

LAKE TROUT POPULATION ASSESSMENT TA'TLA MUN (TATLMAIN LAKE)

2011



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Summary

Environment Yukon has been surveying important fish stocks since 1991. We use these surveys to detect population changes and monitor population health. Along with angler harvest surveys, these data are also used to assess the sustainability and impact of fisheries.

Environment Yukon works with First Nations, Renewable Resources Councils, and user groups to determine priority lakes for surveys. Criteria for identification of priority lakes include accessibility, sensitivity, and management concern. The surveys focus on lake trout, an indicator of the health of northern lake ecosystems.

We surveyed Ta'tla Mun (Tatlmun Lake) in 2011 using Summer Profundal Index Netting (SPIN). Environment Yukon previously surveyed the lake using a different index netting technique in 1999 and 2004. SPIN provides more statistically robust data and improves confidence in survey results (Jessup and Millar 2011).

Lake-wide catch per unit effort (CPUE) was 1.00 lake trout per net set. Lake trout density was estimated at 4.1 lake trout / hectare, which is high when compared to other similar Yukon lakes sampled to date.

Key Findings

- Ta'tla Mun has an abundant, healthy population of large-body lake trout.
- Lake trout density was high compared to other large-body lake trout lakes surveyed to date.

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Introduction

Each year, Environment Yukon conducts assessment of fish populations, with a focus on lake trout. Between 1991 and 2009, over 100 Yukon lakes were surveyed using small-mesh netting, a method based on the index netting techniques described by Lester et al. (1991). Beginning in 2010, we began to assess fish populations using a new method, Summer Profundal Index Netting (SPIN; Sandstrom and Lester 2009). SPIN provides more statistically robust data and improves confidence in survey results (Jessup and Millar 2011).

We choose lakes for assessment based on the size of the active recreational fishery, the aboriginal subsistence fishery, and the commercial and domestic fisheries, as well as other available information. Lakes with heavy harvest pressure are surveyed on a regular basis.

The SPIN assessment involves setting gillnets at various sites in the lake and recording the catch and biological information about each fish caught. The survey usually tells us:

- relative abundance of lake trout as measured by an index (CPUE, or catch per unit effort);
- changes in relative abundance from previous surveys;
- the estimated density (number of lake trout per hectare) and abundance (number of lake trout) in the lake;
- length and weight of individual lake trout as well as other species captured; and

- age and diet of any fish killed.

Environment Yukon surveyed Ta'tla Mun using SPIN in 2011 and using small-mesh netting in 1999 and 2004. Differences in methodology between the 2 methods mean that results from the 2011 survey cannot be compared statistically with past surveys. Here we report the results of the 2011 SPIN survey and make only subjective comparisons with previous surveys.

Study Area

Ta'tla Mun is located approximately 30 km southeast of Pelly Crossing (Figure 1). The lake has an east-west aspect, is approximately 20 km long, and covers an area of 3,141 ha. Mean depth is about 27 m and maximum depth is 48 m. The lake is fed by Ta'tla Mun Creek, Mica Creek, and several other unnamed creeks. The lake is drained by Mica Creek, which flows northwest to the Pelly River, part of the Yukon River watershed. Several fish species are found in the lake, including lake trout, northern pike, burbot, lake whitefish, Arctic grayling, longnose sucker, and slimy sculpin. Broad whitefish were known to be present historically but have not been recorded in the lake since 1991.

The lake lies within the Traditional Territory of the Selkirk First Nation. There is no road access to the lake, but there is a trail from Pelly Crossing accessible by four-wheeler or snowmobile. The trail leads to a camp, belonging to Selkirk First Nation, situated at the western margin of the lake. The lake is historically and culturally significant to the First Nation and is designated as a Special Management Area

(Selkirk First Nation and Yukon Government 2001).

Historically, the lake has been used for subsistence, commercial, and recreational fishing. At one time there was a permanent First Nation fishing village situated at the western end of the lake, near the present Selkirk First Nation camp. The lake was also used for subsistence by the Hudson's Bay Company in the 19th century (Elson 1973). A commercial fishery was active on the lake during the Klondike gold rush and Ta'tla Mun was reportedly a major producer of fish for Dawson City (Seigel and McEwen 1984). There was a much smaller sporadic commercial fishery into the 1980s. There has been no commercial fishing on the lake since then.

The recreational fishery at Ta'tla Mun has been managed with Special Management Regulations since 2002; from 1991 to 2000 it was managed under Conservation Waters regulations. General catch and possession limits now apply but there is an aggregate catch limit of 5 fish (of any species) per day, whether the fish is kept or released. This unique regulation reflects the concerns brought forward in the Ta'tla Mun Special Management Area planning process regarding respect for the resource and excessive catch and release. Lake trout catch and possession limits are 3 and 6 respectively, and only one lake trout in possession may be over 65 cm. A special permit, available at no cost from Environment Yukon, is required to angle at Ta'tla Mun.

Methods

We sampled Ta'tla Mun 5 – 8 July 2011. We followed the Summer Profundal Index Netting (SPIN) methodology for lake trout assessment (Sandstrom and Lester 2009, Jessup and Millar 2011). We set a total of 63 nets, divided among 5 depth strata (Table 1) and each net was set for 2 hours. Each 64-meter gillnet was composed of 8 panels of monofilament web of different mesh sizes from 57 mm to 127 mm. The number of sets in each stratum was initially weighted by stratum surface area. However, we adjusted the final distribution of effort midway through the survey by concentrating on those strata with the highest catch rates. Initial set locations within each stratum were chosen using random point generation in ArcGIS 9.3. Any clumped distributions of points were dispersed manually to ensure coverage of the entire lake.

Catch per unit effort (CPUE), or the number of lake trout of “harvestable” size (300 mm and up) caught per net, was calculated for each stratum. We accounted for net selectivity (the fact that certain sizes of fish are more prone to capture than others) by applying a correction factor to each fish caught, based on its likelihood of capture (see Sandstrom and Lester, 2009 for a full rationale of net selectivity). The total stratified lakewide CPUE was calculated as:

$$\text{Lakewide CPUE} = \sum(\text{CPUE}_i \cdot W_i)$$

where:

CPUE_i = selectivity adjusted CPUE of stratum i

W_i = area of stratum i / lake area

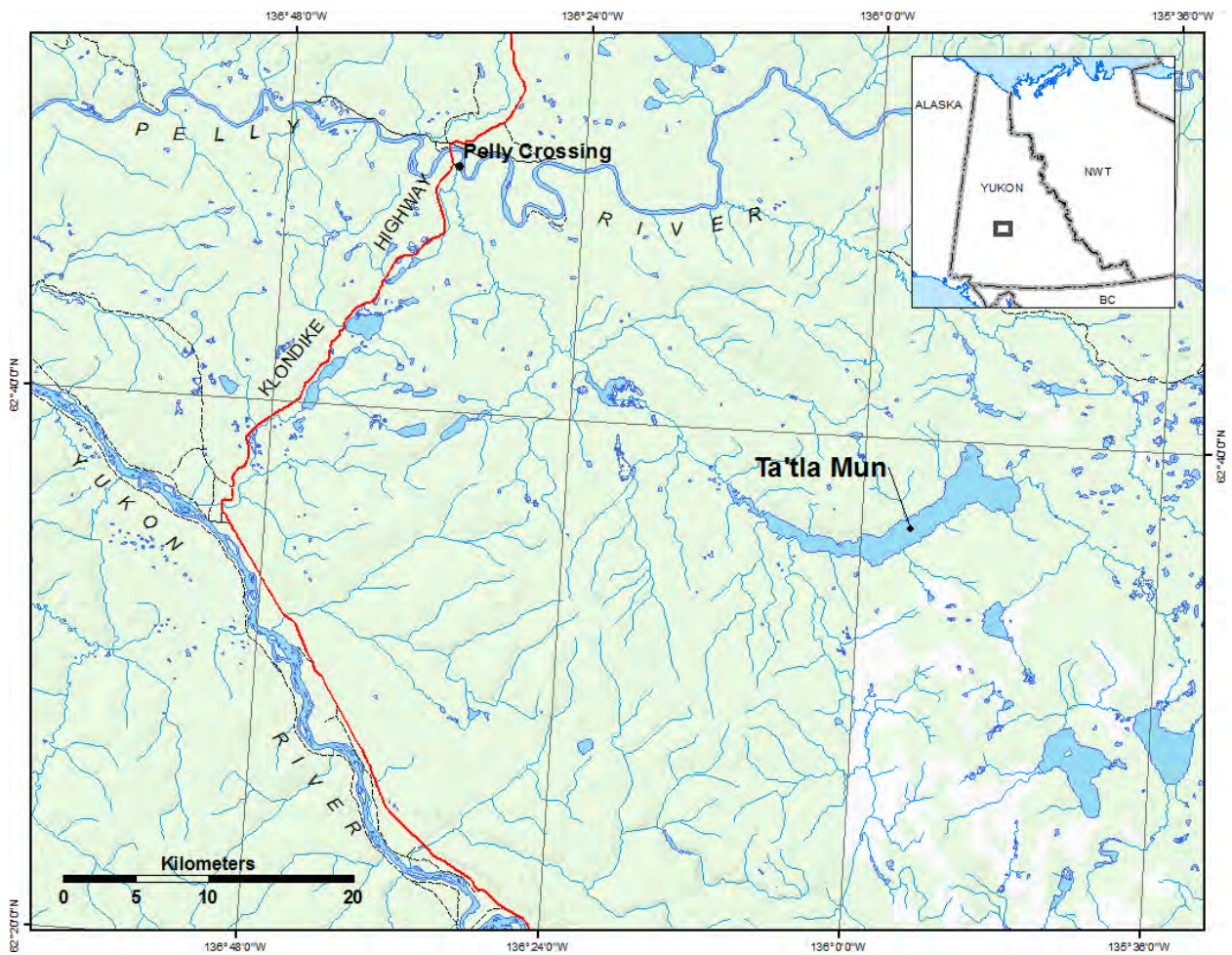


Figure 1. Location of Ta'tla Mun, Yukon.

