FINAL REPORT

WESTERN CANADA COOPERATIVE BANDING PROGRAM
WILLOW LAKE, NORTHWEST TERRITORIES
AUGUST 28, 2015

PERSONNEL

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ABSTRACT

In 2015, the Sahtu Renewable Resources Board (SRRB), the Tulita Renewable Resources Council (TRRC), the Government of the Northwest Territories' Department of Environment and Natural Resources (ENR), and the United States Fish and Wildlife Service (USFWS) collaborated in the 19th year of duck banding at Willow Lake, (65° 14' N; 125° 25' W) in the Mackenzie River Valley, Sahtu Settlement Area, NWT. The annual goal is to band 2,000 Mallards (*Anas platyrhynchos*), 1,500 Northern Pintail (*Anas acuta*), and any other incidental species of ducks (up to 1,000 per species) prior to the opening day of waterfowl hunting in the Northwest Territories (01 September). The USFWS, SRRB, and ENR provided logistical support for the project. A Waterfowl Biologist (USFWS) supervised two contract employees from the village of Tulita, NWT. One was hired by SRRB and the other by TRRC. The crew arrived and departed together via North Wright's Twin Otter on 06 August and 29 August, respectively. A maximum of 27 swim-in style duck traps with restricted funnels and closed trap doors were run for 18 nights and 462 trap-nights. Trap success was 4.1 ducks per trap night. Both Standard leg bands (Call 1-800-327-BAND) and the combination web address and 1-800 style bands were placed on a total of 1,898 ducks. Species totals and compositions are: Northern Pintail (1,151, 61%), Mallard (531, 28%), American Green-winged Teal (*Anas crecca*; 129, 7%), American Wigeon (*Anas Americana*; 82, 4%), Blue-winged Teal (*Anas discors*; 4, <1%), and Mallard cross Northern Pintail Hybrid (1). The number of ducks caught in 2015 was the 4th best (of 19) and 37% above the long-term average (1,383) at the Willow Lake Banding Site. We experienced average to above-average water levels, so the North end of Willow Lake was trappable. Sixty-seven percent (N = 1,275) of total ducks were caught away from the traditional southern point trap location. Approximately 29% of banded ducks (N = 557) were in the Hatch Year (HY) or Local (L) age classes. Of special note, 61 foreign bands (from previous years at Willow Lake or elsewhere) were recaptured and four bands were worn enough to justify replacement.

INTRODUCTION AND BACKGROUND

Willow Lake, residing along the Loche River in the Mackenzie River Valley and Sahtu Settlement area of the Northwest Territories has a long history of hunting, including waterfowl hunting. So much so, that some of the "Willow Lake People" had settled on the north end of Willow Lake hundreds of years ago because of the area's abundance of game and fish. The navigable waters enabled them to reach other settlements such as Tulita and beyond. In those days, Tulita was the natural rendezvous location for the Willow Lake, Mackenzie River, and Mountain People. The settlement at the north end of Willow Lake is appropriately called "Willow Lake", and cabins still exist. Most of the original cabins are gone, but newer, up-to-date cabins with internet, cell phone boosters, and satellite TV's are rumored to be increasingly common. A church Bern Will Brown built is also no longer standing. Currently, there are no year-round residents at Willow Lake, but many make trips from Tulita in the spring for waterfowl hunting, and in the fall and early winter for trapping, fishing, and hunting.

One of the original and now more increasing draws of the Willow Lake area is its abundance of migratory waterfowl in the spring and fall. In the spring, the Loche River flows into Willow Lake and along with warming shorelines, creates an ideal stopover and staging location for migratory waterfowl along their journey further north. In the fall, the water levels dictate migratory waterfowl usage, mainly because they don't have the hindrance of frozen water further south. In good water years, Willow Lake can also be an important molting, breeding, stopover, and staging area for migratory waterfowl throughout the summer and fall during their journey south.

Since 1995, the United States Fish and Wildlife Service (USFWS) has collaborated with the Tulita Renewable Resources Council (TRRC) and the Government of the Northwest Territories' Department of Environment and Natural Resources (ENR) to trap and band ducks in the vicinity of Willow Lake. The USFWS provides the expertise by running a camp with a Wildlife Biologist, specifically one that has been specially trained in trapping, banding, and identifying waterfowl, while TRRC and Sahtu Renewable Resources Board (SRRB) have been instrumental in the hiring of local Tulita and Norman Wells banding technicians. This partnership has been very beneficial from all sides. Both banding technicians and the crew leader Wildlife Biologists have much to teach each other, including the history, biology, traditions, and ways of all cultures.

