

FINAL REPORT  
WESTERN CANADA COOPERATIVE WATERFOWL BANDING PROGRAM, 2013  
WILLOW LAKE, NORTHWEST TERRITORIES

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Abstract:

In 2013, 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 17<sup>th</sup> year (1995-2009, 2011, 2013) of duck banding at Willow Lake (65° 14' N; 125° 25' W) in the Mackenzie River Valley, Sahtu Settlement Area, NWT. Our annual goal is to band 2,000 mallards (*Anas platyrhynchos*), 1,500 northern pintail (*A. acuta*), and all incidentally captured ducks (up to 1,000 per species) prior to the opening day of waterfowl hunting in the NWT (01 September). The USFWS, Sahtu Renewable Resources Board (SRRB), and ENR provided funding for the project. A Waterfowl Biologist (USFWS) supervised one contract Banding Assistant (TRRC) and one student crewmember hired by the SRRB. A maximum of 21 funnel traps were set for a total of 511 trap-nights during 13 to 31 August. Trap success was 3.0 ducks per trap night. A total of 1,157 kg (2,950 lb) of barley was used as bait. Standard leg bands (Call 1-800-327-BAND) were placed on 1,137 ducks: 318 mallards (29% of all ducks banded), 597 northern pintails (53%), 76 American wigeon (*A. Americana*; 7%), 144 American green-winged teal (*A. crecca*; 13%), 2 blue-winged teal (*A. discors*). The number of ducks banded in 2013 was 19% below the 1995–2011 average of 1,406 ducks. The greatest one day catch of unbanded birds occurred on 17 August. Water levels at Willow Lake were well above average for the 2013 season. Approximately 18% of banded ducks (N= 201) were in the hatch-year or local age-class. Thirty-one recaptures of birds banded in previous years were recorded.

Background:

Boreal wetlands along the Mackenzie River Valley, such as Willow Lake (Figure 1) in the Sahtu Settlement Area of the Northwest Territories (NWT), sometimes support dense summer populations of molting, non-breeding adult ducks, particularly when drought conditions occur in more southern breeding areas. In some years there is excellent hatching success and productivity.

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 band ducks within the Sahtu. The annual goal of the project is to band 2,000 mallards (*Anas platyrhynchos*), 1,500 northern pintail (*A. acuta*), and all incidentally captured ducks (up to 1,000 per species) prior to 01 September, which is the opening day of the duck-hunting season in the NWT.

The project was initially established at Loche Lake and Loche River northeast of Tulita in 1995 (Popko et al. 1995; Figure 1); however, based on local Traditional Knowledge (Popko et al. 1996), in 1996 the banding station was moved to the nearby and larger Willow Lake (65° 14' N; 125° 25' W) where it has since remained (Popko et al. 1997, 1998, 2002, 2003, 2004, 2005, 2006, 2007; Bidwell et al. 1999, 2000, 2001; Zimpfer et al. 2008, 2009, 2011). In 2002, the banding project camp and trap-site locations were moved from the inlet of Willow Lake to the better sandy substrate area found near the outlet of Willow Lake (Figure 1).

Willow Lake lies within the selected (i.e., private) lands of the Sahtu Dene and Métis under the terms of the Sahtu Dene and Métis Comprehensive Land Claim Agreement (Dept. of Indian and Northern Affairs Canada, 1993). The Sahtu Renewable Resources Board (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 within the Tulita District, including the Willow Lake watershed. Further, the land claim gives the TRRC 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. The Willow Lake banding project camp consists of two frame cabins, a frame kitchen, and a storage silo. The silo provides storage for large quantities of bait, food, and supplies, which reduces transportation costs.