Table 1. Effort breakdown by stratum.

Stratum (depth range)	Area		Number of Sets	
	Ha	%	No.	%
1 (0-10 m)	739	24	12	19
2 (10-20 m)	475	15	15	24
3 (20-30 m)	488	16	15	24
4 (30-40 m)	637	20	12	19
5 (40+ m)	803	26	9	14
Total	3142	100	63	100

CPUE is considered an index of abundance and changes in the CPUE are thought to reflect actual changes in the lake trout population. Therefore, CPUE can be compared between surveys and used to detect population growth or decline. The method excludes fish below 300 mm because they are not usually caught by anglers.

We then converted CPUE to density (fish/ha) based on an empirical relationship between CPUE and density that has been established for Ontario lakes. From this, we estimated absolute abundance (i.e., the total population size) by multiplying density by lake size (number of fish/ha • lake area (ha) = number of fish in lake). Before we can be fully confident in our estimates of density and absolute abundance, the relationship between CPUE and density must be verified for Yukon lakes

We used SPIN Support Systems Ver. 9.04 for calculations of CPUE, density, and population size, as well as predictions of sample size and power for future surveys. Temperature and dissolved oxygen profiles were taken using a multi-parameter probe (YSI 600QS; YSI Inc., Yellow Springs, OH).

We measured, weighed, and released all fish captured. Any fish that died was sampled for age (using otoliths or ear “bones”) and diet (stomach contents).

Results and Discussion

Temperature and Dissolved Oxygen

Temperature and dissolved oxygen are water quality variables critical to

lake trout and they determine suitable habitat within a lake. Following Clark et al. (2004), we define lake trout habitat as *suitable* where temperatures are less than 15°C and dissolved oxygen is greater than 4 mg/L. At temperatures above 15°C or dissolved oxygen less than 4 mg/L the habitat is *unsuitable*. The *optimal* temperature range for Yukon lake trout is between 2° and 12°C (Mackenzie-Grieve and Post 2006). The *optimal* dissolved oxygen level for lake trout is greater or equal to 7 mg/L (Evans 2005).

Temperature and dissolved oxygen profiles were taken on 8 July 2011 in the deepest part of the lake. The lake was thermally stratified with the thermocline (zone of steep temperature gradient) extending from the surface to about 13 m. Below this, temperature remained near 4°C to the bottom. Temperature was unsuitable for lake trout (>15°C) from the surface down to about 4 m, suitable (12 – 15°C) from 4 - 7 m, and optimal (<12°C) below about 7 m. The dissolved oxygen profile shows that oxygen declined with depth (characteristic of productive lakes), being optimal (>7 mg/L) above 33 m depth, suitable (4 – 7 mg/L) from 33 – 37 m depth, unsuitable (<4 mg/L) for lake trout below 37 m depth, and completely anoxic (without oxygen) below 40 m depth (Figure 2).

In summary, water conditions were suitable for lake trout between about 4 m and 37 m, encompassing all of stratum 2 and 3, and parts of stratum 1 and 4. Lake trout habitat was optimal between 7 m and 33 m. Stratum 5 was entirely unsuitable because of low oxygen conditions.

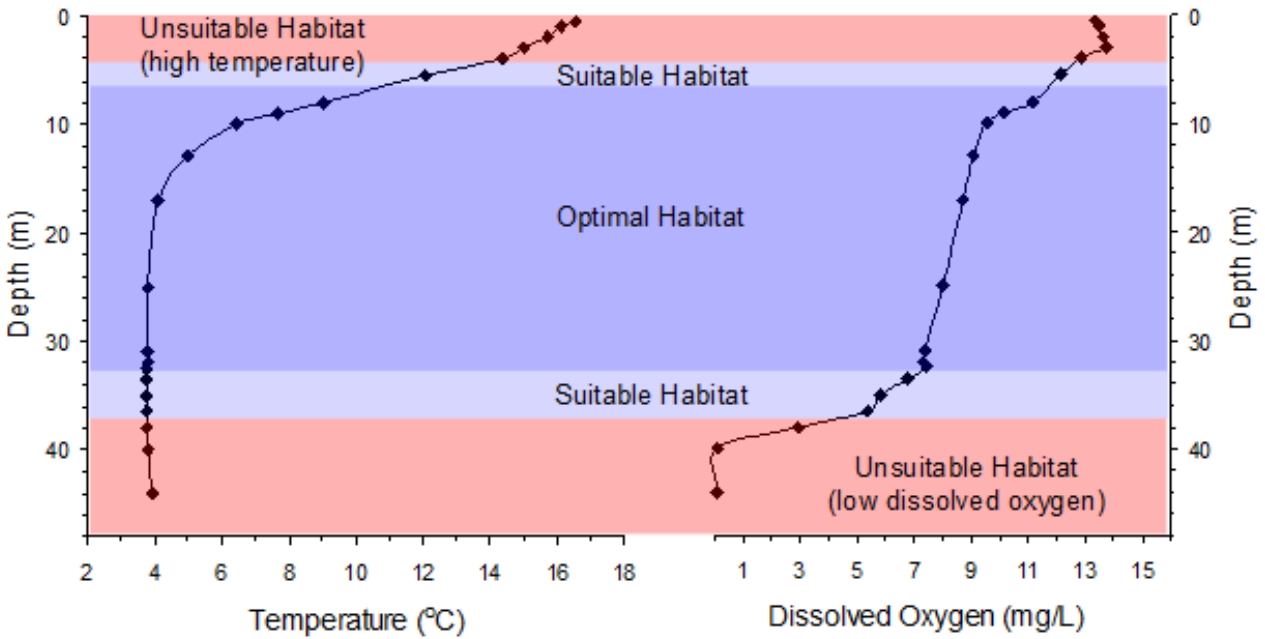


Figure 2. Temperature and dissolved oxygen profiles from 8 July, 2011 showing the locations of unsuitable, suitable, and optimal habitats.

CPUE, Density, and Population Size

We captured a total of 65 lake trout in this survey (see Appendix 2 for set and capture locations and Appendix 4 for capture details). Other species captured included lake whitefish, burbot, and northern pike (see Appendix 3 for data on lake whitefish). Total mortalities during the survey were 15 lake trout (23% mortality rate), and 492 lake whitefish (76%). All mortalities were provided to the Selkirk First Nation for distribution to citizens.

Adjusting the total catch for net selectivity bias (Sandstrom and Lester 2009) resulted in a selectivity-adjusted total catch of 76 lake trout (Table 2). After weighting the data by catch in each strata, we found a lake-wide CPUE of 1.00 (SE = 0.14).

Lake trout density was estimated at 4.1 lake trout/ha and lake-wide abundance was estimated at 12,937 lake trout (68% confidence interval: 7,570 – 18,515; Sandstrom and Lester 2009).

Table 2. Selectivity-adjusted catch by stratum.

Stratum (depth range)	# (%) Sample Sites	Catch	CPUE
1 (0-10 m)	12 (19%)	20	1.66
2 (10-20 m)	15 (24%)	35	2.30
3 (20-30 m)	15 (24%)	15	1.02
4 (30-40 m)	12 (19%)	6	0.49
5 (40+ m)	9 (14%)	0	0.00
Total	63 (100%)	76	1.00

Biological Characteristics

Average length, age, and diet can reveal whether fish in a lake are small-body lake trout that feed mostly on invertebrates or large-body lake trout that feed mostly on fish. The large-body, fish-eating form has a higher growth rate, a larger maximum size, and a larger size-at-maturity than the small-body, invertebrate-eating form.

Average length and weight of lake trout in Ta'tla Mun were 671 mm and 4,250 g respectively. The length distribution of lake trout captured is presented in Figure 3. Mean age of lake trout was 22; the youngest was 12 and the oldest was 34. The two 12-year-old fish captured were both immature males; the rest of the catch was either mature, or maturity could not be determined. Therefore, age at maturity was roughly estimated to be 13 (although this is based on few data points). Growth appears to slow and lake trout appear to reach near-maximum size at age 25 (Figure 4). Only 15 lake trout were aged so

conclusions regarding growth and age-at-maturity are preliminary.

Stomachs retained for diet analysis from 15 lake trout in 2011 revealed that lake trout in Ta'tla Mun feed entirely on fish (Table 3). Both size and diet information suggest that the majority of fish in Ta'tla Mun are the large-body type.

Results from Previous Surveys

The small-mesh netting surveys in 1999 and 2004 found CPUE of 0.53 and 0.50 respectively. CPUE in both years was slightly higher than the Yukon average for lakes with large-body lake trout (0.41). An index netting survey was carried out in 1991 but results from this survey are only partially available. Overall, it found a healthy population of lake trout. These surveys used methodology that is quite different from the current methods in terms of set location, net materials and size, set duration, and total number of sets so we can only make subjective comparisons with this data.

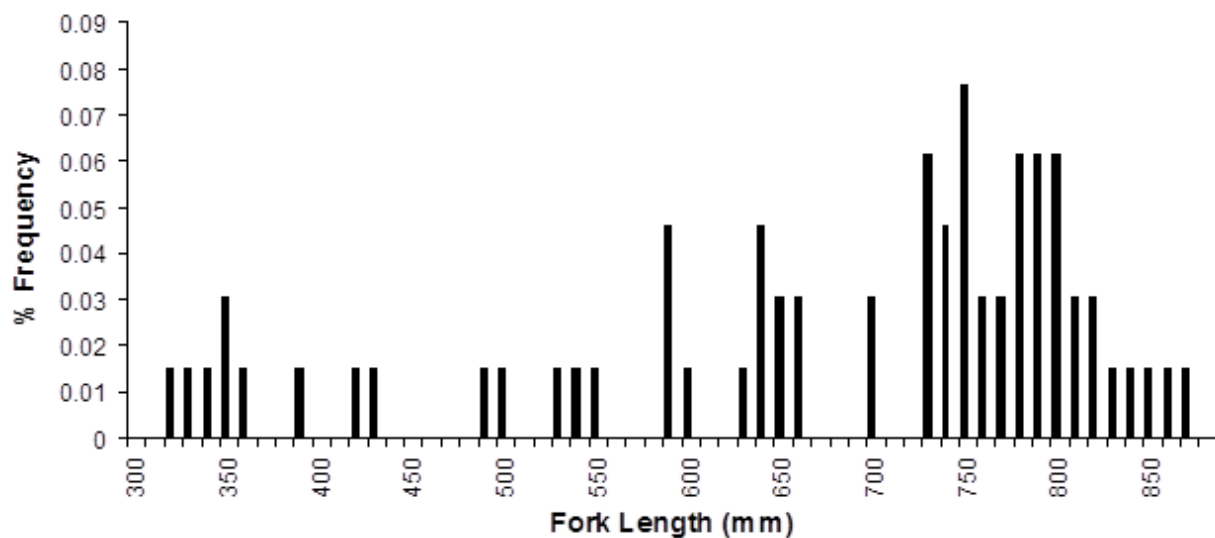


Figure 3. Length distribution of captured lake trout.

