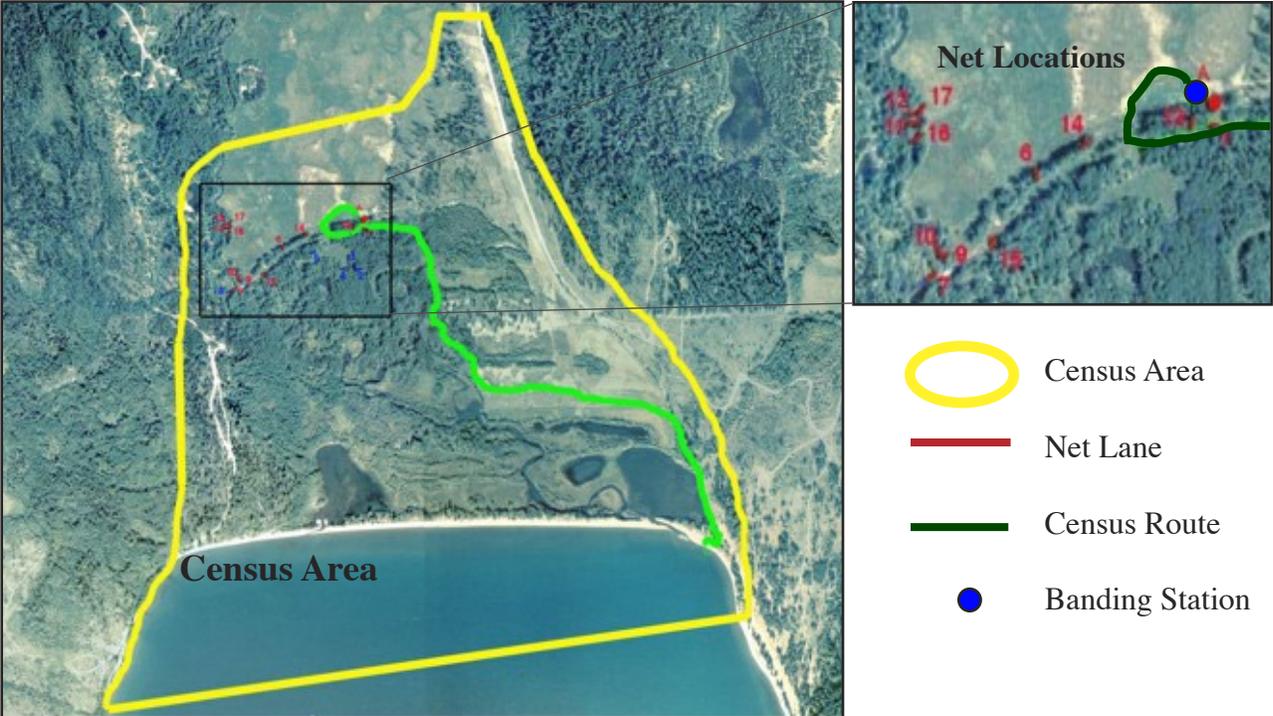
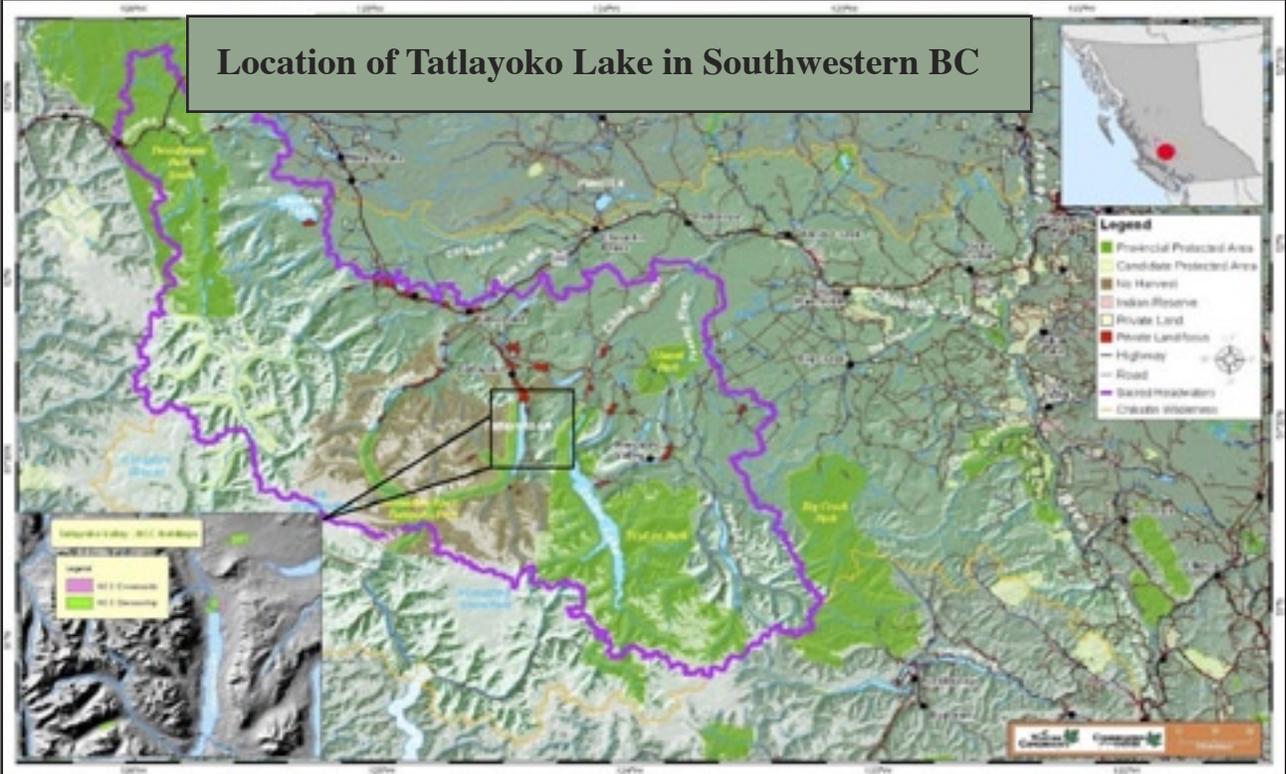
Results of this ongoing project will be used to evaluate the success of NCC’s local conservation strategies in addition to providing research and educational opportunities for local, regional and even international initiatives. Data is shared with the Canadian Wildlife Service, Bird Studies Canada and other research and monitoring programs.



