

FINAL REPORT  
WESTERN CANADA COOPERATIVE WATERFOWL BANDING PROGRAM, 2014  
WILLOW LAKE, NORTHWEST TERRITORIES

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Abstract:

In 2014, the Sahtu Renewable Resources Board (SRRB), 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 18<sup>th</sup> year (1995-2009, 2011, 2013-2014) 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, SRRB, and ENR provided logistical support for the project. A Waterfowl Biologist (USFWS) supervised one contract Banding Assistant (TRRC) and one student crewmember hired by the SRRB. A total of 19 funnel traps were set for a total of 320 trap-nights during 10 to 27 August. Trap success was 3.9 ducks per trap night. A total of 1425 kg (3150 lb) of barley was used as bait. Standard leg bands (Call 1-800-327-BAND) were placed on 1,251 ducks: 631 mallards (50% of all ducks banded), 421 northern pintails (34%), 11 American wigeon (*A. Americana*; 8%), 81 American green-winged teal (*A. crecca*; 6%), 12 blue-winged teal (*A. discors*; 1%) and 6 northern shoveler (*A. clypeata*; <1%). The number of ducks banded in 2014 was 10% below the 1995–2013 average of 1390 ducks. The greatest one day catch of birds occurred on 22 August, with a catch of 198 birds of which 143 were unbanded. Water levels at Willow Lake were below average for the 2014 season. Approximately 35% of banded ducks (N= 444) were in the hatch-year or local age-class. Twenty-five recaptures of birds banded in previous years or from stations other than Willow Lake 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, 2013). 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.

