

Teslin Lake Bird Banding & Migration Monitoring Station Final Report 2007



Prepared for:

Yukon Environment, Ducks Unlimited Canada, & Yukon Bird Club

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The 2007 operation of the Teslin Lake Bird Banding Station was made possible due to financial contributions from the following organizations.



Cover Photos:

Upper Row (L to R): White-crowned Sparrow, White-throated Sparrow, Slate-colored Junco

Middle Row (L to R): Sharp-shinned Hawk, Yellow Warbler, Blackpoll Warbler

Bottom Row (L to R): Wilson's Warbler, Dusky Flycatcher, Spotted Sandpiper

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1.0 Introduction

The Teslin Lake Bird Banding Station operated during the spring migration season in 2007. The station completed its third year of operation thanks to financial help from several government and non-government agencies including Environment Yukon, Teslin Renewable Resources Council, Yukon Fish and Wildlife Management Board (Fish & Wildlife Enhancement Trust Fund), Yukon Bird Club and Ducks Unlimited Canada.

The goals of the Teslin Lake Bird Banding Station were to:

- Continue to gather baseline information on birds and bird migration in the Teslin area including specific studies such as feather collecting for stable isotope analysis and color banding.
- Provide a setting for the public including school groups to learn about birds and bird migration.
- Provide employment and training opportunities for students and volunteers.
- Provide a unique tourist attraction for the community of Teslin.

The banding station serves as a method of carrying out research on birds which is shared through an international database. This is due to the possibility of a banded bird being recaptured across international borders. Many of the birds banded at Teslin Lake are highly migratory spending the winter months as far south as Central and South America. The station also plays a role in education as a place where the public, volunteers and students can take part in a unique, community based research project.

2.0 Methods

Methods of data collection and mist netting were based upon those of the Canadian Migration Monitoring Network (CMMN).

2.1 Study Site

During the 2005 season, the banding station was located on the shoreline on Nisutlin Bay; however, issues associated with the site as a suitable study site led to a new site being used in 2006 and 2007. The new site was located on 10 Mile point approximately 10 km northwest of the community of Teslin. The banding station was located in the vegetated riparian zone between Teslin Lake and the Teslin Government Campground.

The vegetation within the site is a mixture featuring a transition from bare gravel lakeshore to shrubs and larger deciduous trees. Also within the site is a small wetland area connected to Teslin Lake which has greatly fluctuating water levels. The area is dominated by willow (*Salix* sp.) and alder (*Alnus* sp.) with some mature white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*) and balsam poplar (*P. balsamifera*) scattered throughout.

2.2 General Methods

Mist nets were used for capturing birds during the station's operation with a total of twenty nets being utilized. Mist nets were checked for birds every 15 - 30 minutes (depending on bird activity) and birds caught were placed in holding bags and returned to the banding lab. Birds were banded and the following data was collected (if possible):

- species
- fat score (5 pt scale)
- molt information
- band number
- status
- additional comments
- age and criteria used
- date
- tail length, wing formula, bill size (flycatchers only)
- sex and criteria used
- time
- un-flattened wing chord
- location banded
- bander's initials
- trap used
- weight
- net captured in

All age and sex determinations were made according to the Identification guide to North American Birds (Pyle 1997). For measuring the wing length a wing ruler was used with 0.5 mm denominations. Some anatomical measures such as tarsus, and cap length were measured using DiaMax calipers.

Birds were processed as quickly as possible and were released if showing signs of stress. Mist nets were closed upon the onset of inclement weather or when too many birds were captured to allow timely processing. The overall number of net hours per day was variable during both the spring and fall seasons due to inconsistent weather conditions and the amount of manpower available to assist in banding. All birds captured that were previously banded were also processed. For these birds, limited information was gathered to facilitate a faster release.

The weather conditions were recorded twice a day, once at the beginning of the day and once at the end of the day. Information collected at these times included temperature, wind direction and strength, cloud coverage, visibility and precipitation. For every day of operation, an estimated daily total was calculated for every species encountered. This calculation was conducted using the following formula (Estimated Total (ET) = # banded + # recaptured + # observed/heard).

3.0 Results

The station was operated¹ for 25 days from April 22nd to June 3rd. Over this time period, 1,267 birds of 43 species were banded (Table 1, Figure 1) and 91 species were observed (Table 3). A total of 1,969 net hours were tabulated resulting in 64.10 birds banded / 100 net hours. The all time total number of birds banded at Teslin Lake to date is in excess of 3,300 birds (Appendix 1).

Table 1. Top 10 banded species by age ratio during the spring of 2007.