Bander Chris Chutter showing off our colours

# HOW WE DO IT

## Location:



## Activities:

TLBO operates twelve 12-metre mist-nets designed to catch birds moving through understory. On each day, a bander-in-charge, banding assistant and varying numbers of volunteers are present at the site. **BANDING** generally occurs every morning for six hours during the two-month season, as weather permits. Captured birds are collected at regular intervals and brought to the station for banding and the following measurements: Species, age, sex, weight, wing length, moult, and fat score. Data are compiled in the software program Bandit (Bird Banding Lab 2008). Birds that are already banded are sometimes captured again, in which case all of the above measurements are still taken in addition to recording the band number of the recaptured individual. Same-day recaptures are released at the net.

**CENSUS** occurs each day, whereby an experienced observer follows the standard route shown in Figure 2. During the roughly one hour interval, all birds are counted as long as they are within the census area boundary.

**INCIDENTAL OBSERVATIONS** are also recorded, meaning birds that are sighted during regular operations exclusive from banding or census. A daily running tally is compiled by people hanging around the station, walking around and while on net rounds.

Each day, totals from banding, recaptures, census and incidental observations are compiled and tallied to come up with a number for each species. The result is a “**DAILY ESTIMATED TOTAL,**” or ET, which is a daily assessment of how many individuals of each species were counted in the areas covered by observers during the morning’s operations.

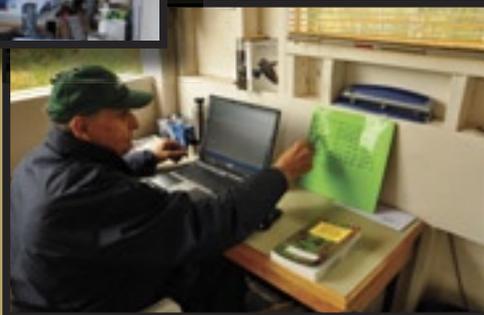




Capture...  
Process...  
Release !



Photo: P. Slaughtermessy



# RESULTS

Monitoring began on August 3rd and finished on September 30th for a total of 59 days, however some days the effort was protracted due to weather conditions. Recording start and end times, hours for each net, environmental conditions and observer effort took place on the Daily Log.

## Volunteer Effort and Visitors:

Eighteen volunteers participating in NCC's conservation volunteer project were stationed at TLBO for one week at a time. Collectively, these wonderful contributors allocated a total of 668 hours of their time directly assisting with the bird observatory this season. This does not include any commuting time or off-site activities. Our two staff banders added another 600 hours at the station for a total of over 1200 hours of migration monitoring effort. The average day involved 25 hours of person-hours of migration monitoring at the station. Countless hours were added by NCC support staff (mainly Roma and Peter Shaughnessy and Andrew Harcombe) to help coordinate volunteers and keep the station operational. From two to seven personnel were present each day.

Visitors arriving to check out the banding were also noteworthy contributors: A total of 39 different people showed up at the station, many of them more than once. This includes a stopover by nine members of the Xeni Gwet'in First Nations from the nearby Nemiah Valley.



## Bander statistics:

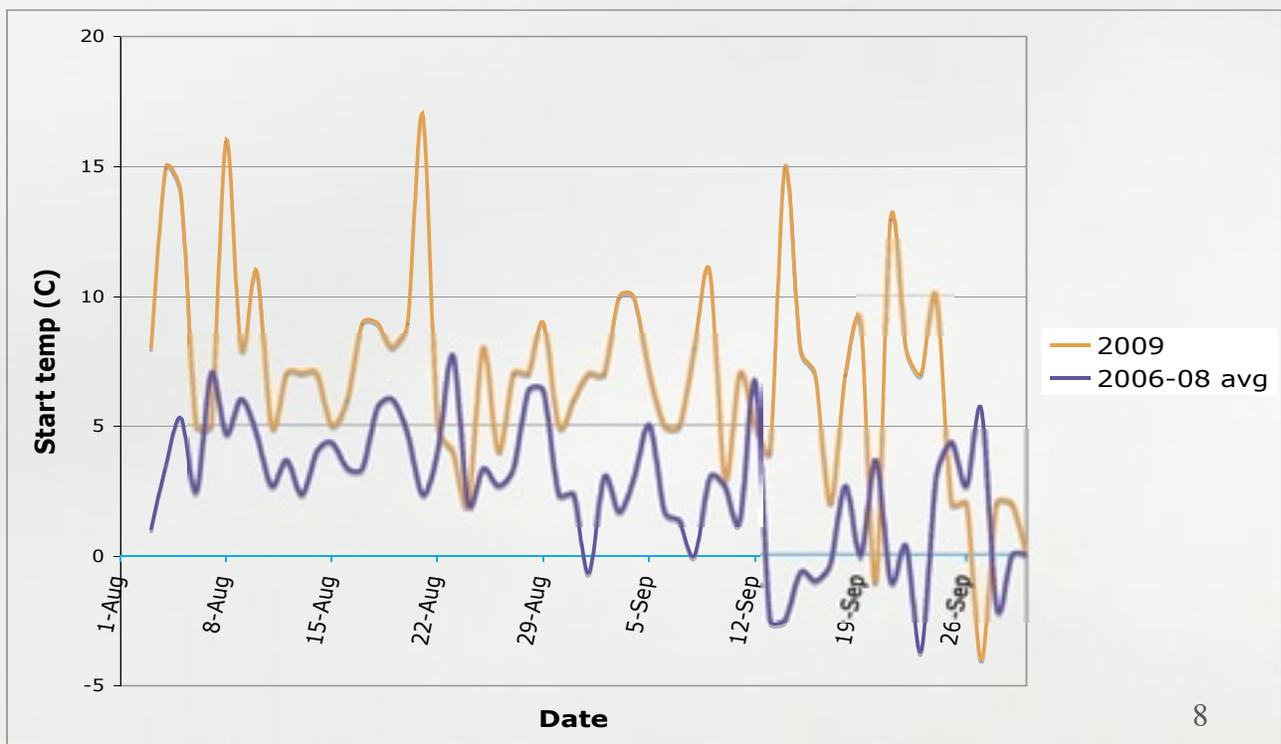
Bander	Status	Banded	Percent of	
			total	Recaps
Chris Chutter	Assistant bander	413	22	114
Cindy McCallum	Assistant bander	350	19	39
Steve Ogle	bander-in-charge	860	46	116
Barry Lancaster	volunteer	183	10	23
Laurenz Teuber	volunteer	35	2	4
Mark Habdas	volunteer	14	1	7
Pierre Geoffray	Volunteer	11	1	5