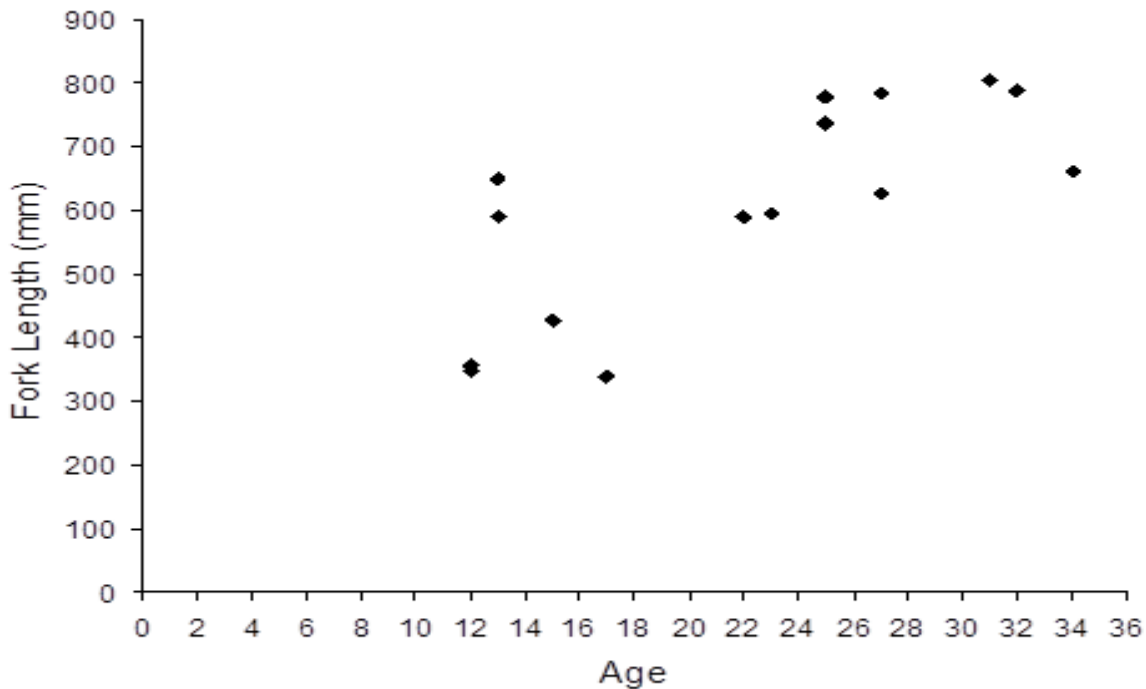


Figure 4. Length at age of sampled lake trout.

Table 3. Stomach contents of sampled lake trout.

	Volume of stomach contents
Lake whitefish	76.2%
Unidentified fish	19.0%
Slimy sculpin	4.8%

Population Status and Conclusions

Larger, less productive lakes with large-body lake trout usually have lower densities than smaller, more productive lakes with small-body lake trout (Burr 1997). Lakes that have predator species other than lake trout — like northern pike and burbot — are also expected to have lower densities than lakes with fewer predators (Carl et al. 1990).

Ta'tla Mun is a large lake and is relatively productive for its size (Appendix 1). It contains large-body lake trout as well as other top

predator species (northern pike and burbot). We compared density to other large-body lake trout lakes with similar fish communities sampled with SPIN (Sekulmun, Ethel, and Tarfu lakes; Appendix 1). We found that Ta'tla Mun had a high density relative to these lakes. This result was expected. Ethel and Tarfu Lakes have very low densities of lake trout and are considered depleted. Sekulmun Lake is considered healthy, but is less productive and has a naturally low density of lake trout.

Based on the results of the 2011 survey, and in the context of the lakes surveyed to date, the lake trout population in Ta'tla Mun is abundant and healthy. This survey also captured large numbers of the lake trout's main prey item, lake whitefish, indicating that prey is abundant and that the system overall is productive (Appendix 4). Previous small-mesh netting surveys also found a healthy population of lake trout, reporting a higher than average CPUE when compared to similar lakes.

Future Surveys

Because we found the population to be healthy, we are most interested in being able to detect future population declines that might require management action. To facilitate responsive management, we target the ability to detect 25% changes in CPUE with a power of 80%. Power refers to the probability of detecting a change when that change is real. In other words, we want to have an 80% chance to detect a 25% decline in CPUE.

At the current sample size ($n = 63$ net sets), we have a predicted power of 57% to detect future declines in CPUE of 25%. Power can be increased by increasing the sample size, reducing the variation in catch data, or relaxing the magnitude of change to be detected. Increasing the sample size to 85 net sets in future years should allow us to detect declines of 30% in CPUE with 80% power.

Additionally, focusing sampling effort on strata with the highest catch rates could increase future surveys' power to detect change. In 2011, dissolved oxygen profiles were not taken until near the end of the survey, resulting in wasted effort in the deepest part of the lake (stratum 5) where dissolved oxygen conditions were too low for lake trout. Temperature and dissolved oxygen profiles should be taken before the survey begins in order to better focus sampling effort.

One additional consideration is that the number of sets that could be performed daily was limited by extremely high catch of lake whitefish (651 fish). In future SPIN surveys of lakes with extremely high lake whitefish densities, each survey crew should expect to do only 8 sets per day, and should be prepared to sample and process large numbers of whitefish.

Results of the 2011 SPIN survey demonstrate healthy and abundant lake trout and lake whitefish populations in Ta'tla Mun. Unless lake conditions or fish harvest patterns show evidence of change, we do not foresee a need for a repeat SPIN survey of Ta'tla Mun in the near future.

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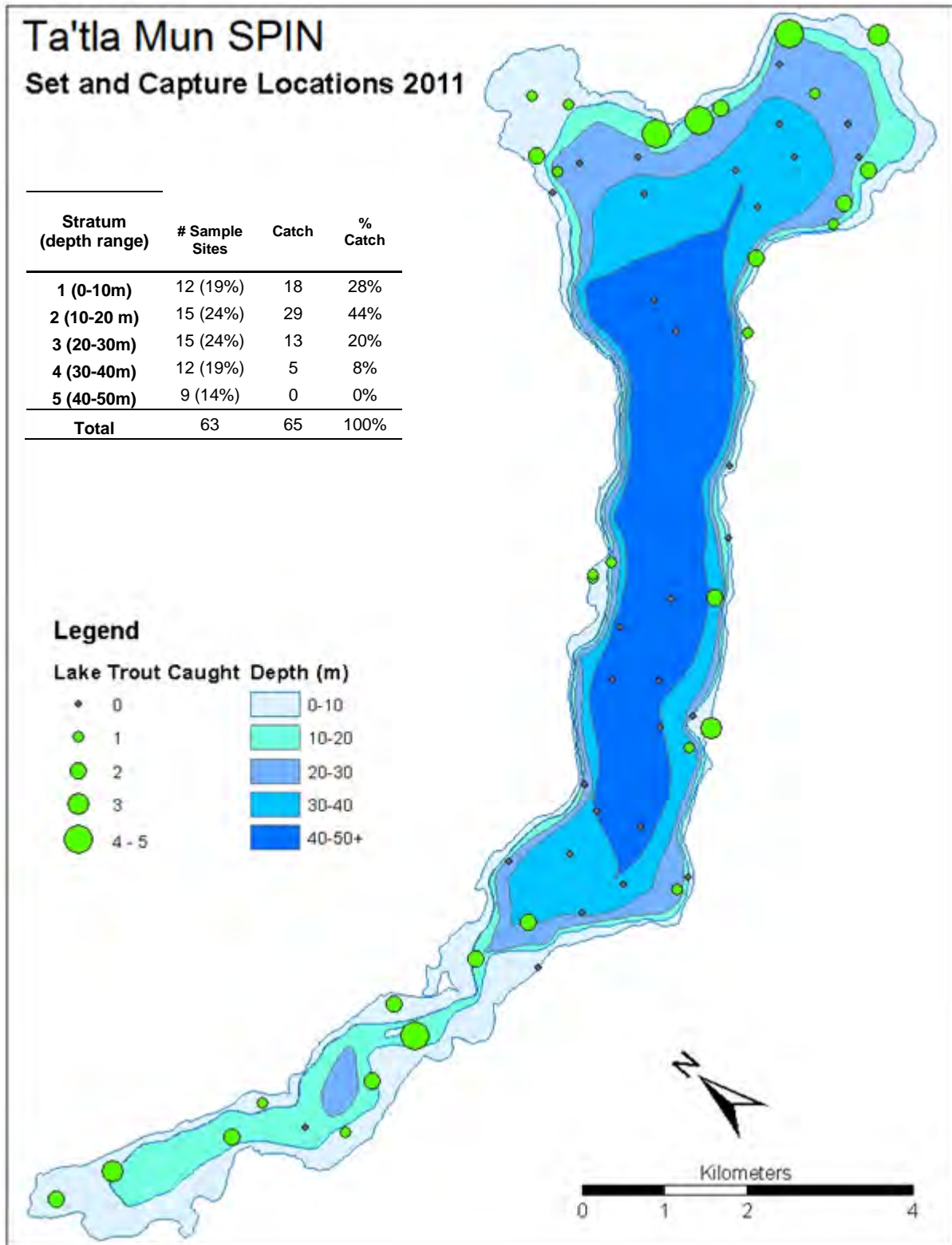
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APPENDIX 1 – Estimated CPUE (SPIN) and density from Yukon lakes to date.