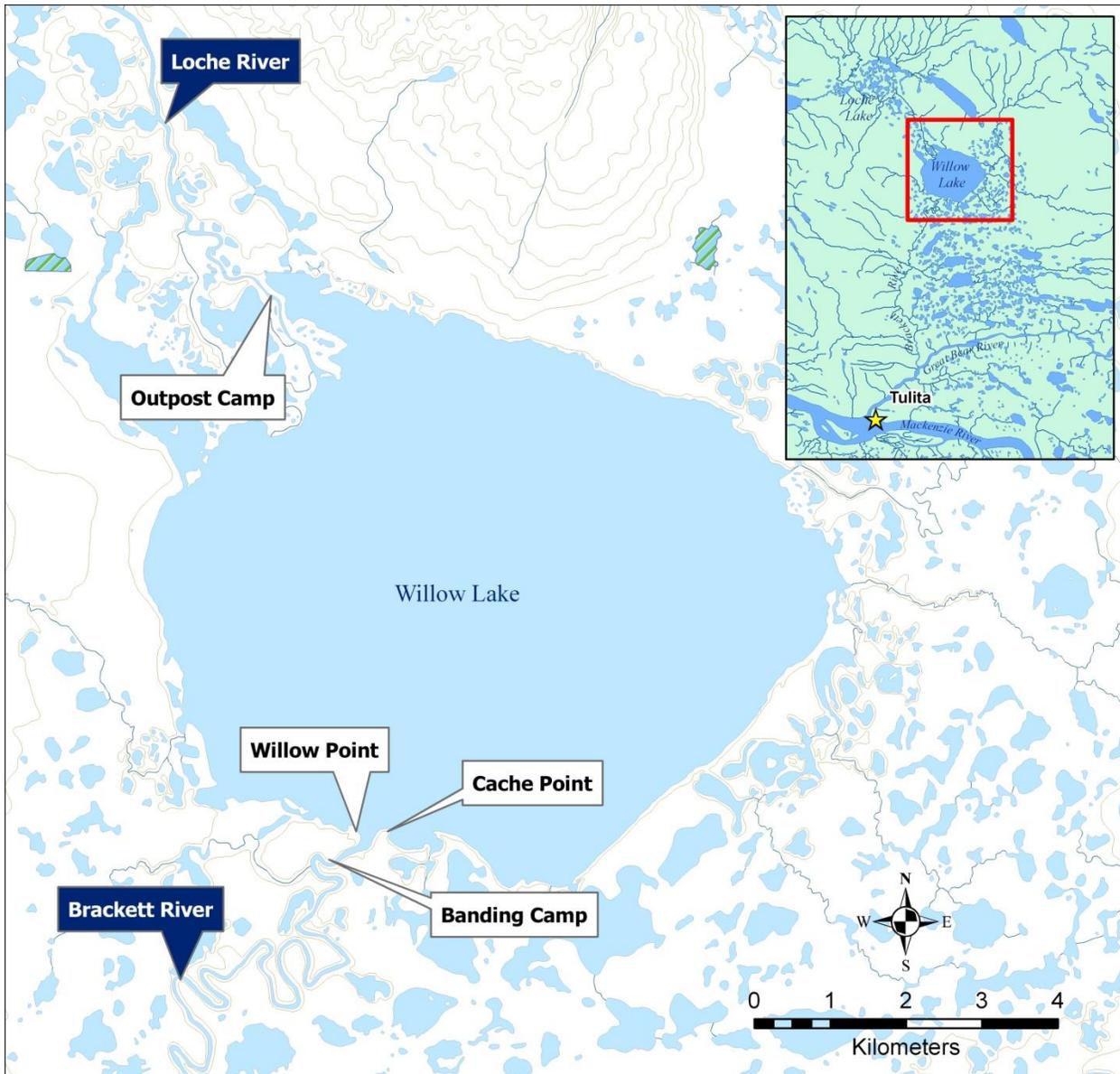


Figure 1. Willow Lake duck banding camp, Tulita District, Northwest Territories.

2014 Narrative:

Biologist Zimpfer arrived in Norman Wells on Sunday 03 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 06 August. In addition, time was spent discussing specific tasks to be accomplished while at Willow Lake. For 2014, the SRRB committed monies to hire the local banding crew from Tulita, NWT based on some broad guidance from biologist Zimpfer. The SRRB hired senior banding assistant Philip Clemente, and secondary school student, Kyle Yakeleya for 22 day banding period. Phillip has previously worked at the Willow Lake station in 2011.

On Wednesday 06 August one trip was made with a with a Dehaviland Twin Otter on-floats (North Wright Airways Ltd, Norman Wells) delivering Zimpfer, Clement, Yakeleya, supplies, and approximately 1200 lbs of whole barley from Norman Wells, to Tulita and then to willow lake. A second Twin Otter flight was made on 07 August to deliver the remainder of the barley that was delivered to ENR in January 2014. A resupply with fuel occurred on Sunday 10 August, via Pilatus Porter, and additional food stores on Monday 18 August. Daily communication occurred between the banding camp and ENR in Norman Wells by Forest Management's radio system, in addition daily check-ins we made to the banding coordinator in Saskatoon via Iridium satellite 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 in Norman Wells and Tulita. Verizon customers will now be able to connect to the network in roaming mode while in town. Further, 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*), wolves (*Canis Lupus*), and bald eagles (*Haliaeetus leucocephalus*) were seen around camp and the Willow Point banding site, none paid more than a casual interest in the traps. It was believed that a bear may have been hanging around the camp as the crew found recent scat while outside the fence, and we had one instance where a bear approached the fence while we were in camp, and a second instance where a bear pulled on the electric fence while we were banding.

This year water levels at Willow Lake were below normal, however 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 3600 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. Due to continued erosion of cache point during spring ice breakup, all to the traps have been relocated to the camp site for storage on an elevated platform.

Results:

Water levels for the 2014 trapping season were below normal at Willow Lake. Despite below normal water levels we were able to utilize the original Willow Point trapping location, on the SW side of the lake for trapping. With low water levels traps were located at the very edge of the sand bar which is ideal for trapping. Normally, water levels in the Willow Lake system drop as the month progresses. This year there appeared to be minimal drop in water levels over the month, minimizing the need to relocate traps. Weather was average this year, with 9 days of rain. In most cases rain occurred early in the morning prior to banding, however, there were 2 days of heavy rain during the banding window. Otherwise, weather was typical for the NWT region. Several forest fires around the area periodically created hazy conditions, however this dissipated as the month progressed and temperatures cooled. Daily high temperatures at the close of banding operations ranged between 17–21°C (62–69°F), and evening lows were between 3–9°C (37–49°F).

A total of 19 traps were set at Willow Point, and trapping began (i.e., reduced funnel size and doors closed) on 11 August. In total, 1,251 ducks were handled from 10 Aug– 27 Aug (19 days), ducks (631 mallards, 421 northern pintails, 100 American wigeon, 81 American green-winged teal, 12 blue-winged teal, 6 northern shoveler; Table 1.). This resulted in a total of 320 trap nights, with an average of 3.9 ducks per trap night (Table 1, Table 2). In comparison to previous trapping activities, this year's catch was 10% below the 1995–2013 mean of 1390 ducks. Banding operations also resulted in the recapture of 25 birds banded in prior years or from stations other than Willow Lake. Over the course of trapping 1,425 kg (approximately 3,150 lb) of barley were used as bait. In contrast to 2013, there was only a single mortality during trapping operations, which was a cranial injury from impacting with the wire top of the trap.

Since 1995, 24,887 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 10% each, respectively. On average, 32% of all ducks banded since 1995 were of the juvenile age-class.