## Environmental conditions:

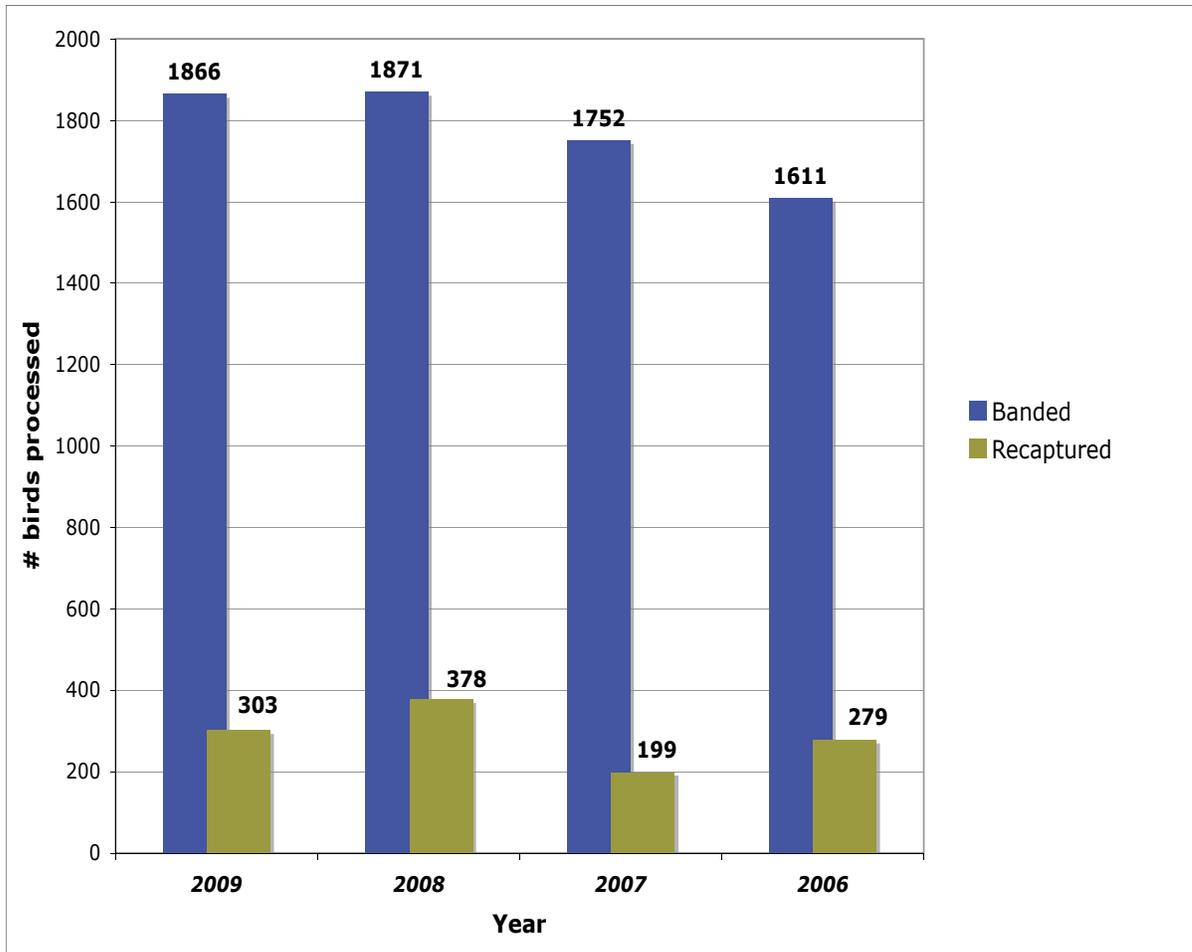
This season was marked by very warm temperatures, with an average daily start temperature of 6.9 C, compared to the 2008 average of 4.2 C and the 2006-08 average of 2.6 Celsius. Part of this may be the result of a faulty thermometer but we did get record temperatures in the valley, and certainly set a station record of 33 C when closing on August 20th. At one point this summer nearby Bella Coola was the warmest place in North America at 44 Celsius! The average closing temperature was 20.6, around the same as in 2008. There was plenty of smoke in the valley from nearby forest fires.