Lakes are arranged in descending order of lake trout density (last column). Information on lake trout morphology and life history (small body vs. large body), and the presence of other top predators is included. Lake productivity refers to the annual maximum sustainable yield of all fish in kilograms per hectare. It is estimated following the method proposed by Schlesinger and Regier (1982) of relating mean annual air temperature to the morphoedaphic index (Ryder 1965). This information is presented so that comparisons can be made between lakes with similar characteristics.

Lake	Lake Characteristics				SPIN Results		
	Surface Area (ha)	Productivity (kg fish / ha)	Lake Trout Morphology	Other Top Predators	Year	CPUE	Density (fish/ha)
Caribou	51	3.89	Small body	None	2011	3.63	53.2
Lewes	131	3.17	Small body	None	2010	3.31	48.6
Fish	1386	2.44	Small body	None	2009	2.64	38.9
Kathleen	3398	1.87	Small body	None	2011	2.11	31.2
Louise (Jackson)	68	3.27	Small body	Rainbow trout	2011	2.02	29.8
Fish	1386	2.44	Small body	None	2010	2.01	29.7
Kathleen	3398	1.87	Small body	None	2010	1.94	28.6
Ta'tla Mun	3265	2.05	Large body	Pike/burbot	2011	1.00	4.1
Sekulmun	4985	1.16	Large body	Pike/burbot	2010	0.88	3.7
Ethel	4610	1.42	Large body	Pike/burbot	2011	0.30	2.0
Tarfu	405	2.74	Large body	Pike	2010	0.20	1.7
Pine	603	2.87	Small body	Pike/burbot	2010	0.08	1.5
Snafu	284	3.54	Large Body	Pike	2010	0	0

APPENDIX 2 – Set and capture locations (non-adjusted catch data), 2011 Ta'tla Mun SPIN



APPENDIX 3 – Lake whitefish data, 2011 Ta'tla Mun SPIN

Lake whitefish are important in Ta'tla Mun. They are harvested for subsistence by members of the Selkirk First Nation and they are also the main prey species of lake trout and other predators. The SPIN methodology is designed specifically for lake trout abundance and density, but can give some information on the relative abundance of other cold-water species, such as lake whitefish. Because of the high variability in whitefish catch data, SPIN may not be appropriate for detecting changes in abundance of species other than lake trout.

A total of 651 lake whitefish were captured in this survey. Lakewide

CPUE of lake whitefish (calculated the same as for lake trout but without the selectivity correction) was 10.16. This is extraordinarily high when compared to the next largest lake whitefish CPUE recorded in Yukon to date of 4.69 (Snafu Lake). However, to date only 5 SPIN surveys have captured lake whitefish, so there is a small set of lakes among which comparisons can be made. An established relationship between lake whitefish CPUE and density does not exist (as it does for lake trout), so estimates of density and population size cannot be accurately made. However, the high CPUE indicates a healthy population of lake whitefish in Ta'tla Mun. Biological data (age and length, Figures 3.1-3.3) suggest a stable lake whitefish population. Data on burbot and pike are not presented due to low sample sizes.

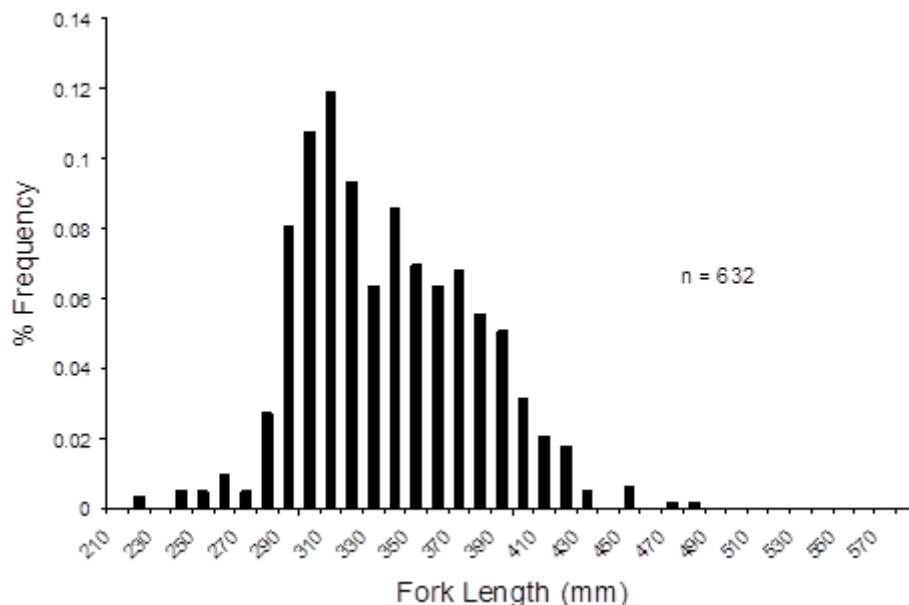


Figure 3.1. Length distribution of lake whitefish captured in the 2011 SPIN survey at Ta'tla Mun. Mean length was 335 mm and modal length was 310 mm; 632 of the 651 lake whitefish captured were measured.

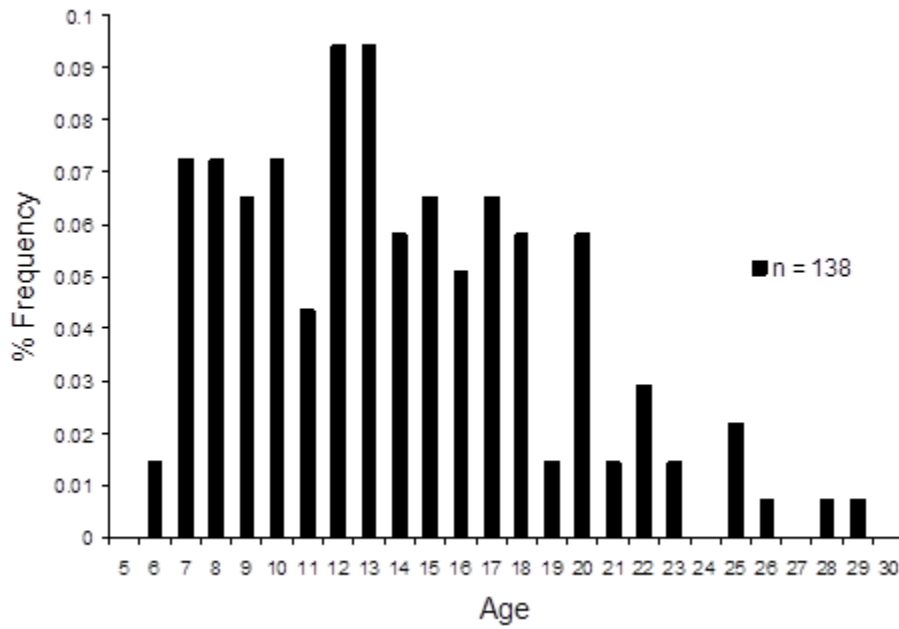


Figure 3.2. Age distribution of 138 lake whitefish captured in the 2011 SPIN survey at Ta'tla Mun. Mean age was 14, modal age was 12, and maximum age was 29. 50% of lake whitefish at age 8 were mature, and by age 13, 100% of lake whitefish were mature.

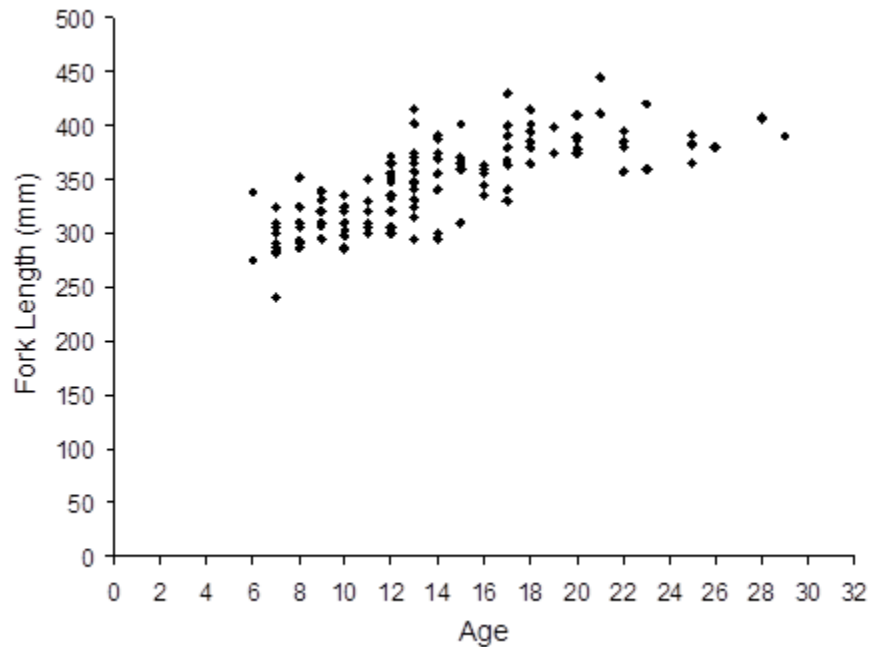


Figure 3.3. Length at age of lake whitefish captured in the 2011 SPIN survey at Ta'tla Mun. Lake whitefish appear to attain a near-maximum size at age 17.