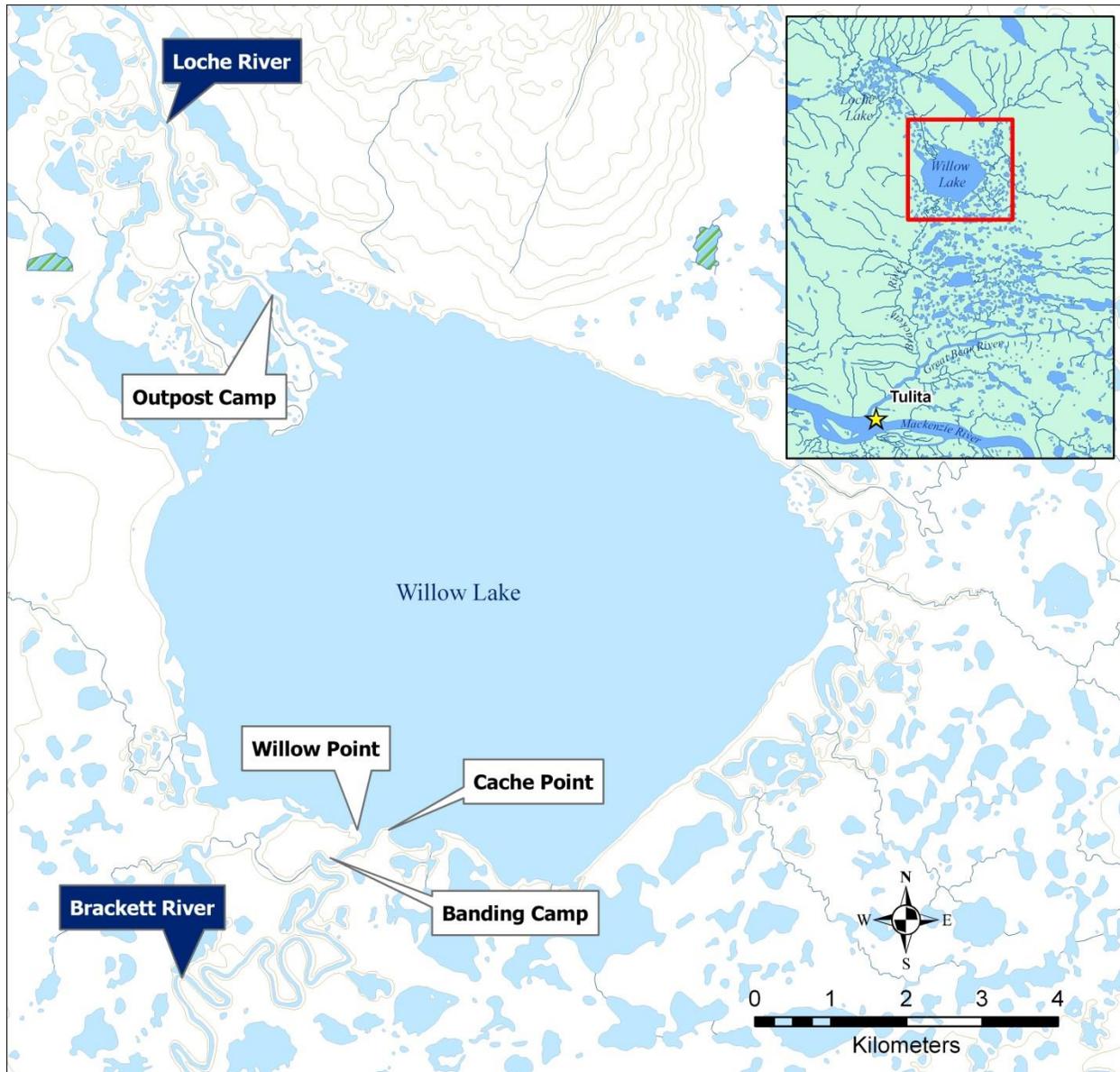


Figure 1. Willow Lake duck banding camp, Tulita District, Northwest Territories.

2013 Narrative:

Biologist Zimpfer arrived in Norman Wells on Monday 05 August. Final preparations (i.e., assemble banding gear, food, fuel, and obtain items from ENR forestry operations (A chainsaw, 2-way radio, and brushcutter) were made for departure to Willow Lake on 08 August. In addition, time was spent discussing specific tasks to be accomplished while at Willow Lake. The TRRC has a contract for this project arranged by ENR using funds provided by USFWS. The TRRC hired senior banding assistant Albert Bernarde for 24 day banding period. In addition the TRRC hired secondary school student, Blake Andrew for 24 day banding period, paid for by the SRRB. Albert and Blake have both previously worked at the Willow Lake station in 2003 and 2011, respectively.

On Thursday 08 August two trips were made with a Pilatus Porter airplane on-floats (Northwright Airways Ltd, Norman Wells) delivering Zimpfer, Behrens, and supplies from Norman Wells, and then from Tulita to the banding location with the Crew (Albert Bernarde, Blake Andrew). A resupply with additional food stores occurred on Tuesday 20 August, via Pilatus Porter. Daily communication occurred between the banding camp and ENR in Norman Wells by Forest Management's radio system. No communication occurred on weekends, as the radio dispatch was not staffed on weekends. For emergencies and regular contact with banding coordinators and family members using the USFWS provided an Iridium sat phone. Connection and speech clarity of the Iridium service continue to be exceptional at the Willow Lake camp. In addition, Northwestel recently upgraded the cellular phone system to 3G and in Norman Wells and Tulita. Verizon customers will now be able to connect to the network in roaming mode while in town. Second, those with recent generation smart phones like the Apple Iphone, or Samsung Galaxy can send and receive text messages from the Willow Lake camp, and to a lesser extent make phone calls. Generator-produced electricity at camp is essential for computer data entry and to run a freezer for food storage. Finally, ENR and SRRB policies do not allow crew members to hunt while they are working on projects.