Species	Number Banded	% Second Year (SY)	% After Second Year (ASY)	% After Hatch Year (AHY)
"Gambel's" White-crowned Sparrow	579	48	27	24
"Slate-colored" Dark-eyed Junco	135	53	32	15
American-tree Sparrow	72	51	31	18
Wilson's Warbler	63	52	40	8
Swainson's Thrush	48	29	52	19
Orange-crowned Warbler	47	40	51	9
Lincoln's Sparrow	39	18	28	54
Yellow Warbler	37	73	22	5
Yellow-rumped "Myrtle" Warbler	29	24	52	24
Ruby-crowned Kinglet	27	33	33	33

¹ Days of operation are defined as days where mist netting was conducted. In addition to these days, observations were taken on days where the weather did not allowing mist netting.

Table 2. Birds banded during the spring of 2007.

Common Name	Latin Name	AOU Code	Spring Total	Common Name	Latin Name	AOU Code	Spring Total
Alder Flycatcher	<i>Empidonax alnorum</i>	ALFL	10	Tennessee Warbler	<i>Vermivora peregrina</i>	TEWA	6
American Redstart	<i>Setophaga ruticilla</i>	AMRE	11	Unidentified Dark-eyed Junco	<i>Junco hyemalis</i>	UDEJ	9
American Robin	<i>Turdus migratorius</i>	AMRO	17	Varied Thrush	<i>Ixoreus naevius</i>	VATH	2
American Tree Sparrow	<i>Spizella arborea</i>	ATSP	72	Western Wood-pewee	<i>Contopus sordidulus</i>	WEWP	2
Black-capped Chickadee	<i>Poecile atricapillus</i>	BCCH	2	Wilson's Warbler	<i>Wilsonia pusilla</i>	WIWA	63
Blackpoll Warbler	<i>Dendroica striata</i>	BLPW	10	Yellow Warbler	<i>Dendroica petechia</i>	YWAR	37
Boreal Chickadee	<i>Poecile hudsonicus</i>	BOCH	2	Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	YBFL	1
Chipping Sparrow	<i>Spizella passerina</i>	CHSP	6	Yellow-bellied Sapsucker	<i>Sphyrapicus varia</i>	YBSA	2
Common Redpoll	<i>Carduelis flammea</i>	CORE	1	Yellow-shafted Northern Flicker	<i>Colaptes auratus</i>	YSFL	1
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE	11	TOTAL			1267
Dusky Flycatcher	<i>Empidonax oberholseri</i>	DUFL	2				
Fox Sparrow	<i>Passerella iliaca</i>	FOSP	17				
Gambel's White-crowned Sparrow	<i>Zonotrichia leucophrys gambelli</i>	GWCS	579				
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	GCSP	16				
Gray Jay	<i>Perisoreus canadensis</i>	GRAJ	1				
Gray-cheeked Thrush	<i>Catharus minimus</i>	GCTH	5				
Hammond's Flycatcher	<i>Empidonax hammondi</i>	HAFL	11				
Hoary Redpoll	<i>Carduelis hoernemanni</i>	HORE	1				
Least Flycatcher	<i>Empidonax minimus</i>	LEFL	3				
Lincoln's Sparrow	<i>Melospiza lincolni</i>	LISP	39				
Yellow-rumped "Myrtle" Warbler	<i>Dendroica coronata</i>	MYWA	29				
Northern Waterthrush	<i>Seiurus noveboracensis</i>	NOWA	11				
Orange-crowned Warbler	<i>Vermivora celata</i>	OCWA	47				
Purple Finch	<i>Carpodacus purpureus</i>	PUFI	6				
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	RWBL	1				
Ruby-crowned Kinglet	<i>Regulus calendula</i>	RCKI	27				
Rusty Blackbird	<i>Euphagus carolinus</i>	RUBL	2				
Savannah Sparrow	<i>Passercula sandwichensis</i>	SAVS	24				
Say's Phoebe	<i>Sayornis saya</i>	SAPH	2				
Sharp-shinned Hawk	<i>Accipiter striatus</i>	SSHA	2				
"Slate-colored" Dark-eyed Junco	<i>Junco hyemalis</i>	SCJU	135				
Spotted Sandpiper	<i>Actitis macularius</i>	SPSA	1				
Swainson's Thrush	<i>Catharus ustulatus</i>	SWTH	48				

3.1 Band Returns

During the previous three years since the station began operation, there have been no foreign¹ band recoveries. However; there have been a number of band returns² during the 2007 season which are summarized in Table 4.

Table 4. Banded birds recovered during the spring and fall of 2007.