APPENDIX 4 – Capture details, 2011 Ta'tla Mun SPIN

Date	Effort (Set #)	Stratum	¹ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	1	2	LW	335	500	D	F
July 5, 2011	1	2	LW	360	550	D	F
July 5, 2011	1	2	LW	420	1050	D	M
July 5, 2011	1	2	LW	445	1250	D	M
July 5, 2011	1	2	LW	390	1000	D	F
July 5, 2011	1	2	LW	360	700	D	F
July 5, 2011	1	2	LW	415	1000	D	F
July 5, 2011	1	2	LW	375	650	D	F
July 5, 2011	1	2	LT	495	400	R	
July 5, 2011	1	2	LT	740	5100	R	
July 5, 2011	1	2	LT	730	5300	R	
July 5, 2011	1	2	LW	320	600	RP	
July 5, 2011	1	2	LW	360	650	RP	
July 5, 2011	1	2	LW	320	500	RP	
July 5, 2011	1	2	LW	335	500	RP	
July 5, 2011	1	2	LW	320	450	RP	
July 5, 2011	1	2	LW	320	450	RP	
July 5, 2011	1	2	LW	325	400	RP	
July 5, 2011	2	2	LW	410	1000	D	
July 5, 2011	2	2	LW	320	500	D	
July 5, 2011	2	2	LW	305	500	D	
July 5, 2011	2	2	LW	291	350	D	
July 5, 2011	2	2	LW	305	400	D	
July 5, 2011	2	2	LW	255	250	D	
July 5, 2011	2	2	LW	377	800	D	
July 5, 2011	2	2	LW	345	600	D	
July 5, 2011	2	2	LT	750	5500	R	
July 5, 2011	2	2	LW	280	300	R	
July 5, 2011	2	2	LW	375	550	R	
July 5, 2011	2	2	LW	295	400	R	
July 5, 2011	2	2	LW	355	500	R	
July 5, 2011	2	2	LW	290	300	R	
July 5, 2011	2	2	LW	370	700	R	
July 5, 2011	2	2	LT	800	6000	RP	
July 5, 2011	2	2	LW	305	400	RP	

¹ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	² Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	2	2	LW	320	450	RP	
July 5, 2011	3	2	LW	420	1000	D	
July 5, 2011	3	2	LW	240	200	D	
July 5, 2011	3	2	LW	365	700	D	
July 5, 2011	3	2	LW	285	400	D	
July 5, 2011	3	2	LW	278	300	D	
July 5, 2011	3	2	LW	445	1400	D	
July 5, 2011	3	2	LW	355	700	D	
July 5, 2011	3	2	LW	340	600	D	
July 5, 2011	3	2	LW	300	400	D	
July 5, 2011	3	2	LW	255	300	D	
July 5, 2011	3	2	LW	270	300	D	
July 5, 2011	3	2	LW	NA	NA	D	
July 5, 2011	3	2	LW	NA	NA	D	
July 5, 2011	3	2	LW	NA	NA	D	
July 5, 2011	3	2	LW	NA	NA	D	
July 5, 2011	3	2	LW	NA	NA	D	
July 5, 2011	3	2	LW	NA	NA	ESC	
July 5, 2011	3	2	LW	NA	NA	ESC	
July 5, 2011	3	2	LW	285	300	RP	
July 5, 2011	3	2	LW	345	450	RP	
July 5, 2011	3	2	LW	300	300	RP	
July 5, 2011	3	2	LW	300	300	RP	
July 5, 2011	3	2	LW	380	600	RP	
July 5, 2011	3	2	LW	NA	NA	RP	
July 5, 2011	3	2	LW	NA	NA	RP	
July 5, 2011	4	1	LW	330	500	D	
July 5, 2011	4	1	LW	310	400	D	
July 5, 2011	4	1	LW	335	500	D	
July 5, 2011	4	1	LW	320	500	D	
July 5, 2011	4	1	LW	335	500	D	
July 5, 2011	4	1	LW	310	400	D	
July 5, 2011	4	1	LW	220	100	D	
July 5, 2011	4	1	LW	360	600	D	
July 5, 2011	4	1	LW	340	500	D	
July 5, 2011	4	1	LW	280	300	D	
July 5, 2011	4	1	LW	320	400	D	

² LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	³ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	4	1	LW	285	300	D	
July 5, 2011	4	1	LW	275	300	D	
July 5, 2011	4	1	LW	285	300	D	
July 5, 2011	4	1	LW	345	500	D	
July 5, 2011	4	1	LW	290	300	D	
July 5, 2011	4	1	LW	345	600	D	
July 5, 2011	4	1	LW	290	300	D	
July 5, 2011	4	1	LW	330	500	D	
July 5, 2011	4	1	LW	340	600	D	
July 5, 2011	4	1	LW	290	300	D	
July 5, 2011	4	1	LW	280	300	D	
July 5, 2011	4	1	LW	270	300	D	
July 5, 2011	4	1	LW	380	600	D	
July 5, 2011	4	1	LW	290	300	D	
July 5, 2011	4	1	LW	410	1100	D	
July 5, 2011	4	1	LW	330	500	D	
July 5, 2011	4	1	LW	310	400	D	
July 5, 2011	4	1	LW	350	700	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	360	700	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	320	400	D	
July 5, 2011	4	1	LW	305	400	D	
July 5, 2011	4	1	LW	280	250	D	
July 5, 2011	4	1	LW	335	500	D	
July 5, 2011	4	1	LW	260	250	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	300	400	D	
July 5, 2011	4	1	LW	360	700	D	
July 5, 2011	4	1	LT	760	6000	R	
July 5, 2011	4	1	LT	750	5250	R	
July 5, 2011	4	1	LW	365	600	R	
July 5, 2011	4	1	LW	390	850	RP	
July 5, 2011	4	1	LW	410	1000	RP	
July 5, 2011	4	1	LW	290	800	RP	

³ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁴ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	4	1	LW	320	400	RP	
July 5, 2011	4	1	LW	400	800	RP	
July 5, 2011	35	1	LT	650	3000	D	M
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	311	NA	D	
July 5, 2011	35	1	LW	294	NA	D	
July 5, 2011	35	1	LW	313	NA	D	
July 5, 2011	35	1	LW	313	NA	D	
July 5, 2011	35	1	LW	323	NA	D	
July 5, 2011	35	1	LW	295	NA	D	
July 5, 2011	35	1	LW	NA	NA	D	
July 5, 2011	35	1	LW	353	NA	D	
July 5, 2011	35	1	LW	321		D	
July 5, 2011	35	1	LW	289		D	
July 5, 2011	35	1	LW	289		D	
July 5, 2011	35	1	LW	303		D	
July 5, 2011	35	1	LW	314		D	
July 5, 2011	35	1	LW	296		D	
July 5, 2011	35	1	LW	325		D	
July 5, 2011	35	1	LW	352		D	
July 5, 2011	35	1	LW	320		D	
July 5, 2011	35	1	LW	380		D	
July 5, 2011	35	1	LW	281		D	
July 5, 2011	35	1	LW	316		D	
July 5, 2011	35	1	LW	329		D	
July 5, 2011	35	1	LW	331		D	
July 5, 2011	35	1	LW	308		D	
July 5, 2011	35	1	LW	275		D	
July 5, 2011	35	1	LT	699	4400	R	
July 5, 2011	35	1	NP	869	6200	RP	
July 5, 2011	36	2	LW	373	300	D	
July 5, 2011	36	2	LW	388		D	
July 5, 2011	36	2	LW	332		D	

⁴ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁵ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	36	2	LT	637	3400	R	
July 5, 2011	36	2	LT	318	300	RP	
July 5, 2011	36	2	LW	295		RP	
July 5, 2011	36	2	LW	314	350	RP	
July 5, 2011	36	2	LW	378	700	RP	
July 5, 2011	36	2	LW	298	350	RP	
July 5, 2011	36	2	LW	323	400	RP	
July 5, 2011	36	2	LW	297	300	RP	
July 5, 2011	36	2	LW	324	400	RP	
July 5, 2011	36	2	LW	378	800	RP	
July 5, 2011	36	2	LW	295	350	RP	
July 5, 2011	36	2	LW	390	850	RP	
July 5, 2011	37	2	LT	736	4600	D	M
July 5, 2011	37	2	LT	805	6350	D	F
July 5, 2011	37	2	LW	387	800	D	
July 5, 2011	37	2	LW	317		D	
July 5, 2011	37	2	LW	343		D	
July 5, 2011	37	2	LW	307		D	
July 5, 2011	37	2	LW	339		D	
July 5, 2011	37	2	LW	301		D	
July 5, 2011	37	2	LW	295		D	
July 5, 2011	37	2	LW	330		D	
July 5, 2011	37	2	LW	320		D	
July 5, 2011	37	2	LW	312		D	
July 5, 2011	37	2	LW	331		D	
July 5, 2011	37	2	LW	283		D	
July 5, 2011	37	2	LW	354		D	
July 5, 2011	37	2	LT	813	7500	R	
July 5, 2011	37	2	LT	800	6850	R	
July 5, 2011	37	2	LT	836	7100	R	
July 5, 2011	37	2	LW	365	750	R	
July 5, 2011	37	2	LW	320	400	RP	
July 5, 2011	37	2	LW	306	350	RP	
July 5, 2011	37	2	LW	321	400	RP	
July 5, 2011	37	2	LW	330	425	RP	
July 5, 2011	38	1	LW	335		D	
July 5, 2011	38	1	LW	295		D	

⁵ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁶ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 5, 2011	38	1	LW	255		D	
July 5, 2011	38	1	LW	373		D	
July 5, 2011	38	1	LW	335		D	
July 5, 2011	38	1	LW	304		D	
July 5, 2011	38	1	LW	282		D	
July 5, 2011	38	1	LW	370		D	
July 5, 2011	38	1	LW	339		D	
July 5, 2011	38	1	LW	320		D	
July 5, 2011	38	1	LW	290		D	
July 5, 2011	38	1	LW	358		D	
July 5, 2011	38	1	LW	343		D	
July 5, 2011	38	1	LW	388		D	
July 5, 2011	38	1	LW	246		D	
July 5, 2011	38	1	LW	340		D	
July 5, 2011	38	1	LW	360		D	
July 5, 2011	38	1	LW	289		D	
July 5, 2011	38	1	LW	251		D	
July 5, 2011	38	1	LW	316		D	
July 5, 2011	38	1	LW	308	300	R	
July 5, 2011	38	1	LW	239	200	R	
July 5, 2011	38	1	LW	301	300	RP	
July 5, 2011	38	1	LW	292	300	RP	
July 5, 2011	38	1	LW	287	300	RP	
July 5, 2011	38	1	LW	300	300	RP	
July 5, 2011	38	1	LW	272	250	RP	
July 5, 2011	38	1	LW	312	300	RP	
July 5, 2011	38	1	LW	255	225	RP	
July 5, 2011	38	1	LW	300	350	RP	
July 5, 2011	38	1	LW	295	300	RP	
July 5, 2011	38	1	LW	352	450	RP	
July 5, 2011	38	1	LW	348	550	RP	
July 5, 2011	38	1	LW	362	800	RP	
July 5, 2011	38	1	LW	317	450	RP	
July 5, 2011	38	1	LW	302	300	RP	
July 6, 2011	5	3	LW	310	350	D	M
July 6, 2011	5	3	LW	365	700	D	F
July 6, 2011	5	3	LW	320	350	D	M