Temperature at sunrise, 2006-2009



# Banding results:

Number of birds banded and recaptured in each year

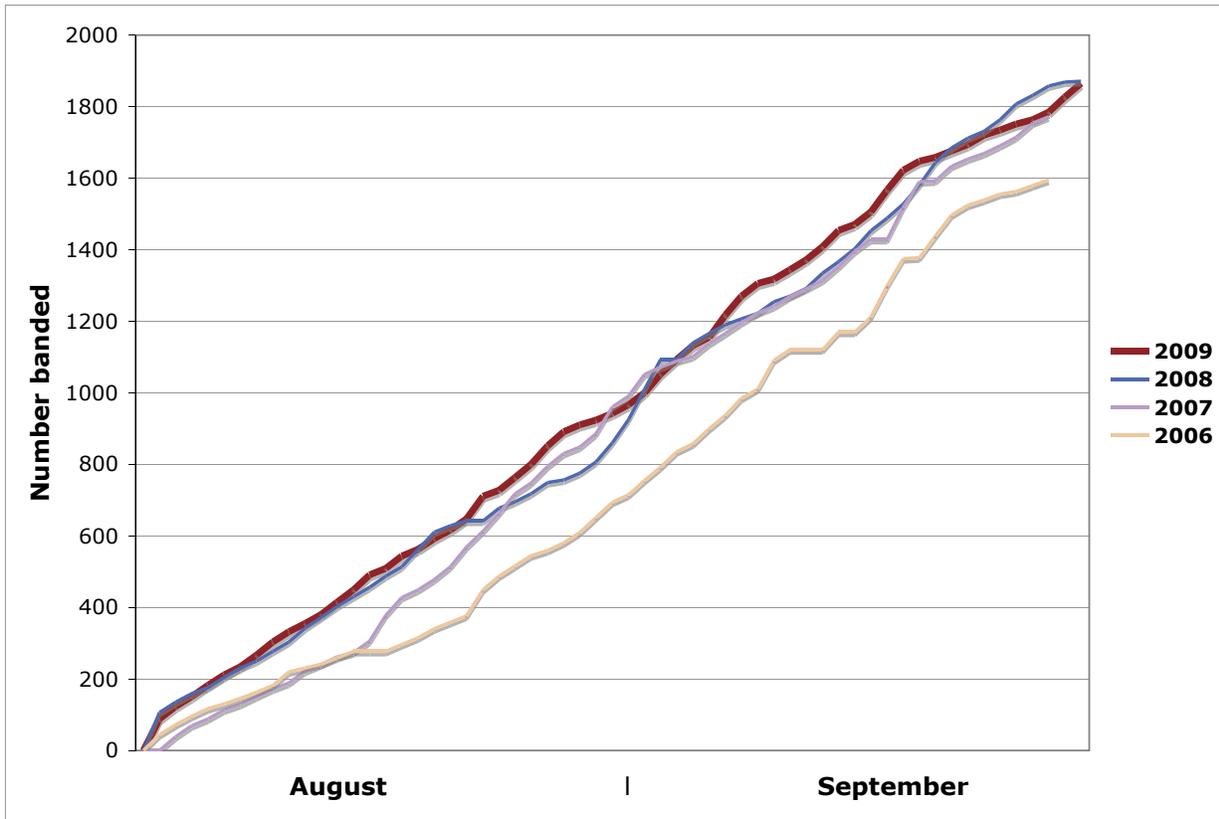


TLBO has now banded 7100 birds after four seasons. The 2009 effort was another high volume production and we were on track for our best totals ever, but migration petered out late in the season, resulting in a tally of 1866 birds banded and 303 recaptured. Surprisingly however, a total of 38 banded on the final day of operations (over the daily average of 34) showed us that it was a weird migration with some stragglers still passing through after we closed.

We banded 55 birds on our first day then continued to capture steady numbers until a dip at the end of September. Our **PEAK MORNINGS** occurred on the following dates:

Date	Banded	Recaptured
August 24 <sup>th</sup>	64	12
August 28 <sup>th</sup>	54	9
September 4 <sup>th</sup>	53	0
September 8 <sup>th</sup>	63	7
September 9 <sup>th</sup>	52	7
September 18 <sup>th</sup>	66	0
September 19 <sup>th</sup>	55	3
<i>Daily average:</i>	34	5

### Cumulative banding total for each season:



Lincoln’s Sparrows topped the chart this season as the most commonly banded species and remain the overall most banded bird at TLBO. In fact, one in eight birds banded at TLBO is a Lincoln’s Sparrow. This season, Song Sparrow and Common Yellowthroat were the second and third most commonly banded species. We also banded higher-than-average numbers of Wilson’s and Yellow Warblers, most flycatchers except Least (only 2), Pine Siskin, Cedar Waxwing, Red-breasted Nuthatch and Savannah Sparrow, but notably low numbers of Yellow-rumped Warbler, Black-capped Chickadee, Lazuli Bunting, Sharp-shinned Hawk and Northern Flicker.

### Top ten species banded in 2009:

Rank	Species	Number banded 2009	Number banded all years
1	Lincoln's Sparrow	241	924
2	Warbling Vireo	162	531
3	Swainson's Thrush	141	461
4	Orange-crowned Warbler	126	497
5	Ruby-crowned Kinglet	123	479
6	Common Yellowthroat	113	500
7	Yellow Warbler	104	324
8	Song Sparrow	101	545
9	Wilson's Warbler	92	288
10	American Redstart	55	203

This year we banded 56 species—the same as in 2008, but higher than the 2007 and 2006 totals of 54 and 53, respectively.

## Census:

The daily census is a strong tool in our monitoring arsenal because it provides a standardized count of many species not caught in the nets. The overall numbers of certain species were impressive, such as the 1868 Pine Siskins and 708 Yellow-rumped Warblers counted throughout the season (with only 37 and 43 banded). Species with significantly higher numbers over 2008 included: Cedar Waxwing, American Robin, Oregon Junco and Mallard. Those lower than in 2008 included Ruby-crowned Kinglet, Yellow-rumped Warbler, Song Sparrow and American Crow. Only 44 Lincoln's Sparrows were counted on census the entire season, about six times less than the amount that passed through the banding station. 111 species were recorded on census this year but the average number per day was 26 species, with a high of 40 on August 6th. Early August usually turns up the most species before diversity slacks off until in September when we see some distinct waves of migration pass through.