The banding project was initially established at Loche Lake, the headwaters of the Loche River, but then moved to the area of Willow Lake in 1996, where it remains base camp for operations. The main initiative to band at this site was that no ducks had ever been banded in this reference area, and the USFWS (including the Pacific Flyway Study Committee) was very interested in the derivation of harvest for ducks using this area. In 2002, the base camp of operations for duck banding moved from the settlement of Willow Lake to the south end of Willow Lake (also the outlet of the Loche River). Reasons for moving the base camp of operations were two parts: 1) the substrate of the lake bed is mostly sand in the south and silt-clay in the north, making setting, maintaining, and gathering ducks and traps easier in the south, and 2) local concerns with the duck banding operations being in the traditional settlement location of Willow Lake. In 2015, we made an effort to trap ducks wherever we found them, and we did not heed traditional trapping sites as our only option. We found that without trapping multiple locations

and limiting our traps to just the south end we would have only banded 623 ducks total. This would have been considered a bust year if we had only trapped the south end.

The annual goal is to band 2,000 Mallards (*Anas platyrhynchos*), 1,500 Northern Pintail (*Anas acuta*), and any other incidental species of ducks (up to 1,000 per species) prior to the opening day of waterfowl hunting in the Northwest Territories (01 September).

Willow Lake lies within the selected lands of the Sahtu Dene and Métis under the terms of the Sahtu and Métis Comprehensive Land Claim Agreement (Dept. of Indian and Northern Affairs Canada, 1993). The SRRB is the main instrument for wildlife management in the Sahtu Land Claim area and supports this project. The Tulita Lands Corporation is responsible for approving terms of access to private lands (Sahtu Dene and Métis) within the Tulita District, including the Willow Lake and Loche River watershed. The land claim gives the TRRC the responsibility for involvement in, and approval of, wildlife research and management projects in and near their community. Therefore, we obtained permission to enter these private lands, and to construct and occupy the project's base camp, from the Tulita Lands Corporation with the support of the TRRC.

Willow Lake duck banding base camp consists of two tent frames converted to sleeping cabins, a frame-style kitchen, an outhouse, and a storage silo. The silo provides storage for large quantities of grain for the following year, miscellaneous trapping and living supplies and tools, and some leftover nonperishable human foods. In 2015, the crew also built a smoker out of birch, spruce, and mud. It makes fantastic smoked Coney with willow and alder wood.

STUDY AREA

Figure 1. Study Area. Willow Lake, Northwest Territories, Canada.

Table 1. Trap sites, GPS locations, dates, and number of traps running per night at location.

		Total Traps Set (closed) By Night (August, 2015)																	
Trapping Site Name	GPS Location	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bay 1	65° 13' 47.64" N, 125° 26' 27.98" W	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4			
River Bay	65° 14' 32.83" N, 125° 21' 34.52" W	2	2	2	3	3	3	5	5	5	5	5	5	5	5	5			
Bidwell	65° 11' 12.09" N, 125° 24' 8.58" W	16	16	16	16	16	16	16	16	16	16	14	12	12	12	12	12	12	12
Willow Lake Camp	65° 14' 47.23" N, 125° 24' 0.23" W		2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4
Y-Spot	65° 14' 6.31" N, 125° 23' 26.72" W		2	2	2	2	2					2	2	2	2	2	2	2	2
Y-Spot West	65° 13' 50.35" N, 125° 23' 55.68" W																4	4	4
Y-Spot South	65° 13' 57.89" N, 125° 23' 38.34" W																4	4	4
	Total Traps Running by Night	20	24	24	25	27	27	27	27	27	27	27	27	27	27	27	26	26	26

NARRATIVE

Wildlife Biologist Steve Olson arrived in Noman Wells on 04 August. After a day and half of gathering gear, discussing bear safety, shopping for food, and purchasing fuel, Olson departed Norman Wells on 06 August for Tulita to pick up Clemente and Yakeleya, the other two crew members, and then travelled to Willow Lake. All travel was achieved via Twin Otter on floats (North Wright Air) because of the large load (we maxed all other weight with bags of grain to be used in 2016). The first day at camp was spent unloading gear, going through inventory in the storage silo, pre-baiting, and trap site manipulation (cutting reeds to open the feeding area) at the traditional southern trap location (which we called Bidwell). The first five traps were placed (with funnels and doors wide open) at Bidwell on 07 August and four experimental traps were placed in two locations along the northern bays (Bay 1 and River Bay) where the majority of ducks were congregating. Appreciable numbers (>1,000) of ducks were not seen or counted until about mid-month. By 10 August, we had closed (restricted funnels and closed doors) 20 total traps (16 at Bidwell site). Despite all our efforts to get ducks feeding on barley, this took much longer than expected, most likely due to low area numbers. Our first ducks were captured on 12 August, and we were then running 24 traps per night among five locations (one traditional southern and four different bays in the north).