⁶ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁷ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 6, 2011	5	3	LW	290	300	D	F
July 6, 2011	5	3	LW	390	800	D	M
July 6, 2011	5	3	LW	380	800	D	F
July 6, 2011	5	3	LW	365	600	D	M
July 6, 2011	5	3	LW	370	650	D	F
July 6, 2011	5	3	LW	310	450	D	M
July 6, 2011	5	3	LW	365	600	D	F
July 6, 2011	5	3	LW	305	400	D	F
July 6, 2011	6	5	No Catch				
July 6, 2011	7	4	No Catch				
July 6, 2011	8	5	No Catch				
July 6, 2011	9	4	No Catch				
July 6, 2011	10	3	LW	385	800	D	F
July 6, 2011	10	3	LW	375	800	D	M
July 6, 2011	10	3	LW	410	1000	D	F
July 6, 2011	10	3	LW	370	700	D	F
July 6, 2011	10	3	LW	340	650	D	F
July 6, 2011	10	3	LW	335	500	D	M
July 6, 2011	10	3	LW	340	550	RP	
July 6, 2011	11	5	No Catch				
July 6, 2011	12	5	No Catch				
July 6, 2011	13	4	LT	590	2500	D	F
July 6, 2011	13	4	LT	350	450	D	M
July 6, 2011	14	3	LT	350	400	RP	
July 6, 2011	14	3	LW	355	500	RP	
July 6, 2011	39	4	LT	782	5650	D	F
July 6, 2011	39	4	LT	757	4900	R	
July 6, 2011	40	3	LW	400	1000	D	F
July 6, 2011	40	3	LW	365	800	D	M
July 6, 2011	40	3	LW	365	700	D	
July 6, 2011	40	3	LW	300	350	D	F
July 6, 2011	40	3	LW	325	400	D	F
July 6, 2011	40	3	LW	365	700	D	M
July 6, 2011	40	3	LT	725	5000	R	
July 6, 2011	40	3	LW	345	650	RP	
July 6, 2011	40	3	LW	370	750	RP	
July 6, 2011	40	3	LW	275	300	RP	

⁷ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁸ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 6, 2011	40	3	LW	349	650	RP	
July 6, 2011	40	3	LW	374	750	RP	
July 6, 2011	40	3	LW	385	300	RP	
July 6, 2011	41	5	No Catch				
July 6, 2011	42	4	No Catch				
July 6, 2011	43	4	No Catch				
July 6, 2011	44	5	No Catch				
July 6, 2011	45	4	LT	545	1800	R	
July 6, 2011	45	4	LW	365	600	R	
July 6, 2011	46	1	LW	286	300	D	F
July 6, 2011	46	1	LW	287	300	D	M
July 6, 2011	46	1	LW	402	900	D	M
July 6, 2011	46	1	LW	307	400	D	F
July 6, 2011	46	1	LW	310	350	D	M
July 6, 2011	46	1	LW	331	500	D	F
July 6, 2011	46	1	LW	382	650	D	F
July 6, 2011	46	1	LW	338	500	D	F
July 6, 2011	46	1	LW	284	300	D	F
July 6, 2011	46	1	LW	325	400	D	
July 6, 2011	46	1	LW	300	300	D	
July 6, 2011	46	1	LW	275	250	D	
July 6, 2011	46	1	LW	360	650	D	
July 6, 2011	46	1	LW	385	900	D	
July 6, 2011	46	1	LW	365	700	D	
July 6, 2011	46	1	LW	420	1050	D	
July 6, 2011	46	1	LW	290	250	D	
July 6, 2011	46	1	LW	320	350	D	
July 6, 2011	46	1	LW	315	400	D	
July 6, 2011	46	1	LW	290	300	D	
July 6, 2011	46	1	LW	338	550	D	F
July 6, 2011	46	1	LW	300	350	R	
July 6, 2011	46	1	LW	398	1000	R	
July 6, 2011	46	1	LT	534	1650	RP	
July 6, 2011	46	1	LW	312	350	RP	
July 6, 2011	46	1	LW	324	400	RP	
July 6, 2011	46	1	LW	470	1550	RP	
July 6, 2011	46	1	LW	312	400	RP	

⁸ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	⁹ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 6, 2011	46	1	LW	388	800	RP	
July 6, 2011	46	1	LW	300	350	RP	
July 6, 2011	46	1	LW	283	350	RP	
July 6, 2011	46	1	LW	295	300	RP	
July 6, 2011	46	1	LW	290	300	RP	
July 6, 2011	46	1	LW	340	500	RP	
July 6, 2011	46	1	LW	311	400	RP	
July 6, 2011	46	1	LW	389	800	RP	
July 6, 2011	46	1	LW	345	600	RP	
July 6, 2011	46	1	LW	300	400	RP	
July 6, 2011	46	1	LW	320	500	RP	
July 6, 2011	46	1	LW	365	600	RP	
July 6, 2011	47	5	No Catch				
July 7, 2011	15	4	No Catch				
July 7, 2011	16	2	LT	660	3500	D	F
July 7, 2011	16	2	LW	335	500	D	M
July 7, 2011	16	2	LW	300	300	D	M
July 7, 2011	16	2	LW	390	750	D	F
July 7, 2011	16	2	LW	380	800	D	F
July 7, 2011	16	2	LW	300	350	D	M
July 7, 2011	16	2	LW			D	F
July 7, 2011	16	2	LW	310	400	D	M
July 7, 2011	16	2	LW	385	800	D	M
July 7, 2011	16	2	LW	390	850	D	F
July 7, 2011	16	2	LW	300	300	D	F
July 7, 2011	16	2	LT	660	3600	R	
July 7, 2011	16	2	LT	750	5600	R	
July 7, 2011	16	2	LT	330	350	R	
July 7, 2011	16	2	LW	420	1050	RP	
July 7, 2011	16	2	LW	310	400	RP	
July 7, 2011	16	2	LW	335	550	RP	
July 7, 2011	16	2	LW	310	400	RP	
July 7, 2011	16	2	LW	345	550	RP	
July 7, 2011	16	2	LW	330	450	RP	
July 7, 2011	16	2	LW	365	550	RP	
July 7, 2011	17	4	No Catch				
July 7, 2011	18	2	LW	310	350	D	M

⁹ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	¹⁰ Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 7, 2011	18	2	LT	785	7200	R	
July 7, 2011	18	2	LW	310	400	R	
July 7, 2011	18	2	LW	350	550	R	
July 7, 2011	19	3	LT	355	450	D	M
July 7, 2011	19	3	LT	590	2300	R	
July 7, 2011	19	3	LW	300	300	RP	
July 7, 2011	19	3	LW	345	650	RP	
July 7, 2011	19	3	LW	220	200	RP	
July 7, 2011	19	3	LW	365	800	RP	
July 7, 2011	19	3	LW	330	450	RP	
July 7, 2011	20	4	No Catch				
July 7, 2011	21	3	LW	360	650	RP	
July 7, 2011	21	3	LW	385	750	RP	
July 7, 2011	22	3	LW	300	310	D	F
July 7, 2011	22	3	LW	355	750	D	F
July 7, 2011	22	3	LW	330	450	D	F
July 7, 2011	22	3	LW	300	350	D	M
July 7, 2011	22	3	LW	350	550	D	F
July 7, 2011	22	3	LW	320	NA	D	M
July 7, 2011	22	3	LW	325	500	RP	
July 7, 2011	22	3	LW	300	400	RP	
July 7, 2011	22	3	LW	380	650	RP	
July 7, 2011	22	3	LW	305	300	RP	
July 7, 2011	22	3	LW	395	300	RP	
July 7, 2011	22	3	LW	350	600	RP	
July 7, 2011	22	3	LW	395	950	RP	
July 7, 2011	22	3	LW	350	200	RP	
July 7, 2011	22	3	LW	360	750	RP	
July 7, 2011	22	3	LW	390	1000	RP	
July 7, 2011	23	3	LW	NA	NA	D	
July 7, 2011	23	3	LW	NA	NA	D	
July 7, 2011	23	3	LW	315	450	D	
July 7, 2011	23	3	LW	310	350	D	
July 7, 2011	23	3	LW	340	550	D	
July 7, 2011	23	3	LW	335	400	RP	
July 7, 2011	23	3	LW	395	700	RP	
July 7, 2011	23	3	LW	370	600	RP	