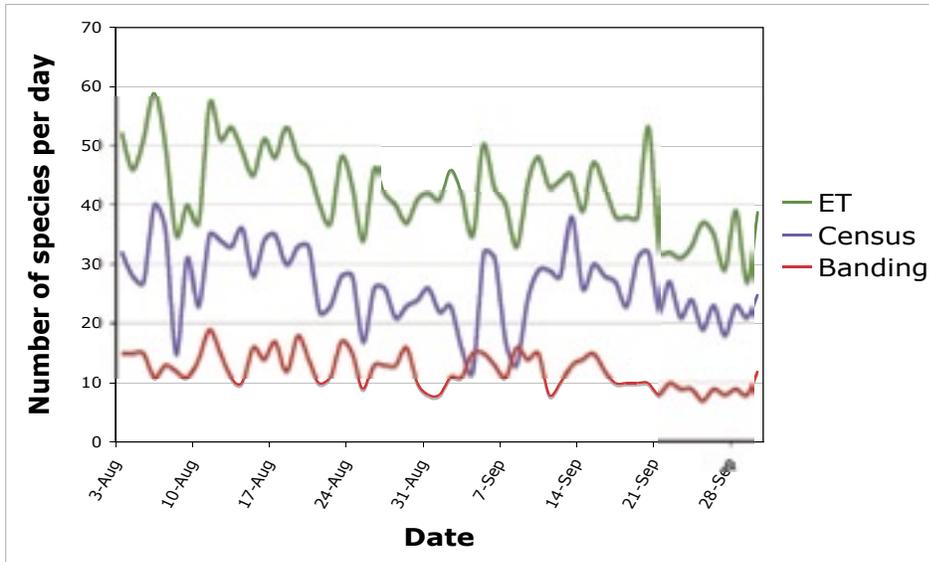
### Top ten species recorded on census

Species	Rank	Overall number detected	Number of days detected	Rank in 2008
Pine Siskin	1	1878	54	3
Yellow-rumped Warbler	2	708	50	1
Cedar Waxwing	3	566	45	8
American Robin	4	341	46	11
Oregon Junco	5	303	34	18
Mallard	6	302	35	7
Canada Goose	7	278	20	14
Black-capped Chickadee	8	264	57	6
American Crow	9	232	30	2
American Wigeon	10	198	17	4

# Species Diversity:

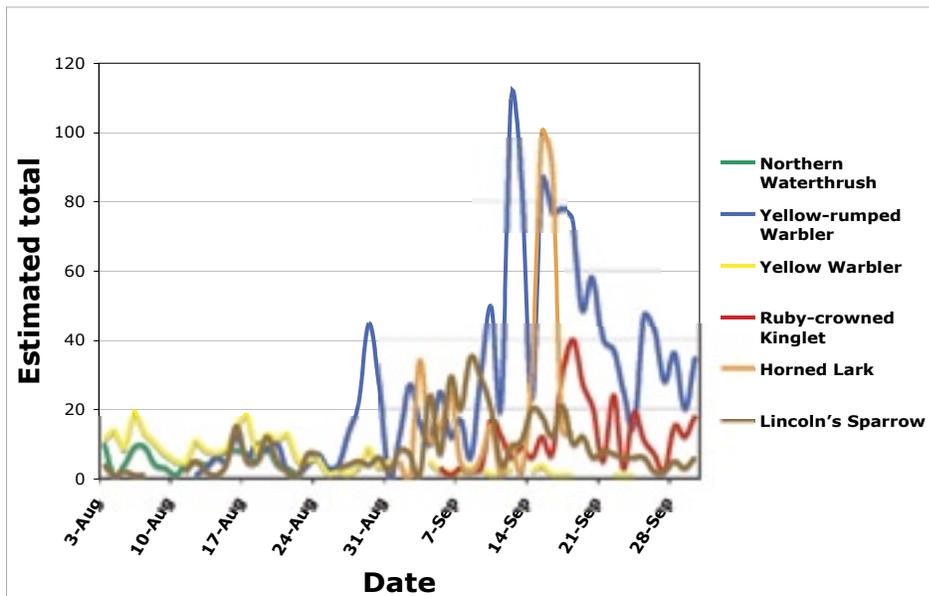
Species diversity is best measured by analysis of estimated total (ET) data, incorporating banding, census and observational sampling. Daily variation notwithstanding, species diversity this season decreased over time, slightly more subtly than in previous years. Four new bird species were added to the main TLBO species list this season: Greater White-fronted Goose, California Gull, Veery, and Caliope Hummingbird.

## Species diversity patterns from banding, census and daily totals



# Chronology:

## Seasonal abundance of some common species:



As the season progresses, we see a turnover of species. For example, swallows and larks rarely cross paths at TLBO in the fall. The former are long gone before the latter begin to show up. It is interesting to see these patterns of abundance over time.

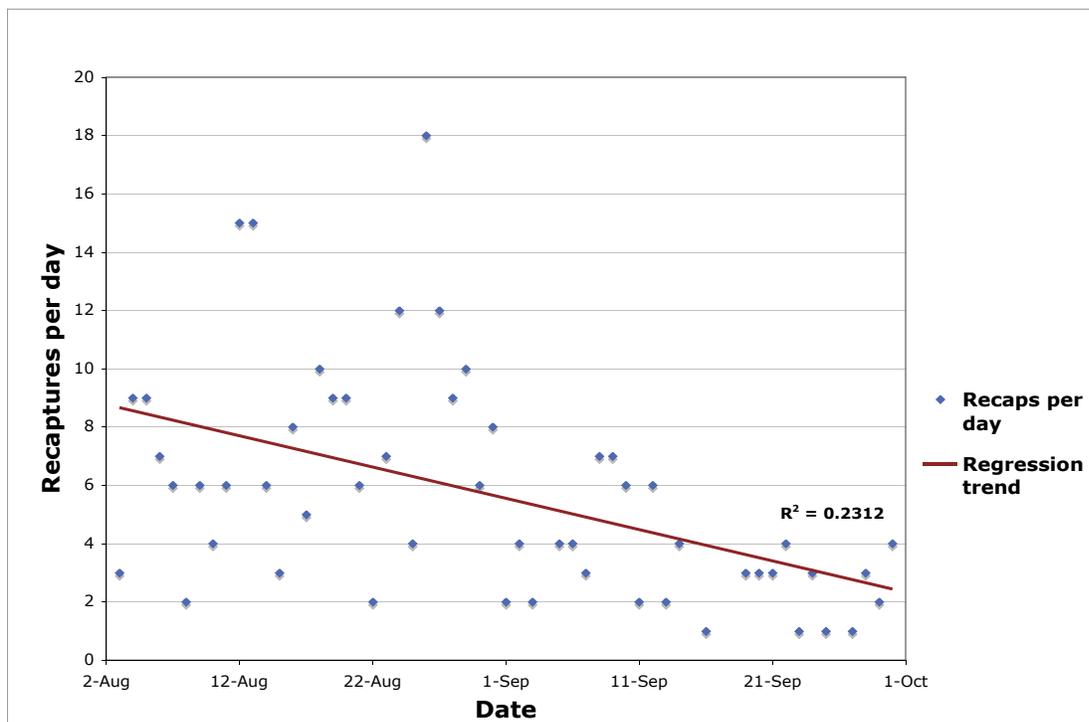
# Recaptures:

Out of the 1866 birds banded this season, 173 were recaptured at some point. An additional 38 birds banded in previous years were also recaptured, for a total of 212 individuals this season. Some were caught more than once for a grand total of 303 birds processed, not including same-day recaptures (which are released at the net).