By 15 August we were running 27 total traps per night among five sites and had even constructed and erected a cloverleaf-style trap at River Bay. Ducks were now much more common (about 2,000 in Willow Lake vicinity) and fully attracted to our baiting sites. Our two most productive days were 17 and 18 of August when we banded 214 and 187 ducks, respectively (Table 2).

On 19 August, we discovered our first signs of mink predation at the traditional southern site and set traps to catch the problematic mink on 20 August. We ended up catching two mink, but this was not enough. We believed the continued killings were the work of 5 mink, given the amount of tracks, trails, and their living quarters which we found. This was not only a disappointment, but an obvious duck deterrent at our most productive site so far (the southern site), which we had 16 of our 27 traps located. It was then that we moved 4 traps from Bidwell site to the north, leaving 12. Ducks not only obviously died because of the mink (Table 5), but were also noticeably no longer present at the southern location, and generally remained away until the very last day trapping (28 August), when we witnessed incredible numbers and flocks of migrating waterfowl (ducks, geese, and swans) following a large northwestern storm front.

Despite the mink issues, we continued to explore and trap the north sites with variable but reliable success. We were able to capitalize on the higher-than-average water conditions and trap many sites deep into the heart of bays. As the water level slowly receded throughout the month, we were finally forced to move our two most productive northern sites (25 August) because they had turned into literal mud wallows. These we moved to the delta (called Y-Spot) created by the Loche River inflow, with only 3 days left. When many would have just shut down 9 traps, we relocated them completely and banded an extra 70 ducks. These spots (Y-Spot West and Y-Spot South) would have only increased in captures if we had a few extra days.

We received a re-supply via another Twin Otter (North Wright Air) load of food, grain, and fuel on 17 August, and were picked up with a Pilatus Porter (North Wright Air) the morning of 29 August. Clemente and Yakeleya were dropped off in Tulita, and Olson continued on to Norman Wells. Olson then flew out and home via commercial on 31 August.

METHODS

Duck trapping was accomplished using newer and very old (most >15 years old) welded wire (1" X 2" size). Wire was cut into panels and constructed into foldable box-style funnel traps (see Benning II duck trap) using hog rings and zip ties. These traps had already been built and stored outside at the camp site from previous years. Upon arrival, we found that Willow Lake had ample water, and consequently had to cut emergent vegetation to open feeding areas we were creating. We used scythes to clear vegetation, and then unloaded a few hundred pounds of barley, marking heavy baited sites with willow sticks or fiberglass poles. These sites were checked daily, and feeding area sizes were increased as needed to provide enough room for traps, loafing, and general sense of security. As in a lot of my experiences, especially in higher water and low duck density situations, we found that ducks visited our sites or were attracted at higher rates when we provided loafing and preening bars made from the cut and piled vegetation. It was also evident that loafing bars further increased catch rates in tucked-away bays when the entrance to the funnel was facing the loafing bar. The adverse was seen when a loafing bar was facing the backside of a trap and no entrance was visible. Also, the Bidwell Site (Figure 1 and Table 1) is a pure sand substrate (bottom), and we had to find the most solid sites we could in the north. These northern sites became worse for walking and wading with a reduction of water throughout the month and after being worked by feeding waterfowl and our disturbances. That being said, there exists incredible waterfowl habitat in the north, and substrate was not going to dictate our successes.

Duck identification was achieved through years of professional experience and expertise of the USFWS Wildlife Biologist. Willow Lake's duck species composition is very predictable and so the chance of misidentification of odd species is highly unlikely. Aging and sexing ducks was accomplished using a variety of techniques such as feather colors, wing characters, bill and leg characters, and cloaca examinations. Further, the USFWS Wildlife Biologist has trapped all over North America, has personally banded very odd species, and constantly monitored the banding technicians for quality control. The USFWS Wildlife Biologist used every opportunity to teach the banding technicians not just how, but why a duck matched a certain species, age, and sex.