¹⁰ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	11Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 7, 2011	23	3	LW	370	650	RP	
July 7, 2011	23	3	LW	305	300	RP	
July 7, 2011	23	3	LW	390	700	RP	
July 7, 2011	24	1	LT	340	3000	D	F
July 7, 2011	24	1	LW	330	450	D	
July 7, 2011	24	1	LW	305	300	D	
July 7, 2011	24	1	LW	290	300	D	
July 7, 2011	24	1	LW	360	650	D	
July 7, 2011	24	1	LW	320	400	D	
July 7, 2011	24	1	LW	300	300	D	
July 7, 2011	24	1	LW	345	550	D	
July 7, 2011	24	1	LW	340	550	D	
July 7, 2011	24	1	LW	350	650	D	
July 7, 2011	24	1	LW	310	350	D	
July 7, 2011	24	1	LW	295	300	D	
July 7, 2011	24	1	LW	345	550	D	
July 7, 2011	24	1	LW	350	500	D	
July 7, 2011	24	1	LW	305	300	D	
July 7, 2011	24	1	LW	340	500	D	
July 7, 2011	24	1	LW	310	400	D	
July 7, 2011	24	1	LW	350	550	D	
July 7, 2011	24	1	LW	310	400	D	
July 7, 2011	24	1	LW	315	400	D	
July 7, 2011	24	1	LW	285	250	D	
July 7, 2011	24	1	LW	320	450	D	
July 7, 2011	24	1	LW	305	300	D	
July 7, 2011	24	1	LW	350	450	D	
July 7, 2011	24	1	LW	345	500	D	
July 7, 2011	24	1	LW	315	450	D	
July 7, 2011	24	1	LW	290	300	D	
July 7, 2011	24	1	LW	350	650	D	
July 7, 2011	24	1	LW	292	350	D	
July 7, 2011	24	1	LT	750	5200	RP	
July 7, 2011	24	1	LW	395	950	RP	
July 7, 2011	24	1	LW			RP	
July 7, 2011	24	1	LW	340	600	RP	

¹¹ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
 R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	12Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 7, 2011	25	2	No Catch				
July 7, 2011	26	2	LT	640	3100	R	
July 7, 2011	26	2	LT	845	6850	R	
July 7, 2011	26	2	LW	290	300	RP	
July 7, 2011	26	2	LW	305	300	RP	
July 7, 2011	26	2	LW	305	300	RP	
July 7, 2011	26	2	LW	275	250	RP	
July 7, 2011	26	2	LW	310	400	RP	
July 7, 2011	26	2	LW	290	350	RP	
July 7, 2011	26	2	LW	280	250	RP	
July 7, 2011	26	2	LW	290	300	RP	
July 7, 2011	48	5	No Catch				
July 7, 2011	49	2	LW	395	800	D	M
July 7, 2011	49	2	LT	596	2650	D	F
July 7, 2011	49	2	LT	412	800	R	
July 7, 2011	49	2	LT	770	5300	R	
July 7, 2011	49	2	LT	788	4950	R	
July 7, 2011	49	2	LT	774	5400	RP	
July 7, 2011	49	2	LW	315	400	RP	
July 7, 2011	50	4	LW	310	400	D	M
July 7, 2011	50	4	LW	333	500	D	M
July 7, 2011	50	4	LW	285	250	RP	
July 7, 2011	51	5	No Catch				
July 7, 2011	52	3	LW	394	850	D	F
July 7, 2011	52	3	LW	313	400	D	
July 7, 2011	52	3	LW	400	900	D	
July 7, 2011	52	3	LW	341	550	D	
July 7, 2011	52	3	LW	367	700	D	
July 7, 2011	52	3	LW	335	500	D	
July 7, 2011	52	3	LW	300	350	R	
July 7, 2011	52	3	LT	775	5900	RP	
July 7, 2011	52	3	LW	369	700	RP	
July 7, 2011	52	3	LW	375	800	RP	
July 7, 2011	52	3	LW	417	950	RP	
July 7, 2011	52	3	LW	357	600	RP	
July 7, 2011	52	3	LW	293	300	RP	

¹² LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	13Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 7, 2011	53	3	LW	311	300	RP	
July 7, 2011	53	3	LW	291	375	RP	
July 7, 2011	53	3	LW	298	350	RP	
July 7, 2011	54	3	LW	411	850	D	
July 7, 2011	54	3	LW	368	700	D	
July 7, 2011	54	3	LW	290	350	D	
July 7, 2011	54	3	LW	358	850	D	
July 7, 2011	54	3	LW	275	291	D	
July 7, 2011	54	3	LT	728	4000	R	
July 7, 2011	54	3	LT	798	5200	R	
July 7, 2011	54	3	LT	645	3150	RP	
July 7, 2011	54	3	LT	488	1450	RP	
July 7, 2011	54	3	LT	725	5150	RP	
July 7, 2011	54	3	LW	333	650	RP	
July 7, 2011	54	3	LW	305	400	RP	
July 7, 2011	54	3	LW	375	800	RP	
July 7, 2011	54	3	LW	398	900	RP	
July 7, 2011	55	4	No Catch				
July 7, 2011	56	3	LW	NA	NA	D	
July 7, 2011	57	1	LT	779	6000	D	F
July 7, 2011	57	1	LW	369	800	D	M
July 7, 2011	57	1	LW	290	300	D	M
July 7, 2011	57	1	LW	286	275	D	M
July 7, 2011	57	1	LW	402	950	D	F
July 7, 2011	57	1	LW	295	350	D	
July 7, 2011	57	1	LW	352	550	D	F
July 7, 2011	57	1	LW	281	300	D	F
July 7, 2011	57	1	LW	325	500	D	M
July 7, 2011	57	1	LW	390	950	D	
July 7, 2011	57	1	LW	375	800	D	
July 7, 2011	57	1	LW	309	400	D	
July 7, 2011	57	1	LW	317	450	D	
July 7, 2011	57	1	LW	335	500	D	
July 7, 2011	57	1	LW	288	300	D	
July 7, 2011	57	1	LW	333	450	D	
July 7, 2011	57	1	LW	398	900	D	
July 7, 2011	57	1	LW	392	850	D	

¹³ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	14Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 7, 2011	57	1	LW	325	500	D	
July 7, 2011	57	1	LW	298	325	D	
July 7, 2011	57	1	LW	304	350	D	
July 7, 2011	57	1	LW	282	350	D	
July 7, 2011	57	1	LW	331	500	D	
July 7, 2011	57	1	LT	746	5200	R	
July 7, 2011	57	1	LT	735	6150	R	
July 7, 2011	57	1	LW	308	400	RP	
July 7, 2011	57	1	LW	309	450	RP	
July 7, 2011	57	1	LW	287	300	RP	
July 7, 2011	57	1	LW	346	600	RP	
July 7, 2011	57	1	LW	286	350	RP	
July 7, 2011	57	1	LW	246	250	RP	
July 8, 2011	27	3	LW	330	500	D	M
July 8, 2011	27	3	LW	380	800	D	M
July 8, 2011	27	3	LW	310	800	D	M
July 8, 2011	27	3	LW	365	700	D	F
July 8, 2011	27	3	LW	320	350	D	F
July 8, 2011	27	3	LW	340	500	R	
July 8, 2011	27	3	BB	510	1800	RP	
July 8, 2011	27	3	LW	315	450	RP	
July 8, 2011	27	3	LW	390	300	RP	
July 8, 2011	27	3	LW	360	550	RP	
July 8, 2011	27	3	LW	350	350	RP	
July 8, 2011	28	2	LW	390	800	RP	
July 8, 2011	29	1	LW	355	650	D	M
July 8, 2011	29	1	LW			D	M
July 8, 2011	29	1	LW	320	350	D	F
July 8, 2011	29	1	LW	380	750	D	M
July 8, 2011	29	1	LW	305	350	D	M
July 8, 2011	29	1	LW	290	300	D	F
July 8, 2011	29	1	LW	315	350	D	F
July 8, 2011	29	1	LW	430	1100	D	F
July 8, 2011	29	1	LW	325	500	D	M
July 8, 2011	29	1	LW	360	550	D	F
July 8, 2011	29	1	LW			D	M
July 8, 2011	29	1	LW	390	100	D	F

¹⁴ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	15Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	29	1	LW	295	300	D	F
July 8, 2011	29	1	LW	295	300	D	M
July 8, 2011	29	1	LW	295	300	D	F
July 8, 2011	29	1	LW	350	600	D	F
July 8, 2011	29	1	LT	795	5800	R	
July 8, 2011	29	1	LW	340	550	R	
July 8, 2011	29	1	LW	340	500	R	
July 8, 2011	29	1	LW	335	500	R	
July 8, 2011	29	1	LW	310	500	R	
July 8, 2011	29	1	LW	295	350	R	
July 8, 2011	29	1	LW	350	500	RP	
July 8, 2011	29	1	LW	310	450	RP	
July 8, 2011	29	1	LW	310	450	RP	
July 8, 2011	29	1	LW	340	450	RP	
July 8, 2011	29	1	LW	280	300	RP	
July 8, 2011	29	1	LW	380	800	RP	
July 8, 2011	29	1	LW	350	500	RP	
July 8, 2011	29	1	LW	480	690	RP	
July 8, 2011	29	1	LW	280	250	RP	
July 8, 2011	29	1	LW	330	500	RP	
July 8, 2011	29	1	LW	290	320	RP	
July 8, 2011	29	1	LW	370	900	RP	
July 8, 2011	29	1	LW	450	1000	RP	
July 8, 2011	30	1	LW	380	800	D	F
July 8, 2011	30	1	LW	375	750	D	F
July 8, 2011	30	1	LW	370	750	D	F
July 8, 2011	30	1	LW	340	600	D	F
July 8, 2011	30	1	LW	310	350	D	M
July 8, 2011	30	1	LT	830	6900	R	
July 8, 2011	30	1	LT	780	5000	R	
July 8, 2011	30	1	LW	290	350	R	
July 8, 2011	30	1	LW	410	1000	R	
July 8, 2011	30	1	LW	390	1000	R	
July 8, 2011	30	1	LW	380	600	R	
July 8, 2011	30	1	LW	295	350	R	
July 8, 2011	30	1	LT	390	800	RP	
July 8, 2011	30	1	LW	415	1050	RP	

