

FINAL REPORT
WESTERN CANADA COOPERATIVE WATERFOWL BANDING PROGRAM, 2011
WILLOW LAKE, NORTHWEST TERRITORIES

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Abstract:

In 2011, 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 16th year (1995-2009, 2011) 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 2000 mallards (*Anas platyrhynchos*), 1500 northern pintail (*A. acuta*), and all incidentally captured ducks (up to 1000 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 25 funnel traps were set for a total of 511 trap-nights during 10 to 31 August. Trap success was 3.2 ducks per trap night. A total of 1610 kg (3550 lb) of barley was used as bait. Standard leg bands (Call 1-800-327-BAND) were placed on 1674 ducks: 718 mallards (43% of all ducks banded), 466 northern pintails (28%), 300 American wigeon (*A. americana*; 18%), 184 American green-winged teal (*A. crecca*; 11%), 4 blue-winged teal (*A. discors*), 1 northern shoveler (*A. clypeata*), and 1 lesser scaup (*Athya affinis*). The number of ducks banded in 2011 was 17% above the 1995–2009 average of 1388 ducks. The greatest one day catch of unbanded birds occurred on 14 August, and the greatest total catch in one day occurred on 15 August with a catch of 222 ducks. Willow Lake water levels were average to slightly above average for the 2011 season. Approximately 27% of banded ducks (N= 448) were in the hatch-year or local age-class, which is less than the 1995-2009 station average of 33 % juvenile age class. Forty-two recaptures were recorded, all of which were birds banded in prior years (2005:7.1%, 2006:19.1%, 2008:28.6%, 2009:45.2%).

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 2000 mallards (*Anas platyrhynchos*), 1500 northern pintail (*A. acuta*), and all incidentally captured ducks (up to 1000 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). 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.