All garbage was removed from site and taken for disposal at the Norman Wells landfill. Black bears (*Ursus americanus*) and bald eagles (*Haliaeetus leucocephalus*) were seen around camp and the Willow Point banding site, none paid more than a casual interest in camp or the traps.

This year Willow Lake had good navigable water levels and we were able to use the original Willow Point trapping location, on the SW side of the lake. This location is ideal for trapping, since the lake substrate is hard sand and slopes about 1 inch every 8 feet. However, in the future years with adequate water levels and fuel the crew may explore trapping ducks in the Loche River in addition to Willow Point. It has become apparent that some ducks spend the entire month in various pockets of the river and don't move downstream into Willow Lake in August. This has the potential to increase catch with a marginal increase in effort.

The project's boats, motors, carousel, floats, camping equipment, bait (approximately 2000 lbs. of barley), and supplies are stored inside the grain silo at the banding camp for next year. As of 2013 the USFWS catch box stored in the silo was upgraded with the new "Ferguson design" aluminum doors and rails. All traps are folded and piled in the bush at the east side of the Willow Lake outlet at Cache Point (Figure 1.).

Results:

Water levels for the 2013 trapping season were well above average at Willow Lake. Despite high water levels we were able to utilize the original Willow Point trapping location, on the SW side of the lake trapping. Initially, conditions at this location were less than ideal as traps had located closer to shore where the bottom is semi-soft mud. However, conditions improved as season progressed and water levels dropped enough to relocate traps further from shore where the bottom changes to hard sand. Good weather persisted for the month, with 4 days of rain. In most cases rain occurred early in the morning prior to banding or during evenings. Otherwise, weather was typical for the NWT region. During the first week of operations, days were unseasonably warm and sunny with highs above 28°C (82°F). Several forest fires around the area created hazy conditions, however this dissipated as the month progressed and temperatures cooled. Daily high temperatures at the close of banding operations ranged between 7–19°C (45–66°F), and evening lows were between -1–5°C (30–41°F).

A total of 21 traps were set at Willow Point, and trapping began (i.e., reduced funnel size and doors closed) on 12 August. In total, 1,538 ducks were handled from 13 Aug– 31 Aug (19 days). This resulted in a total of 385 trap nights, with an average of 3.0 ducks per trap night (Table 1, Table 2). Overall, the crew banded 1,137 ducks (318 mallards, 597 northern pintails, 76 American wigeon, 144 American green-wing teal, 2 blue-wing teal; Table 1.). In comparison to previous trapping activities, this year's catch was 19% below the 1995–2011 mean of 1,406 ducks. Banding operations also resulted in recaptures of 31 birds banded in prior years. Over the course of trapping 1,157 kg (2,950 lb) of barley were used as bait. High water levels this year necessitated locating traps closer to the wood line and shore than preferred. This created a condition for increased predation from mink, which occurred on 22 August when 5 ducks were found dead at the trap site. On 24 and 25 August 2 mink captured in Tomahawk live traps and relocated downriver away from the trap site. Their presence resulted in very few ducks captured from 21–24 August.

Since 1995, 23,636 ducks have been banded at the Willow Lake Station. The species composition of the 4 most common species banded is mallard (46%) and northern pintail (33%) followed by American green-winged teal and American wigeon at 11% and 10%, respectively. On average, 32% of all ducks banded since 1995 were of the juvenile age-class. Black bears (*Ursus Americanus*) and muskox (*Ovibos moschatus*) were observed on several occasions near camp, and along the rivers, but they did not interfere with trapping efforts or camp.

General observations from this year's banding activity were that waterfowl densities were notably lower on Willow Lake proper. It is unclear whether high water levels and warm conditions had birds holding further north than normal, or whether birds were simply scattered across the abundant number of ponds in the wetland complex that Willow Lake resides. Second, molting scaup on the lake this were mostly absent. In a tour of the lake the crew observed at most a dozen scaup.

Camp Notes:

In the next few years the Willow Lake banding camp will see an increased need for attention and maintenance. Due to overstory clearing the camp continues to see settling from the thawing of the permafrost. The camp now has a noticeable slope toward the river. In addition, the bank continues to erode during the spring runoff, such that the kitchen is now approximately 8 feet from the edge and will require relocation in order to keep it from falling into the river. Finally, the silo continues to be a target for break-ins. We are certain that the silo was broken into twice between the end of 2011 banding operations and the beginning of 2013 operations. It appears that only items taken were approximately 3 gallons of regular gas remaining from the go-devil. However, the continued break-ins are causing significant non-repairable damage to the silo door. At some point the damage will likely create a scenario where the crew will be unable to secure the silo at the close of banding operations. No regular gas remained at the camp at the close of 2013 banding operations.