Species	2005	2006	TOTAL
American Robin		1	1
Black-capped Chickadee		1	1
“Gambel’s” White-crowned Sparrow		1	1
Northern Waterthrush		3	3
Dark-eyed "Slate-colored" Junco		2	2
Yellow Warbler	1	2	3
TOTAL INDIVIDUALS	1	10	11

3.2 Notable Captures

As is the case in all years, the vast majority of birds banded at Teslin Lake in 2007 are species which are common and widespread north and west of the southern Yukon. The Teslin Lake study site appears to have low numbers of breeding birds, possibly due to the seasonal flooding which occurs due to rapid spring snowmelt. The station captures a very diverse grouping of bird species; however, it appears as though the sparrows and flycatchers are especially represented during the spring season. The section below outlines notable captures from the 2007 season.

Dusky Flycatcher

- 2 individuals banded (21 May, 27 May)

Hoary Redpoll

- 3 individuals banded (7 May)

White-throated Sparrow

- 1 individual banded (26 May)
- Observed on 2 days (2 on 26 May, 1 on 27 May)

3.3 Additional Studies

In an attempt to maximize the data collection component of the birds captured, a number of “add-on” studies were completed in 2007.

3.3.1 Rusty Blackbirds

As part of an ongoing project in co-operation with Pam Sinclair (CWS-Whitehorse) and the Albert Creej Bird Banding Station, all Rusty Blackbirds captured with fitted with color bands (light blue) in conjunction with the regular numbered leg band. Additionally, a feather was collected from each Rusty

¹ This term is given to a bird which was banded at a site other than Albert Creek.

² This term is given to a bird which was banded at Albert Creek and returned to the site in the year(s) following being initially banded.

Blackbird captured. Feather samples were to be analyzed for stable isotopes in an effort to make linkages between breeding and wintering grounds used by this species. The rationale for color banding individuals is to hopefully increase resightings of banded individuals which will provide banding location information without the bird being captured. During the spring of 2007, a total of 2 Rusty Blackbirds (1 ASY-F, 1 ASY-M), 2 ASY-F, 5 ASY-M, 1 SY-F, 1 SY-M); all of which were fitted with light green color bands. During the fall season, a total of 31 individuals (9 AHY-F, 10 AHY-M, 7 HY-F, 4 HY-M, 1 U-F) were captured and color banded.



Figure 13. ASY-M Rusty Blackbirds captured and color banded during the spring of 2007.

3.3.2 Feather Collection

As part of a Canada wide project (CMMN, Canadian Migration Monitoring Network) feather samples were collected from a number of bird species to be analyzed for stable isotopes. The goal of this project is to determine the “catchment areas” of migration monitoring stations, thus determine the origin of the birds captured at individual stations.

3.4 Visitors and Volunteers

Table 5 shows the number of hours spent at the banding station by visitors, volunteers and paid workers. Visitors were defined as those people which visited the station (often for a short time) and did not take part in activities at the station. Volunteers were those people which took part in the operation of the station (often extensively) without being financially compensated. Paid hours were spent by individuals being paid to be at the station. This category includes the Master Bander (Ben Schonewille) and Assistant Banders (Jukka Jantunen, Ted Murphy-Kelly).

Table 5 Hours spent at the banding station visitors, volunteers and paid workers¹.

	Visitor Hours	Volunteer Hours	Paid Hours
Spring	113	75	187

¹ Paid hours include only those hours spent at the banding station and do not include the very extensive amount of time spent doing office duties such as data entry, analysis and reporting.

4.0 Photos

The following photos illustrate the top 15 species banded during the 2007 season (in order).



“Gambel’s” White-crowned Sparrow



Slate-colored Junco



American-tree Sparrow



Wilson's Warbler



Swainson's Thrush



Orange-crowned Warbler



Lincoln's Sparrow



Yellow Warbler



Yellow-rumped “Myrtle” Warbler

*Ruby-crowned Kinglet**Savannah Sparrow**American Robin**Fox Sparrow**Golden-crowned Sparrow**Common Yellowthroat*

5.0 Discussion

The results from this season's operation have continued to add to numerous aspects of bird biology in the Yukon, including: species distribution, migration timing and local productivity.

While the total number of birds banded at Teslin Lake this spring may not be impressive in comparison to other banding stations, it should be made clear that the station was not operated daily during the spring migration season. Due to financial and personnel limitations the station could not be operated daily. This has been the case since the station began operation during 2005; despite this the station has proven itself as a worthwhile location for monitoring bird migration. In comparison to the Yukon's other banding station (Albert Creek), the Teslin Lake station is very different. Albert Creek has a high number of local breeding birds as well as an expanse of habitat which is likely used by migrants during migration stopover. Teslin Lake experiences a very different pattern in which weather patterns often result in very high numbers of migrants at the study site. Such periods can end as quickly as they begin as birds continue on in migration. While this may not result in very numbers of birds banded, it truly can monitor bird migration.

In regards to visitors and volunteers, the station has been proven to be highly valuable in terms of not only collecting data, but also for allowing members of the public to visit and volunteer. This year saw record numbers of volunteers participating at the station, which is essential for increasing the productivity of the station. The station hosted two school groups this year including a high school biology class from FH Collins in Whitehorse.