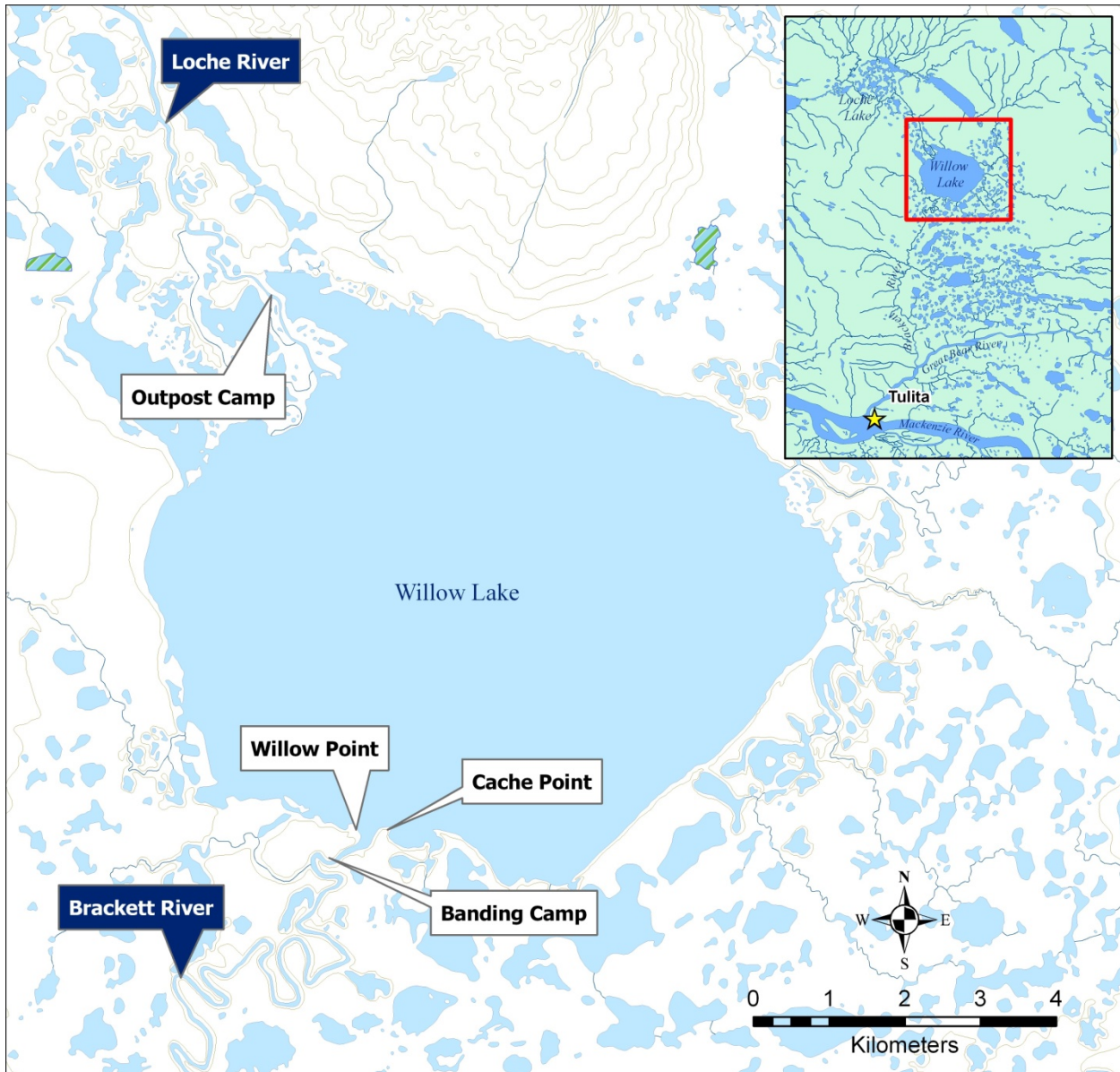


Figure 1. Willow Lake duck banding camp, Tulita District, Northwest Territories.

2011 Narrative:

Biologist Zimpfer arrived in Norman Wells on Wednesday 3 August. Final preparations (i.e., assemble banding gear, food, fuel, and obtain items from ENR operations (chainsaw, 2-way radio, 1 brushcutter) were made for departure to Willow Lake on 5 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 Phillip Clemente for 4 weeks. In addition the TRRC hired secondary school student, Blake Andrew for 4 weeks, paid for by the SRRB. Phillip Clemente has previously worked at the Willow Lake station in the late 1990's while a student. Further, Phillip Clemente's Father/Uncle was Edward Yakeleya who assisted Richard Popko during beginning years of the station.

On 5 August two trips were made with a Pilatus Porter airplane on-floats (North-Wright Airways Ltd, Norman Wells) delivering Zimpfer and supplies from Norman Wells, and then from Tulita with the Crew (Philip Clemente, Blake Andrew). A resupply occurred on 12 August, via Pilatus Porter. The resupply occurred a week earlier than normal to replace essential items stolen from a silo break-in during the spring of 2011. On 18 August, Forest Management (ENR; in-kind contribution) delivered 3000 lb of barely to Willow Lake with their contract A Star Helicopter (Sahtu Helicopters, Norman Wells). All grain bags were marked with the current year, and stored in the silo. The remaining 800 lb of barley were delivered by Pilatus Porter to the Willow Lake camp on the pick-up flight on 31 August.

Daily communication occurred between the banding crew and ENR in Norman Wells by Forest Management's radio system. No communication occurred on weekends, as the radio is not staffed by ENR on weekends. This year ENR provided a radio with increased wattage that was capable of reaching the repeater on days with significant cloud cover with clear communication. The USFWS provided Inmarsat satellite phone failed due to a defective battery. This service holds promise in the future; however, a defective battery prevented use of the phone while at Willow Lake. The crew fell back to an Iridium satellite phone provided by ENR as a substitute, and when conversation required detailed information transfer. Connection and speech clarity of the Iridium service continue to be exceptional. Generator-produced electricity at camp is essential for computer data entry and to run a freezer for food storage. 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 to Willow Lake in August. This has the potential to increase catch with a marginal increase in effort.

The project's boats, motors, carousel, floaters, camping equipment, bait (approximately 5000 lb of barley), and supplies are stored inside the grain silo at the banding camp for next year. 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 2011 trapping season were again average to above average at Willow Lake. The crew was able to use the original Willow Point trapping location, on the SW side of the lake. Good weather persisted for the month, with 7–8 days of rain. In most cases rain occurred early in the morning prior to banding or during the evening. Otherwise, weather was typical for the NWT region. During the first week of operations, days were warm and sunny with highs between 20–25°C (68–77°F). Daily high temperatures at the close of banding operations ranged between 14–19°C (57–66°F), and evening lows were between 3–8°C (37–46°F).

A total of 25 traps were set at Willow Point, and trapping began (i.e., reduced funnel size and doors blocked) on 10 August. In total, 2550 ducks were handled from 10 Aug – 31 Aug (22 days). This resulted in a total of 511 trap nights, with an average of 3.2 ducks per trap night (Table 1, Table 2). Overall, the crew banded 1,674 ducks (718 mallards, 466 northern pintails, 300 American wigeon [A record for this station], 184 American green-wing teal, 4 blue-wing teal, 1 lesser scaup and 1 northern shoveler; Table 1.). In comparison to previous trapping activities, this year's catch was 17% above the 1995–2009 mean of 1,388 ducks. Banding operations also resulted in recaptures of 42 birds banded in prior years. We also replaced one band on a hen northern pintail that all but two numbers had worn off the band. The original band will be sent to the BBL for etching. Over the course of trapping 1,610 kg (3,550 lb) of barley were used as bait.