¹⁵ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	16Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	30	1	LW	330	550	RP	
July 8, 2011	30	1	LW	290	500	RP	
July 8, 2011	30	1	LW	390	1000	RP	
July 8, 2011	30	1	LW	360	660	RP	
July 8, 2011	31	2	LW	285	200	D	M
July 8, 2011	31	2	LW	365	600	D	M
July 8, 2011	31	2	LW	NA	NA	ESC	
July 8, 2011	31	2	LW	390	600	R	
July 8, 2011	31	2	LW	350	500	R	
July 8, 2011	31	2	LW	360	500	R	
July 8, 2011	31	2	LW	380	900	R	
July 8, 2011	31	2	LW	310	450	R	
July 8, 2011	31	2	LW	350	500	RP	
July 8, 2011	31	2	LW	380	700	RP	
July 8, 2011	31	2	LW	390	700	RP	
July 8, 2011	31	2	LW	350	500	RP	
July 8, 2011	31	2	LW	365	900	RP	
July 8, 2011	31	2	LW	365	900	RP	
July 8, 2011	31	2	LW	340	500	RP	
July 8, 2011	31	2	LW	365	900	RP	
July 8, 2011	32	2	LW	355	650	D	M
July 8, 2011	32	2	LW	340	850	D	F
July 8, 2011	32	2	LT	530	2000	R	
July 8, 2011	32	2	LT	870	8500	R	
July 8, 2011	32	2	LW	310	500	R	
July 8, 2011	32	2	LW	300	400	R	
July 8, 2011	32	2	LW	310	500	RP	
July 8, 2011	32	2	LW	380	900	RP	
July 8, 2011	32	2	LW	360	700	RP	
July 8, 2011	33	1	LW	340	550	D	M
July 8, 2011	33	1	LW	320	400	D	F
July 8, 2011	33	1	LW	320	400	D	F
July 8, 2011	33	1	LW	240	300	D	F
July 8, 2011	33	1	LW	305	300	D	M
July 8, 2011	33	1	LW	325	450	D	F
July 8, 2011	33	1	LW	360	650	D	F
July 8, 2011	33	1	LW	285	300	D	F

¹⁶ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	17Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	33	1	LT	700	4200	R	
July 8, 2011	33	1	LW	300	400	R	
July 8, 2011	33	1	LW	300	500	R	
July 8, 2011	33	1	LW	365	600	RP	
July 8, 2011	33	1	LW	290	300	RP	
July 8, 2011	33	1	LW	300	500	RP	
July 8, 2011	33	1	LW	400	1000	RP	
July 8, 2011	33	1	LW	300	550	RP	
July 8, 2011	33	1	LW	350	600	RP	
July 8, 2011	33	1	LW	300	500	RP	
July 8, 2011	33	1	LW	310	450	RP	
July 8, 2011	33	1	LW	310	550	RP	
July 8, 2011	33	1	LW	310	500	RP	
July 8, 2011	33	1	LW	300	500	RP	
July 8, 2011	33	1	LW	320	510	RP	
July 8, 2011	33	1	LW	300	500	RP	
July 8, 2011	33	1	LW	310	500	RP	
July 8, 2011	33	1	LW	300	600	RP	
July 8, 2011	33	1	LW	320	510	RP	
July 8, 2011	33	1	LW	310	500	RP	
July 8, 2011	34	1	LT	590	2200	D	F
July 8, 2011	34	1	LW	330	500	D	F
July 8, 2011	34	1	LW	385	800	D	F
July 8, 2011	34	1	LW	410	1050	D	M
July 8, 2011	34	1	LW	330	400	D	F
July 8, 2011	34	1	LW	340	550	D	M
July 8, 2011	34	1	LW	410	1050	D	M
July 8, 2011	34	1	LW	300	350	D	M
July 8, 2011	34	1	LW	350	500	D	M
July 8, 2011	34	1	LW	310	550	R	
July 8, 2011	34	1	LW	320	600	R	
July 8, 2011	34	1	LW	370	900	R	
July 8, 2011	34	1	LW	320	510	R	
July 8, 2011	34	1	LW	290	310	R	
July 8, 2011	34	1	LW	430	1200	R	
July 8, 2011	34	1	LW	250	300	RP	
July 8, 2011	34	1	LW	375	320	RP	

¹⁷ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	18Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	34	1	LW	355	700	RP	
July 8, 2011	34	1	LW	310	500	RP	
July 8, 2011	34	1	LW	310	500	RP	
July 8, 2011	34	1	LW	375	800	RP	
July 8, 2011	58	1	LT	626	3200	D	F
July 8, 2011	58	1	LW	331	500	D	M
July 8, 2011	58	1	LW	372	700	D	F
July 8, 2011	58	1	LW	293	300	D	UNK
July 8, 2011	58	1	LW	331	500	D	
July 8, 2011	58	1	LW	311	450	D	
July 8, 2011	58	1	LW	332	600	D	
July 8, 2011	58	1	LW	322	500	D	
July 8, 2011	58	1	LW	370	650	RP	
July 8, 2011	58	1	LW	444	1250	RP	
July 8, 2011	58	1	LW	304	300	RP	
July 8, 2011	58	1	LW	298	325	RP	
July 8, 2011	58	1	LW	358	700	RP	
July 8, 2011	58	1	LW	322	450	RP	
July 8, 2011	58	1	LW	351	700	RP	
July 8, 2011	58	1	LW	398	1000	RP	
July 8, 2011	58	1	LW	392	350	RP	
July 8, 2011	58	1	LW	314	450	RP	
July 8, 2011	58	1	LW	288	350	RP	
July 8, 2011	58	1	LW	304	400	RP	
July 8, 2011	58	1	LW	336	650	RP	
July 8, 2011	58	1	LW	298	350	RP	
July 8, 2011	58	1	LW	328	500	RP	
July 8, 2011	58	1	LW	321	450	RP	
July 8, 2011	58	1	LW	287	400	RP	
July 8, 2011	59	2	LT	428	1050	D	M
July 8, 2011	59	2	LT	811	6900	RP	
July 8, 2011	60	3	LW	415	900	D	
July 8, 2011	60	3	LT	632	3000	RP	
July 8, 2011	60	3	LW	299	350	RP	
July 8, 2011	61	1	LW	355	600	D	M
July 8, 2011	61	1	LW	407	110	D	F
July 8, 2011	61	1	LW	364	700	D	F

¹⁸ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
 R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	19Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	61	1	LW	357	500	D	M
July 8, 2011	61	1	LW	339	450	D	M
July 8, 2011	61	1	LW	297	400	D	M
July 8, 2011	61	1	LW	356	750	D	M
July 8, 2011	61	1	LW	325	400	D	M
July 8, 2011	61	1	LW	303	400	D	F
July 8, 2011	61	1	LW	401	900	D	M
July 8, 2011	61	1	LW	392	900	D	
July 8, 2011	61	1	LW	375	800	D	M
July 8, 2011	61	1	LW	268	300	D	
July 8, 2011	61	1	LW	407	1000	D	
July 8, 2011	61	1	LW	326	450	D	
July 8, 2011	61	1	LW	307	350	D	
July 8, 2011	61	1	LW	320	400	D	
July 8, 2011	61	1	LW	347	600	D	F
July 8, 2011	61	1	LW	351	550	D	F
July 8, 2011	61	1	LW	316	400	D	
July 8, 2011	61	1	LW	274	250	D	
July 8, 2011	61	1	LW	306	400	D	
July 8, 2011	61	1	LW	306	450	D	
July 8, 2011	61	1	LW	306	400	D	UNK
July 8, 2011	61	1	LW	389	850	D	F
July 8, 2011	61	1	LW	332	450	D	
July 8, 2011	61	1	LW	305	450	D	F
July 8, 2011	61	1	LW	274	250	D	UNK
July 8, 2011	61	1	LW	305	400	D	M
July 8, 2011	61	1	LT	854	7300	R	
July 8, 2011	61	1	LW	376	700	RP	
July 8, 2011	61	1	LW	387	900	RP	
July 8, 2011	61	1	LW	347	750	RP	
July 8, 2011	61	1	LW	338	600	RP	
July 8, 2011	61	1	LW	424	1150	RP	
July 8, 2011	61	1	LW	325	500	RP	
July 8, 2011	61	1	LW	305	350	RP	
July 8, 2011	61	1	LW	322	400	RP	
July 8, 2011	61	1	LW	350	400	RP	
July 8, 2011	61	1	LW	335	400	RP	

¹⁹ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped

Appendix 4 Continued

Date	Effort (Set #)	Stratum	20Species	Fork Length (mm)	Weight (g)	Fate	Sex
July 8, 2011	61	1	LW	344	500	RP	
July 8, 2011	62	3	LT	788	4750	D	UNK
July 8, 2011	62	3	LW	411	850	D	M
July 8, 2011	62	3	LW	360	650	D	
July 8, 2011	62	3	LW	391	900	D	
July 8, 2011	62	3	LW	295	300	D	
July 8, 2011	62	3	LW	357	700	D	M
July 8, 2011	62	3	LT	805	7000	RP	
July 8, 2011	62	3	LW	322	450	RP	
July 8, 2011	62	3	LW	309	500	RP	
July 8, 2011	63	2	LW	374	850	D	F
July 8, 2011	63	2	LW	368	700	D	F
July 8, 2011	63	2	LW	367	700	D	F
July 8, 2011	63	2	LW	398	1000	D	M
July 8, 2011	63	2	LW	387	750	D	M
July 8, 2011	63	2	LW	344	600	D	M
July 8, 2011	63	2	LW	402	950	D	F
July 8, 2011	63	2	LW	346	600	D	
July 8, 2011	63	2	LW	365	800	D	
July 8, 2011	63	2	LW	316	450	D	
July 8, 2011	63	2	LW	313	500	D	
July 8, 2011	63	2	LW	315	450	D	
July 8, 2011	63	2	LW	364	700	D	
July 8, 2011	63	2	LW	378	800	D	F
July 8, 2011	63	2	LW	363	700	D	M
July 8, 2011	63	2	LW	413	1000	D	
July 8, 2011	63	2	LW	379	800	D	
July 8, 2011	63	2	LW	388	900	D	F
July 8, 2011	63	2	LW	350	550	D	
July 8, 2011	63	2	LW	347	650	D	F
July 8, 2011	63	2	LT	764	4800	R	
July 8, 2011	63	2	LW	308	400	RP	
July 8, 2011	63	2	LW	366	800	RP	
July 8, 2011	63	2	LW	391	950	RP	
July 8, 2011	63	2	LW	292	400	RP	

²⁰ LT=lake trout; LW=round whitefish, BB=burbot, NP=northern pike
R=released; RP=released, poor condition; D=dead; ESC=escaped