## List of most commonly recaptured species:

Species	Total recaptured	Individuals recaptured	Number banded	Percentage recaptured
Common Yellowthroat	62	39	113	35
Song Sparrow	50	28	101	28
Swainson's Thrush	39	28	142	20
Warbling Vireo	21	17	162	10
Lincoln's Sparrow	19	13	242	5
American Redstart	16	13	55	24
Yellow Warbler	13	9	104	9
Orange-crowned Warbler	12	8	126	6
Black-capped Chickadee	10	7	21	33
Northern Waterthrush	10	7	42	16

## Number of recaptures over the season:



## **Recaps by the numbers:**

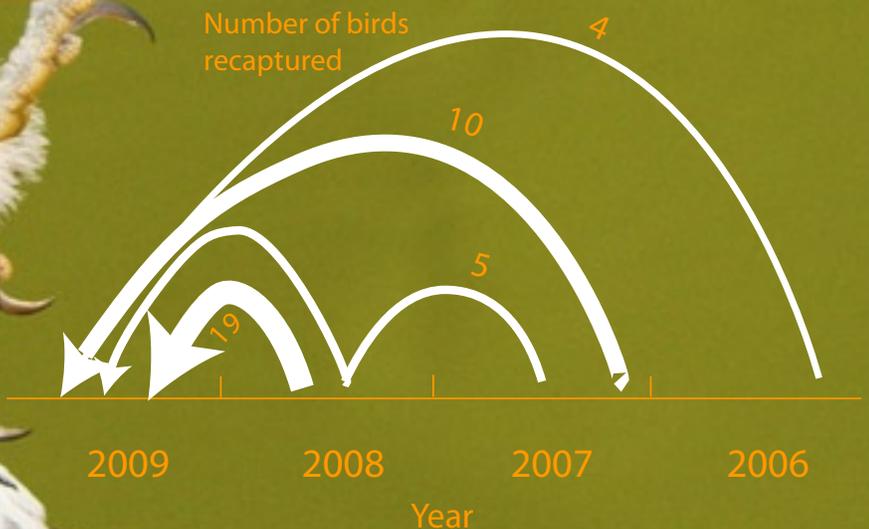
- 9** Percent of banded birds that get recaptured
- 26** Percent of recaptured birds that will be caught multiple times
- 7** Average # days between banding and first recapture (range 1-40)
- 16** Average # days between banding and last recapture, for birds recapped more than once (range 2-45)
- 20** Percent chance a bird will be recaptured in same net in which it was banded
- 7** Number of inter-annual recaptures (birds banded in previous years) in 2007
- 26** Number of inter-annual recaptures in 2008
- 38** Number of inter-annual recaptures in 2009
- 6.5** Average # days young birds roamed free after banding, before being recaptured (N=137)
- 8** Average # days adults roamed free after banding (N=35)
- 6** Average # days adult females roamed free after banding (N=19)
- 12** Average # days adult males roamed free after banding (N=8)





## Interannual Recaps:

The following chart outlines the chronology of occurrence for the 38 birds (14 species) that were recaptured this season but banded in previous years. For example, five were banded in 2007, then recaptured in 2008 and again in 2009:



# Highlight sightings:

Even in our fourth year we continued to discover new birds and interesting wildlife sightings at the station. Rare and unusual sightings help maintain the interest of volunteers, staff, and outside observers. **Below is a table showing some of our best sightings of the year.**

(new to the station in *italics*)

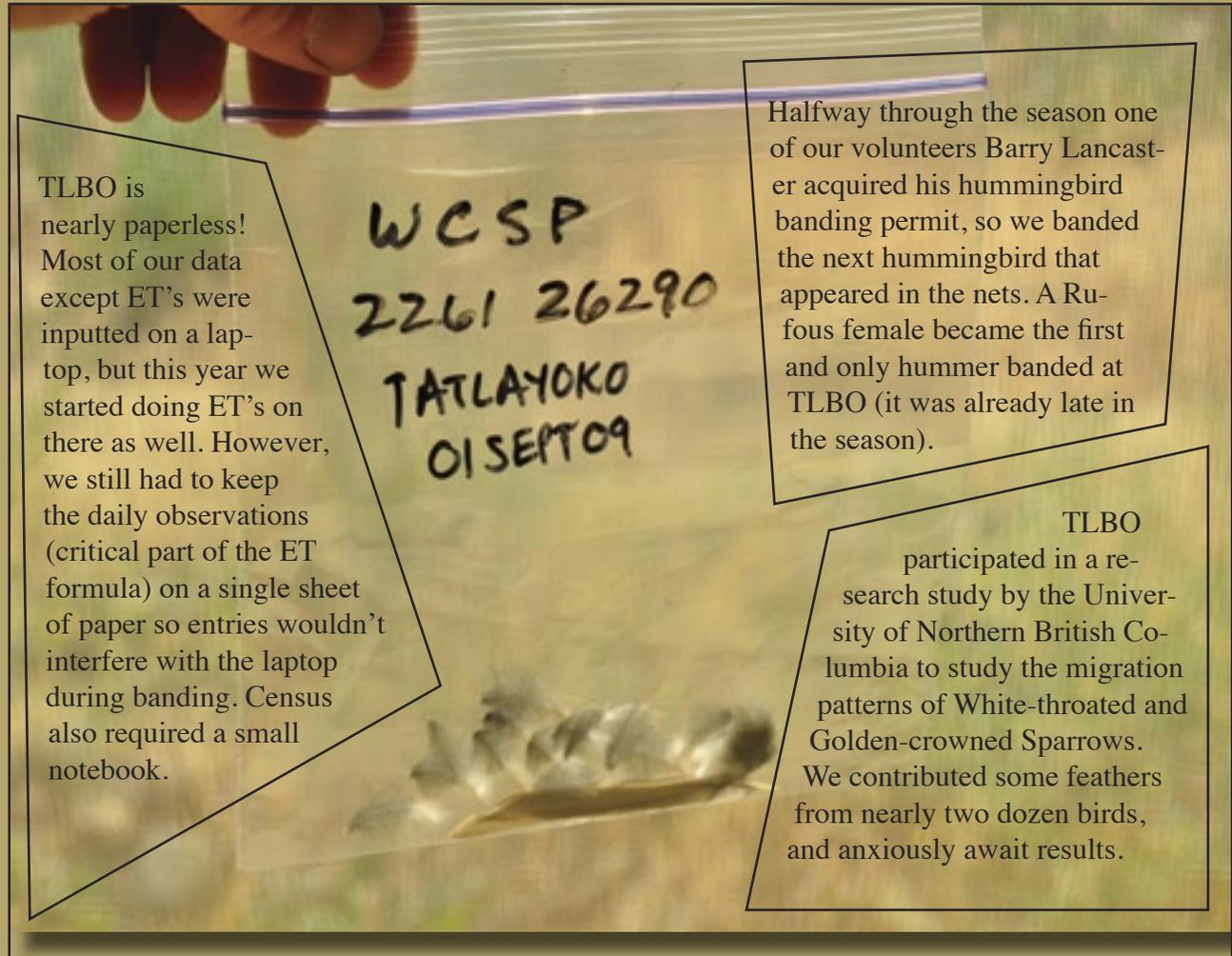
Species	Banded?	Details
<i>Greater White-fronted Goose</i>	no	Single bird observed on 28 September
<i>Greater Scaup</i>	no	1 female sighted in lagoon on 26 September
Sandhill Crane	no	1 bird heard over 15-16 August
Lesser Yellowlegs	no	1 bird on census, 6 September
<i>California Gull</i>	no	8 flew over on 22 August
Black Swift	no	Observed on 11 and 20 August
<i>Calliope Hummingbird</i>	no	3 captured: 6, 8 and 14 <sup>th</sup> August; one censused 26 August
Rufous Hummingbird	<b>yes</b>	One female banded on 9 September
Eastern Kingbird	no	Two birds sighted on 3 September then a single present sporadically until 17 <sup>th</sup>
Tennessee Warbler	no	One young male banded on 25 August
American Redstart	no	Band # 2420-35254 (fem) and -35255 (male); juvenile siblings captured 2008 in same net, recaptured 2009 (5 and 24 Aug)
<i>Veery</i>	<b>yes</b>	One young bird banded on 12 August
Lapland Longspur	no	One observed on 20 September
White-winged Crossbill	<b>yes</b>	Pair banded on 23 August