Since 1995, 22,497 ducks have been banded at the Willow Lake Station. The overall species composition of the 13 species banded is primarily mallard (46.4%) and northern pintail (32%) followed by American green-winged teal and American wigeon at ten percent each. Thirty-two percent of all ducks banded since 1995 were juvenile age-class. Unlike previous years, we experienced no trapping mortality and no evident mortality from eagles. 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, 1.) Most of the mallard catch were AHY birds. 2.) Most of the waterfowl were concentrated at Willow Lake with very few birds seen in the Loche and Brackett Rivers. 3.) The number of American wigeon appear to be increasing over time around the Willow Lake area. We observed large numbers of American wigeon on Willow Lake, and surrounding ponds this year. 4.) Like previous years, molting scaup (*Athya* spp.) were present on Willow Lake; however, their numbers appeared to be down. 5.) Migrating Canada geese and tundra swans arrived early at Willow Lake this year, around the 20th of August.

High priority needs for 2012:

1. Purchase and deliver 1814 kg (4000 lb) of barley on the winter road to Norman Wells during Jan–Feb 2012.
2. Have USFWS deliver a new catch box with the modified Ferguson door during 2012 Spring Surveys for delivery to Willow Lake during the following season.
3. The silo door continues to be the weakest point of break- in entry to the silo. The project should seek the purchase or the fabrication of steel reinforcing pieces according to specifications collected during this year’s operations to add to the rigidity and security of the door.

Other Recommendations for 2012

1. Consider trapping in locations other than Willow Point in an attempt to meet stated banding objectives, and reduce avian 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. Consider obtaining bands for tundra swans, and potentially attempt to band molting tundra swans on Willow Lake.
3. Design and construct traps for potential scaup banding.
4. Construct new, modified design puddle duck traps.

Table 1. Daily summary of catch operations at Willow Lake, 2011.

Trap Day	Date	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	Other Species	Total of New Bands					Running Catch		
1	10-Aug	21	3	4	5	21	0	0	54	54	100.00%	54	54	24	
2	11-Aug	4	0	9	4	16	0	2	33	35	94.29%	87	89	24	
3	12-Aug	0	0	6	2	0	0	0	8	8	100.00%	95	97	24	
4	13-Aug			3					3	3	100.00%	98	100	1	
5	14-Aug	27	0	43	50	80	0	13	200	213	93.90%	298	313	24	
6	15-Aug	14	0	53	49	75	0	31	191	222	86.04%	489	535	24	
7	16-Aug	19	0	8	14	42	0	37	83	120	69.17%	572	655	24	
8	17-Aug	21	1	21	23	18	0	39	84	123	68.29%	656	778	24	
9	18-Aug	10	0	7	15	37	1	51	70	121	57.85%	726	899	24	
10	19-Aug	4	0	2	25	39	0	51	70	121	57.85%	796	1020	24	
11	20-Aug	23	0	12	49	33	0	56	117	173	67.63%	913	1193	24	
12	21-Aug	1	0	6	47	54	0	60	108	168	64.29%	1021	1361	24	
13	22-Aug	2	0	7	19	27	0	39	55	94	58.51%	1076	1455	24	
14	23-Aug	3	0	4	18	23	0	52	48	100	48.00%	1124	1555	24	
15	24-Aug	4	0	13	5	6	0	29	28	57	49.12%	1152	1612	25	
16	25-Aug	1	0	7	18	24	0	49	50	99	50.51%	1202	1711	24	
17	26-Aug	6	0	14	33	61	0	90	114	204	55.88%	1316	1915	25	
18	27-Aug	3	0	10	2	30	1	53	46	99	46.46%	1362	2014	25	
19	28-Aug	4	0	9	9	15	0	50	37	87	42.53%	1399	2101	25	
20	29-Aug	7	0	18	19	27	0	37	71	108	65.74%	1470	2209	25	
21	30-Aug	8	0	24	33	23	0	54	88	142	61.97%	1558	2351	24	
22	31-Aug	2	0	20	27	67	0	83	116	199	58.29%	1674	2550	25	
Seasonal Totals		184	4	300	466	718		876				1674	2550	511	
Average/Day		9.10	0.20	13.33	21.95	32.55		39.65	74.19	111.95					

Accidentals & Rare Occurrences		
Date	Species	Number
8/18/2011	LESC	1
8/18/2011	MALL x DOME*	1
8/27/2011	NSHO	1

* Not Banded

Mortalities				
Date	Species	Number	Banded	Cause
		None		

Ageratios (young/adult) at catch	
Species	Ageratio
MALL	0.129
AMWI	0.515
NOPI	0.695
AGWT	0.643

Table 2. Trapping Success Duck Banding at Willow Lake, NT, 1995 to 2011.

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
Mean	4142	2 to 31	17	374	1406	3.8