Data management was achieved by taking field notes on personally-created banding schedules. These data were then transferred to an Excel Spreadsheet on a computer every night following data collection. These data were then worked for submission to the Bird Banding Laboratory upon returning from the bush. Every effort was made to submit banding data as soon as possible upon returning because duck hunting seasons start September 1, 2015, and inevitably, some of our banded ducks may be subjected to those early hunting seasons.

RESULTS

Table 2. Daily bandings by trap location at Willow Lake, NT, 2015.

	Day of August 2015																	
Banding Site Name	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Grand Total
Bay 1	10	14	18	19	24	50	36	20	19	26	31	29	15	13				324
River Bay	6	11	28	52	39	94	38	41	24	25	35	33	9	11				446
Bidwell		11	74	81	83	67	96	89	12	7		27	29	5	5	12	25	623
Willow Lake Camp						3	17	27	58	10	63	36	16	14	20	17	20	301
Y-Spot											31	47	3	2	20	21	10	134
Y-Spot West															3	7	24	34
Y-Spot South															6	10	20	36
Grand Total	16	36	120	152	146	214	187	177	113	68	160	172	72	45	54	67	99	1898

*Major mink predation event at Bidwell on 8/20, 8/21, 8/23

*Bay 1 and River Bay shut down following 8/25 banding due to low water mud holes, set up Y-Spot West and Y-Spot South with those pulled traps.

Figure 2. Ducks banded by day in August, 2015 at Willow Lake, NT.

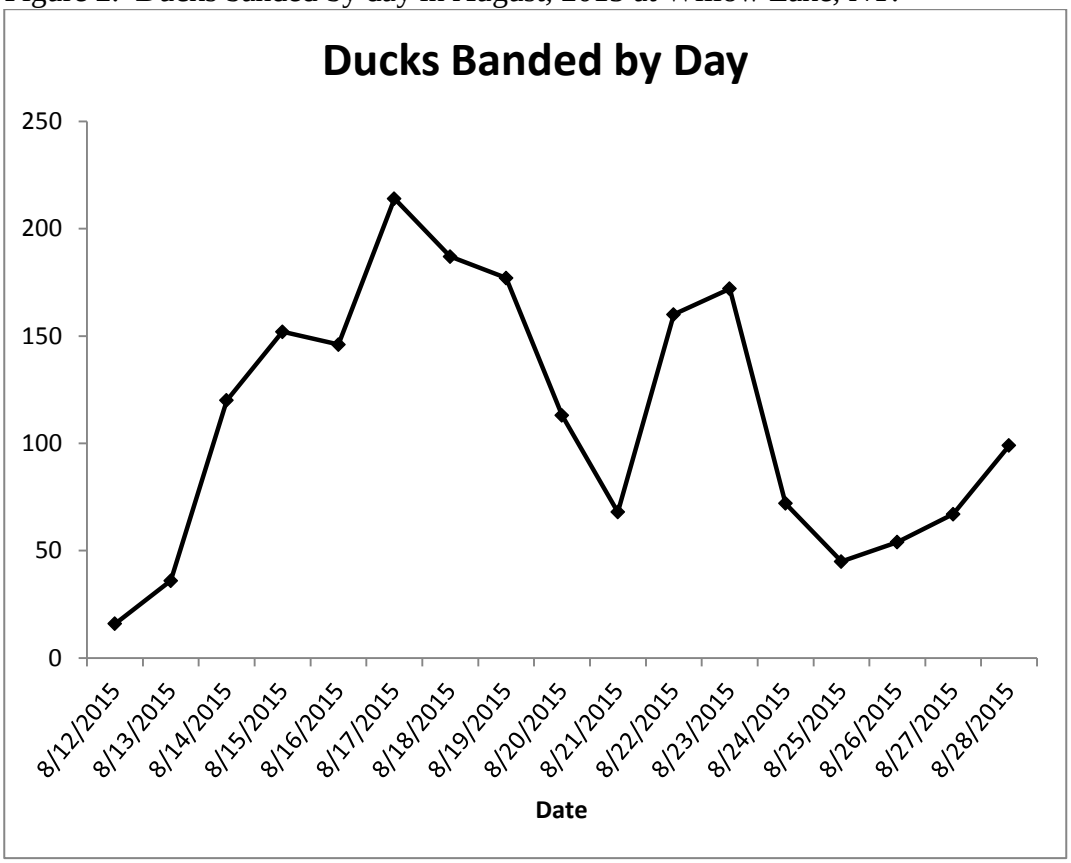

Table 3. Daily bandings by duck species at Willow Lake, NT, 2015.