General observations from this year's banding activity were that waterfowl densities were low at the beginning of the month and increased at the end of the month on Willow Lake proper. On occasion, when we were able to navigate the river it was notably absent of all waterfowl. Typically, the rivers has good numbers of ducks were interested in and red-breasted mergansers (*Mergus serrator*). Unlike other stations this year we noticed fewer than normal broods, and only captured 6 individuals of the local age class.

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. Once again, the silo was broken into during the spring of 2014. Our best guess is that the break in occurred during the spring hunt as we noticed that the cabins had also seen use since last year's operations. It appears that only a few items taken or used; 1 gallon of white gas (Coleman fuel) and 2 cans of bear spray, 100 ft of rope, and a fish landing net. However, the continued break-ins are causing significant non-repairable damage to the silo door, and the loss of supplies potentially represent a significant unnecessary increase in costs if additional flights are necessary to replace stolen items that are necessary for operations. 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 2014 banding operations.

Trap storage has been relocated from cache point to the banding campsite, primarily due to continued erosion of the point during spring ice breakup. While adding additional setup time for transport this should extend the life of current traps if they can be enclosed or covered from the elements in future years.

High priority needs for 2015:

1. USFWS/ENR should purchase a new or restock the medical kit at Willow Lake. The current one has been used or neglected over the years. The kit should include chemical cold packs to reduce swelling as ice is not readily available.
2. Purchase and deliver 1814 kg (4000 lb) of barley on the winter road to Norman Wells during Jan–Feb 2015.
3. Purchase and deliver 2–3 100' rolls of 18ga 1" x 2" wire to Norman Wells during Jan–Feb 2015.
4. The silo door continues to be the weakest point of entry to the silo. The project should seek the fabrication of a custom door to increase the security of the door, and additional protection for locks.
5. Construct new Benning B-2 traps and/or the round style with the supporting aluminum polls used at prairie stations.

Other Recommendations for 2015

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.

Table 1. Daily accounting of capture and banding at Willow Lake for 2014 operations.

Trap Day	Date	Species							Number of Recaptures	New Bands/Day	Total Daily Catch	% Catch New Bands	Running Total		
		American Green-winged teal	Blue-winged teal	American wigeon	Northern pintail	Mallard	Other Species	of New Bands					Running Catch	Trap Nights	
1	10-Aug	1	10	0	0	1	0	0	12	12	100.00%	12	12	19	
2	11-Aug	51	0	0	3	5	0	2	59	61	96.72%	71	73	19	
3	12-Aug	0	1	1	2	9	0	1	13	14	92.86%	84	87	18	
4	13-Aug	1	0	0	1	0	6	0	8	8	100.00%	92	95	11	
5	14-Aug	0	0	0	0	0	0	0	0	0	0.00%	92	95	11	
6	15-Aug	10	0	3	38	5	0	2	56	58	96.55%	148	153	19	
7	16-Aug	12	0	22	52	27	0	7	113	120	94.17%	261	273	19	
8	17-Aug	2	1	21	28	43	0	7	95	102	93.14%	356	375	19	
9	18-Aug	1	0	9	36	83	0	15	129	144	89.58%	485	519	19	
10	19-Aug	1	0	11	17	73	0	20	102	122	83.61%	587	641	17	
11	20-Aug	1	0	11	59	55	0	19	126	145	86.90%	713	786	19	
12	21-Aug	0	0	10	50	60	0	30	120	150	80.00%	833	936	18	
13	22-Aug	0	0	5	66	72	0	55	143	198	72.22%	976	1134	19	
14	23-Aug	0	0	2	20	54	0	36	76	112	67.86%	1052	1246	19	
15	24-Aug	0	0	1	18	50	0	57	69	126	54.76%	1121	1372	19	
16	25-Aug	1	0	1	23	50	0	53	75	128	58.59%	1196	1500	19	
17	26-Aug	0	0	3	6	24	0	50	33	83	39.76%	1229	1583	18	
18	27-Aug	0	0	0	2	20	0	25	22	47	46.81%	1251	1630	18	
Seasonal Totals		81	12	100	421	631	6	379				1251	1630	320	
Average/Day		4.50	0.67	5.56	23.39	35.06	0.33	21.06	69.50	90.56					

Accidentals & Rare Occurrences		
Date	Species	Number
8/13/2014	NSHO	6

Mortalities			
Date	Species	Number	Banded Cause
25-Aug	Mall	1	Yes Trap Death

Ageratios (young/adult) at catch	
Species	Ageratio
AGWT	0.800
AMWI	0.370
NOPI	1.903
MALL	0.186

Table 2. Trapping Success Duck Banding at Willow Lake, NT, 1995 to 2014.

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
2014	3150	11 to 27	19	320	1251	3.9
Mean	4020	2 to 31	18	379	1383	3.7