## INJURIES AND FATALITIES

An unfortunate side effect of our banding activities is a potential impact upon the birds we are studying. We are always trying to minimize the number of injuries and mortality we subject upon captured birds, and our goal is to have zero incidents. Previous to 2009 we maintained a rate of around 0.6% mortality relative to all the birds we handled, which is over a dozen fatalities per year. This season, only three birds died out of 2169 brought back to the banding station, for a mortality rate of 0.1%. Our new staff scheduling system (ensuring we have at least one experienced volunteer) coupled with warm morning temperatures evidently helped to keep mishaps to a minimum. It is also possible that after three years we have our systems dialed. Still, we tallied seventeen instances of injury and will continue to try and minimize future problems.

# NEW FOR 2009

The following changes were adopted during the 2009 season:



TLBO is nearly paperless! Most of our data except ET's were inputted on a laptop, but this year we started doing ET's on there as well. However, we still had to keep the daily observations (critical part of the ET formula) on a single sheet of paper so entries wouldn't interfere with the laptop during banding. Census also required a small notebook.

Halfway through the season one of our volunteers Barry Lancaster acquired his hummingbird banding permit, so we banded the next hummingbird that appeared in the nets. A Rufous female became the first and only hummer banded at TLBO (it was already late in the season).

TLBO participated in a research study by the University of Northern British Columbia to study the migration patterns of White-throated and Golden-crowned Sparrows. We contributed some feathers from nearly two dozen birds, and anxiously await results.



## The Blog!

Our highly successful and interactive blog, [www.tatlayokobirds.wordpress.com](http://www.tatlayokobirds.wordpress.com) received nearly 100 hits per day. We kept it updated daily with interesting anecdotes, daily totals, photos, and of course, the infamous bird ID quizzes. Ryan Gill of Revelstoke, BC was awarded a TLBO t-shirt for answering the most questions correctly. Congratulations Ryan!



# TLBO SPECIES LIST

Species	2009		2006/07/08	
	Average Daily ET	Total Banded	Average Daily ET	Average Banded per year
Common Loon	<1	0	<1	0
Pied-billed Grebe	<1	0	<1	0
Horned Grebe	<1	0	<1	0
Red-necked Grebe	<1	0	<1	0
Great Blue Heron	<1	0	<1	0
American Bittern	0	0	<1	0
Canada Goose	15	0	15	0
American Wigeon	5	0	4	0
Mallard	7	0	7	0
Blue-winged Teal	<1	0	<1	0
Cinnamon Teal	0	0	<1	0
Northern Shoveler	<1	0	<1	0
Northern Pintail	<1	0	<1	0
Gadwall	<1	0	<1	0
American Green-winged Teal	<1	0	<1	0
Ring-necked Duck	<1	0	2	0
Greater Scaup	<1	0	<1	0
Lesser Scaup	0	0	<1	0
Wood Duck	0	0	<1	0
Bufflehead	<1	0	<1	0
Common Goldeneye	0	0	<1	0
Barrow's Goldeneye	<1	0	<1	0
Hooded Merganser	<1	0	<1	0
Common Merganser	1	0	1	0
Red-breasted Merganser	0	0	<1	0
Osprey	1	0	1	0
Bald Eagle	<1	0	<1	0
Golden Eagle	0	0	<1	0
Northern Harrier	<1	0	<1	0
Cooper's Hawk	<1	0	<1	0
Sharp-shinned Hawk	1	2	<1	5
Northern Goshawk	<1	0	<1	0
Red-tailed Hawk	<1	0	<1	0
American Kestrel	1	0	1	0
Merlin	<1	0	<1	0
Peregrine Falcon	0	0	<1	0
Gyr Falcon	0	0	<1	0
Ruffed Grouse	2	0	3	0
Dusky Grouse	<1	0	<1	0
Sora	<1	0	<1	0
Virginia Rail	<1	0	<1	0
American Coot	0	0	<1	0
Killdeer	<1	0	<1	0
Sandhill Crane	<1	0	<1	0