	Day of August 2015																	
Species	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Grand Total
AGWT	1	7	8	7	2	5	29	20	24	4	9	3	3	1	4		2	129
BWTE								2	2									4
MALL	5	10	17	37	37	66	44	41	30	24	50	53	20	14	18	31	34	531
NOPI	7	16	63	94	104	137	109	109	52	37	101	116	46	29	32	36	63	1151
AMWI	3	3	32	14	3	6	5	5	5	2			3	1				82
MALL/NOPI										1								1
Grand Total	16	36	120	152	146	214	187	177	113	68	160	172	72	45	54	67	99	1898

Table 4. Duck species, age, and sex composition and summary at Willow Lake, NT, 2015.

	Sex			Grand	Species	Percent Hatch Year (HY)
Species	F	M	UNK	Total	Composition	and Local (L) by Species
AGWT	52	77		129	6.8%	
AHY	32	46		78		
HY	20	31		51		39.5%
AMWI	42	40		82	4.3%	
AHY	21	17		38		
HY	19	20		39		
L	2	3		5		6.1%
BWTE	4			4	0.2%	
AHY	4			4		
MALL	202	328	1	531	28.0%	
AHY	180	306	1	487		
HY	20	19		39		
L	2	3		5		0.9%
NOPI	740	411		1151	60.6%	
AHY	512	221		733		
HY	228	190		418		36.3%
MALL/NOPI	1			1		
AHY	1			1		
Grand Total	1041	856	1	1898	100%	29.3%

Table 5. Trap mortality by location and cause of death during trapping at Willow Lake, NT, 2015.

	Cause of Death		
Location	Drowned/Trap-induced	Mink Killed	Total
Bidwell	1	34	35
Willow Lake Camp	2		2
Y-Spot	1	4	5
Grand Total	4	38	42

Table 6. Trap nights and summary statistics at Willow Lake, NT, 2015.

Willow Lake trap nights and summary statistics					
Date	Number of Traps Operating	Total Bands	Trapping Success (Total bands per Trap Night)	Bags of Grain Used	Comments
8/6/2015				4	
8/7/2015				2	
8/8/2015				0	
8/9/2015				2	
8/10/2015	20	0	0.0	3	
8/11/2015	20	0	0.0	3	
8/12/2015	24	16	0.7	3.5	
8/13/2015	24	36	1.5	3	
8/14/2015	25	120	4.8	3.5	
8/15/2015	27	152	5.6	3	
8/16/2015	27	146	5.4	3.75	
8/17/2015	27	214	7.9	4	
8/18/2015	27	187	6.9	4	
8/19/2015	27	177	6.6	4	
8/20/2015	27	113	4.2	4	
8/21/2015	27	68	2.5	4	
8/22/2015	27	160	5.9	2.25	
8/23/2015	27	172	6.4	4	*FROM 2015 STACK
8/24/2015	27	72	2.7	4	*FROM 2015 STACK
8/25/2015	27	45	1.7	4	*FROM 2015 STACK
8/26/2015	26	54	2.1	3	*FROM 2015 STACK
8/27/2015	26	67	2.6	4	*FROM 2015 STACK
8/28/2015	0	99	-	0	
Totals	**462**	**1898**	**4.1**	**72**	**3974.4 lbs. of Barley USED**
				19	**BAGS USED OF 2015 STACK**

Table 7. Trapping success and banding at Willow Lake, NT, 1995–current.