6.0 Conclusion and Recommendations

For 2008, it is hoped that financial support can be secured to operate the station at full capacity (ie-daily coverage) during either the spring or fall migration seasons. Additionally, all efforts will be made to include members of the public in the station's operation and attract as many school groups as possible to the station.

7.0 Acknowledgements

The author would like to thank all of the volunteers who visited this year and helped out with day to day operations at the station. Your actions do not go unnoticed and without you, this station wouldn't have been as productive or such a fun place to work at. Also, the long list of funders to this project deserve a big thank you for continuing to support this project and allowing us to begin to strive towards maximizing the monitoring taking place. To the staff of Environment Yukon, particularly Cameron Eckert, thank you for providing logistical help and sharing a wealth of bird knowledge. Also thank you to the staff of the Canadian Wildlife Service particularly Pam Sinclair. To Jukka Jantunen, thank you for your assistance at the station.. The photographs included in this report were provided by Ben Schonewille, Ted Murphy-Kelly, Julie Bauer and Jukka Jantunen. In closing, the authors would like to thank CBC Radio, 96.1 The Rush and Yukon: North of Ordinary (Air North's inflight magazine) for assisting to advertise the station to the public.

APPENDIX 1 –TESLIN LAKE ALL TIME BANDING TOTALS

SPECIES	2005		2006		2007		ALL TIME TOTAL
	Spring	Fall	Spring	Fall	Spring	Fall	
Alder Flycatcher	17	9	38	18	10	5	97
American Pipit			2				2
American Redstart			6	4	1		10
American Robin	27		35	5	17		84
American Tree Sparrow	220		13	1	72		306
Belted Kingfisher				8			8
Black-capped Chickadee		3	4	3	2		12
Blackpoll Warbler	3	2	21	4	10		40
Bohemian Waxwing			40				40
Boreal Chickadee	2		3		2		5
Brewer's Sparrow				1			1
Brown Headed Cowbird	1						1
Chipping Sparrow	28		3		6		31
Common Redpoll			107		1		107
Common Yellowthroat	1		17	4	11	6	39
Dusky Flycatcher	2				2		2
Eastern Phoebe			1				1
Fox Sparrow	106		3		17		109
Golden Crowned Kinglet		1					1
Golden Crowned Sparrow	1				16		1
Gray Cheeked Thrush	4	2	2		5		13
Gray Jay	5				1		5
Hairy Woodpecker	2						2
Hammond's Flycatcher	7		5		11		12
Hermit Thrush	1		1				2
Hoary Redpoll					3		0
Horned Lark			3				3
Hybrid Chickadee			1				1
Least Flycatcher	3		4		3		7
Lincoln's Sparrow	9	1	6	1	39		56
MacGillivray's Warbler	1		1				2
Magnolia Warbler	1						1
Myrtle Warbler	60	3	63	5	29		160
Northern Waterthrush	4	1	14	10	11		40
Olive-sided Flycatcher			11				11
Orange Crowned Warbler	16	6	25	1	47		95
Pine Grosbeak			2				2
Pine Siskin	28		1				29
Purple Finch	27		3		6		30
Red Crossbill	3						3
Red-winged Blackbird			1		1		1
Ruby Crowned Kinglet	25	7	51	3	27		113
Rusty Blackbird	19		3		2	1	22
Savannah Sparrow	11	2	2	2	24		41
Say's Phoebe			2		2		2
Sharp-shinned Hawk					2		0
Slate-colored Junco	165	12	137	5	135		454
Solitary Sandpiper				2			2
Spotted Sandpiper	1		2		1		3
Swainson's Thrush	99	7	35	10	48		199
Tennessee Warbler	4		4		6		8
Tree Swallow	5						5
Unidentified Junco					9		0
Varied Thrush			1		2		1
Warbling Vireo	13		1	4			18
Western Tanager			1				1
Western Wood Pewee	3		2		2		5
White Crowned Sparrow	86	3	13		579		681
White-throated Sparrow					1		0
White-winged Crossbill			5				5
Wilson's Warbler	116	8	54	5	63		246
Winter Wren	1						1
Yellow Bellied Flycatcher	2	2	1		1		6
Yellow Bellied Sapsucker	2		2		2		4
Yellow Shafted Northern Flicker	1				1		1
Yellow Warbler	10	4	50	19	37	3	123
Total Birds Banded	1142	73	802	115	1267	15	3313
Total Species Banded	43	17	48	21	43	4	66
Total Net Hours	3413		2050		1969		
Birds Banded / 100 Net Hrs	33.46		39.12		64.35		

**Note - In 2005, the station was not located in the current location