Species	2009		2006/07/08	
	Average Daily ET	Total Banded	Average Daily ET	Average Banded per year
Greater Yellowlegs	<1	0	<1	0
Lesser Yellowlegs	<1	0	<1	0
Solitary Sandpiper	<1	0	<1	0
Least Sandpiper	0	0	<1	0
Spotted Sandpiper	1	0	1	0
Wilson's Snipe	<1	0	<1	0
Wilson's Phalarope	0	0	<1	0
Red-necked Phalarope	0	0	<1	0
Bonaparte's Gull	<1	0	<1	0
Mew Gull	0	0	<1	0
Herring Gull	<1	0	<1	0
Ring-billed Gull	<1	0	<1	0
California Gull	<1	0	0	0
Common Tern	0	0	<1	0
Mourning Dove	<1	0	<1	0
Great Horned Owl	<1	0	<1	0
Barred Owl	0	0	<1	0
Northern Saw-whet Owl	0	0	<1	0
Common Nighthawk	0	0	<1	0
Black Swift	<1	0	<1	0
Rufous Hummingbird	<1	0	<1	0
Calliope Hummingbird	1	0	0	0
Belted Kingfisher	1	0	1	0
Red-naped Sapsucker	1	4	<1	3
Red-breasted Sapsucker	0	0	<1	0
Downy Woodpecker	1	6	2	5
Hairy Woodpecker	1	3	2	8
Black-backed Woodpecker	<1	0	<1	0
Pileated Woodpecker	1	0	<1	0
Red-shafted Flicker	2	1	4	5
Olive-sided Flycatcher	<1	1	<1	1
Western Wood-pewee	<1	4	<1	2
Alder Flycatcher	2	31	<1	2
Willow Flycatcher	<1	18	<1	4
Unknown Willow/Alder	<1	5	<1	13
Least Flycatcher	<1	2	<1	5
Hammond's Flycatcher	<1	21	<1	6
Dusky Flycatcher	1	20	1	10
Pacific-slope Flycatcher	<1	7	<1	3
Northern Shrike	0	0	<1	0
Cassin's Vireo	<1	3	<1	3
Warbling Vireo	6	162	6	123
Red-eyed Vireo	1	16	1	9
Gray Jay	<1	0	<1	0

Species	2009		2006/07/08	
	Average Daily ET	Total Banded	Average Daily ET	Average Banded per year
Steller's Jay	<1	0	<1	1
Clark's Nutcracker	3	0	4	0
American Crow	19	0	22	0
Common Raven	1	0	3	0
Horned Lark	7	0	<1	0
Tree Swallow	<1	0	<1	0
Violet-green Swallow	2	0	2	0
North. Rough-winged Swallow	<1	0	<1	0
Bank Swallow	<1	0	<1	0
Cliff Swallow	<1	0	<1	0
Barn Swallow	<1	0	1	0
Black-capped Chickadee	8	21	12	35
Mountain Chickadee	2	14	2	1
Chestnut-backed Chickadee	0	0	<1	0
Boreal Chickadee	0	0	<1	2
Red-breasted Nuthatch	4	29	3	3
Brown Creeper	<1	0	<1	3
Winter Wren	<1	1	<1	2
Marsh Wren	<1	2	<1	1
Golden-crowned Kinglet	1	12	1	6
Ruby-crowned Kinglet	5	123	9	119
Mountain Bluebird	<1	0	<1	0
Townsend's Solitaire	<1	0	<1	0
Swainson's Thrush	5	141	5	73
Hermit Thrush	1	32	<1	10
Veery	<1	1	0	0
American Robin	10	7	17	16
Varied Thrush	<1	3	<1	2
American Pipit	4	0	5	0
Gray Catbird	0	0	<1	0
Cedar Waxwing	17	54	12	5
Bohemian Waxwing	<1	0	<1	0
European Starling	2	0	2	0
Tennessee Warbler	<1	1	<1	1
Orange-crowned Warbler	4	126	5	124
Nashville Warbler	0	0	<1	2
Yellow Warbler	5	104	4	73
Yellow-rumped Warbler	23	44	40	175
Townsend's Warbler	<1	1	<1	6
Blackpoll Warbler	0	0	<1	1
Chestnut-sided Warbler	0	0	<1	0
Magnolia Warbler	0	0	<1	1
American Redstart	3	55	4	49
Black and White Warbler	0	0	<1	0

Species	2009		2006/07/08	
	Average Daily ET	Total Banded	Average Daily ET	Average Banded per year
Northern Waterthrush	2	42	3	46
MacGillivray's Warbler	1	35	2	45
Common Yellowthroat	6	113	9	129
Wilson's Warbler	2	92	2	65
Western Tanager	1	5	1	6
Lapland Longspur	<1	0	<1	0
Spotted Towhee	<1	2	<1	1
Chipping Sparrow	3	6	4	1
Vesper Sparrow	<1	1	<1	3
Savannah Sparrow	6	35	5	15
Fox Sparrow	<1	6	<1	5
Song Sparrow	7	101	12	148
Lincoln's Sparrow	8	241	11	228
Swamp Sparrow	0	0	<1	1
White-throated Sparrow	0	0	<1	1
White-crowned Sparrow	2	23	2	26
Golden-crowned Sparrow	<1	4	<1	2
Oregon Junco	9	32	6	46
Bullock's Oriole	<1	0	<1	0
Western Meadowlark	<1	0	1	0
Yellow-headed Blackbird	0	0	<1	0
Red-winged Blackbird	2	1	3	2
Brewer's Blackbird	<1	0	3	0
Rusty Blackbird	0	0	<1	0
Brown-headed Cowbird	<1	0	<1	0
Pine Grosbeak	<1	0	<1	0
Lazuli Bunting	<1	3	<1	6
Purple Finch	1	5	<1	3
Cassin's Finch	0	0	<1	0
Red Crossbill	5	2	3	0
White-winged Crossbill	1	2	3	0
Pine Siskin	42	37	21	8
Evening Grosbeak	<1	0	2	0