Year	Barley Used (lbs)	Dates Trapped in August	Maximum Number of Traps	Trap Nights (TN)	Number of Ducks Banded	Trapping Success (Ducks / TN)
1995	1500	2 to 21	7	119	509	4.3
1996	4500	9 to 30	17	195	1892	9.7
1997	3500	8 to 29	14	291	1687	5.8
1998	4000	13 to 30	16	262	1700	6.5
1999	5620	3 to 31	16	439	1248	2.8
2000	4463	3 to 30	18	490	1600	3.3
2001	3940	4 to 30	18	451	404	0.9
2002	6100	5 to 29	18	416	2168	5.2
2003	5061	6 to 30	18	423	1348	3.2
2004	4022	9 to 30	20	470	1298	2.8
2005	3030	8 to 30	13	293	1019	3.5
2006	3856	8 to 30	19	408	2083	5.1
2007	4022	12 to 30	18	324	374	1.2
2008	5126	13 to 1	20	398	1944	4.9
2009	3975	11 to 31	24	486	1549	3.2
2010	Station was not operated					
2011	3550	10 to 31	25	511	1674	3.2
2012	Station was not operated					
2013	2950	13 to 31	21	385	1137	3
2014	3150	11 to 27	19	320	1251	3.9
2015	3974	10 to 28	27	462	1898	4.1
Mean	4018	-	18	376	1410	4.0

DISCUSSION

Water levels for the 2015 trapping season were average to above average, and we were able to utilize all areas of Willow Lake. As mentioned above, the crew had to create all of our banding sites because water was too deep beyond the emergent vegetation. In concert with historical reports, the water level decreased throughout the season, and almost all traps needed to be moved either a few yards or to an entirely new site depending on the area surroundings and general slope of the substrate. Weather was mild to somewhat extreme this year. We had two large storms from the north that blew through, but were able to safely accomplish crossing the lake and checking traps by following the lee side of the lake. We received rain quite frequently, but in small rainfall amounts. The hardest rain we experienced was not during banding operations, but was at night and early mornings. In one instance, we stayed in camp until a storm cell containing lightning had moved well past our location, and then ran our trap line. Daily high temperatures during banding operation were 7–24°C (45–75°F), and overnight lows were 0–9°C (32–49°F).

A maximum of 27 swim-in style duck traps with restricted funnels and closed trap doors were run for 18 nights and 462 trap-nights. Trap success was 4.1 ducks per trap night. A total of

1,898 ducks were banded in 2015. Species totals and compositions were: Northern Pintail (*Anas acuta*; 1,151, 61%), Mallard (*Anas platyrhynchos*; 531, 28%), American Green-winged Teal (*Anas crecca*; 129, 7%), American Wigeon (*Anas Americana*; 82, 4%), Blue-winged Teal (*Anas discors*; 4, <1%), and Mallard cross Northern Pintail Hybrid (1) (Tables 3 & 4). The number of ducks caught in 2015 was the 4th best (of 19) and 37% above the long-term average at the Willow Lake Banding Site (Table 7). Approximately 29% of banded ducks (N = 557) were in the Hatch Year (HY) or Local (L) age classes (Table 4). These numbers provide evidence to a low production year if we assume young birds were available to be caught at similar rates as adults and that they were available at the time we were trapping. Anecdotally, we witnessed a dramatic increase in young birds later in August. Arctic nesting geese also started to arrive later in the month, and we witnessed our greatest migration the day we were pulling traps and taking down camp. Hundreds and thousands of southward migrating Greater White-fronted (*Anser albifrons*) and Canada (*Branta canadensis*) Geese created a great spectacle for our last day on the lake.

Sixty-seven percent (N = 1,275) of total ducks were caught away from the traditional southern trap location (Bidwell site). Because we were able to, we trapped the north side of Willow Lake. Without this strategic motion to trap where the ducks wanted to be, we would have only banded 623 total ducks and we would have been explaining a bust year. The north side of the lake should be considered premier waterfowl habitat when water is available, and should be trapped as long as we have permission to. In previous years, locals with cabins on the north side of the lake have voiced concerns, but this is the very best site to trap on the entire lake, and every effort should be made to be granted permission to do so.

Sixty-one foreign bands (from previous years at Willow Lake or elsewhere) were recaptured and four bands were worn enough to justify replacement. The number and percentage of original banding locations are as follows: Willow Lake, NWT (from previous years; 51, 84%), Mills Lake, NWT (4, 7%), Wood Buffalo NP, AB (1, 2%), JCS NWR, ND, USA (1, 2%), and the replacement bands for which I received no information (4, 7%). The total foreign recaps struck us as a very large number, and despite the fact that 84% came from birds previously banded at Willow Lake, these data could indicate a northward movement of ducks during breeding season (referred to as an over-flight year) if we assume breeding ducks could not find suitable breeding habitat in the prairies further south.

Since 1995, 26,783 ducks have been banded at the Willow Lake banding station. The species composition of the 4 most common species banded is Mallard (45%) and Northern Pintail (35%), followed by American Green-winged Teal and American Wigeon at 10% each, respectively. On average, 32% of all ducks banded since 1995 were of the juvenile (HY or L) age classes.