The traps continue to be stored at the cache point location. However, this area is undergoing significant amount of erosion during the spring. The effect of this is that the point will be completely eroded in a few years, and the traps are spending long periods of time submerged in water shortening their lifespan. Consideration should be made to relocate the storage of traps to a higher location in the area of cache point, or store the traps back at camp.

High priority needs for 2014:

1. Purchase and deliver 1814 kg (4000 lb) of barley on the winter road to Norman Wells during Jan–Feb 2014.
2. Purchase and deliver 2–3 100' rolls of 14 gauge wire to Norman Wells during Jan–Feb 2014.
3. The silo door continues to be the weakest point of entry to the silo. The project should seek the fabrication of a custom steel door according to specifications collected to increase the security of the door, and additional protection for locks.
4. Construct new Benning B-2 traps and/or the round style with the supporting aluminum polls used at prairie stations.

Other Recommendations for 2014

1. Consider trapping in locations other than Willow Point in an attempt to meet stated banding objectives, and reduce avian and mammalian predator concentrations at Willow Point (e.g., out pockets in Loche River circa 1995 banding, North end of Willow Lake), conditional on water levels.
2. Design and construct traps for potential scaup banding.

Species															
Trap Day	Date	Species						Other Species	Number of Recaptures	New Bands/Day	Total Daily Catch	% Catch New Bands	Running		Trap Nights
		American Green-winged teal	Blue-winged teal	American wigeon	Northern pintail	Mallard							Total of New Bands	Running Catch	
0	11-Aug	0	0	0	0	3	0	0	3	3	100.00%	3	3	0	
0	12-Aug	0	0	6	0	0	0	0	6	6	100.00%	9	9	0	
1	13-Aug	22	0	9	25	21	0	1	77	78	98.72%	86	87	20	
2	14-Aug	30	0	4	18	21	0	6	73	79	92.41%	159	166	21	
3	15-Aug	6	0	2	16	26	0	7	50	57	87.72%	209	223	21	
4	16-Aug	12	0	11	48	16	0	13	87	100	87.00%	296	323	21	
5	17-Aug	3	0	3	89	52	0	32	147	179	82.12%	443	502	20	
6	18-Aug	10	0	15	28	33	0	51	86	137	62.77%	529	639	21	
7	19-Aug	5	0	11	44	39	0	59	99	158	62.66%	628	797	21	
8	20-Aug	2	0	6	5	12	0	19	25	44	56.82%	653	841	21	
9	21-Aug	0	0	0	0	0	0	0	0	0	0.00%	653	841	21	
10	22-Aug	0	0	0	2	0	0	1	2	3	66.67%	655	844	21	
11	23-Aug	0	0	0	0	0	0	0	0	0	0.00%	655	844	21	
12	24-Aug	6	0	1	0	0	0	1	7	8	87.50%	662	852	21	
13	25-Aug	19	1	1	27	4	0	17	52	69	75.36%	714	921	21	
14	26-Aug	4	0	4	20	7	0	20	35	55	63.64%	749	976	21	
15	27-Aug	3	0	1	50	14	0	24	68	92	73.91%	817	1068	21	
16	28-Aug	18	1	2	68	21	0	25	110	135	81.48%	927	1203	21	
17	29-Aug	4	0	0	61	16	0	44	81	125	64.80%	1008	1328	21	
18	30-Aug	0	0	0	67	17	0	47	84	131	64.12%	1092	1459	20	
19	31-Aug	0	0	0	29	16	0	34	45	79	56.96%	1137	1538	10	
Seasonal Totals		144	2	76	597	318		401				1137	1538	385	
Average/Day		7.20	0.10	3.80	28.40	15.10		18.35	54.60	72.95					

Accidentals & Rare Occurrences		
Date	Species	Number
None		

Mortalities				
Date	Species	Number	Banded	Cause
14-Aug	AMWI	1	No	Trap
22-Aug	NOPI	3	No	Mink
22-Aug	MALL	1	No	Mink
22-Aug	AMWI	1	Yes	Mink
30-Aug	NOPI	1	Yes	Unknown

Ageratios (young/adult) at catch	
Species	Ageratio
AGWT	0.36
AMWI	0.69
NOPI	0.20
MALL	0.16

Table 2. Trapping Success Duck Banding at Willow Lake, NT, 1995 to 2013.

Year	Barley (lb)	Dates Trapped 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	3.0
Mean	4071	2 to 31	18	382	1390	3.6