General observations this year were similar to last year's observations. We experienced very low densities of ducks early in the month, and estimate only 1,000 ducks were in the entire vicinity. We estimated this by taking two separate trips around the lake to scout for possible banding sites. We did notice a gradual increase in the total number of ducks using the Willow Lake area later in the month, and the greatest number seen was on our last day on the lake (>5,000).

All garbage was flown out of camp and taken for disposal at the Norman Wells landfill. Black bears (*Ursus americanus*), wolves (*Canis lupis*), and bald eagles (*Haliaeetus leucocephalus*) were seen around camp and some of our trapping sites, but none paid more than a casual interest in the traps. We did have a moose (*Alces alces*) and wolf come through our electrical fence one night, and the moose made quite a mess of the wire. Nothing else was out-of-place, and we determined the wolf must have been attracted by the noise of the moose tearing up our fence.

The project's boat motors, banding carousel, floats, camping equipment, bait (approximately 4,471 lbs. of barley), and supplies have been stored inside the grain silo at the camp for next year. Boats (12' Lund and 17' flat bottom Jon boat) were dragged up the shoreline just downstream of camp, flipped upside down, and tied to trees for the off-season. No regular fuel was left at camp. We continue to lock the silo with two pad locks to prevent and discourage break-ins, which have occurred in recent years. This is not only disappointing, but a major hassle because we don't know what is stolen until we arrive. Further, replacing those stolen items is impossible for the current year. Upon arrival this year, we found no evidence of tampering with the silo, and all items were intact.

Traps are located to the side of the silo, outside and fully exposed to the elements. This has caused a few issues with some traps now rendered unusable because of the threat they pose to the safety of the crew and the birds.

Finally, the banding camp buildings will need to be moved back away from the river. Due to overstory clearing and warming temperatures, the camp continues to see river bank settling from the thawing of the permafrost, and the river bank has been eroding into the Loche River. In 2015, this created an immediate need to lift one of the sleeping cabins which was >14 inches below level. We were able to lift and re-set this cabin about 10 inches. This is only a temporary fix, and a more permanent solution will be needed soon.

HIGH PRIORITY NEEDS FOR 2016:

1. Life jackets have not been purchased for this station, but need to be.
2. The first aid (medical) kit contained only old Band-Aids. This needs to be refreshed with new items, and be similar to those found in wildfire crew gear.
3. Fire extinguishers for each building (3) need to be purchased.
4. Purchase and deliver >5000 lbs. of grain for the 2017 season. This is normally delivered on the winter road to Norman Wells in January or February of 2016.
5. Purchase and deliver 6 rolls (100 ft.) of heavy duty 1" X 2" welded wire to replace some trap wire that has seen over 19 years of weathering. This can be shipped via the winter road as well.
6. Purchase bird netting for the tops of traps. To build new traps, we will also need an ample supply of flexible netting for the topping. This will decrease trap mortalities caused by old trap wires and hard (welded wire) tops.
7. Personnel (i.e., banding technicians) need to be hired in greater advance than two days prior to their departure. We may be able to purchase new waders that actually fit the technicians if we knew their foot sizes. Currently, the technicians continue to use old and well-worn (patched) pairs from previous years, and they rarely fit. This makes for a very uncomfortable work environment.

APPENDIX A. Pictures and captions from Willow Lake, NT banding camp, 2015.

PHOTO 1. Our finest attempt at a crew photo on the last day of banding. Photo By: Steve Olson

PHOTO 2. Gordon and Philip carrying the catch box to traps on a particularly cold and windy final day. Photo By: Steve Olson

PHOTO 3. Lifting one of the cabins to get as close to level as possible. Photo By: Steve Olson

PHOTO 4. Philip and Gordon holding 3 of the only 4 Blue-winged Teal banded at Willow Lake in 2015. Photo By: Steve Olson

PHOTO 5. Philip and Steve holding two Northern Pintail banded at Willow Lake in 2015. Photo By: Steve Olson

PHOTO 6. Steve holding an adult male Northern Pintail banded at Willow Lake in 2015. Photo By: Steve Olson

PHOTO 7. Northern Pintails in the trap and muskox feeding in the background. Photo By: Steve Olson

PHOTO 8. Mallards and Northern Pintail in the traps. Photo By: Steve Olson