Tahltan Lake Sockeye Smolt Enumeration and Sampling, 2016

(A study funded by the Northern Fund under the auspices of the Pacific Salmon Commission)

Final Report
February 2017

PSC NF-2016-I-23
DFO 57675

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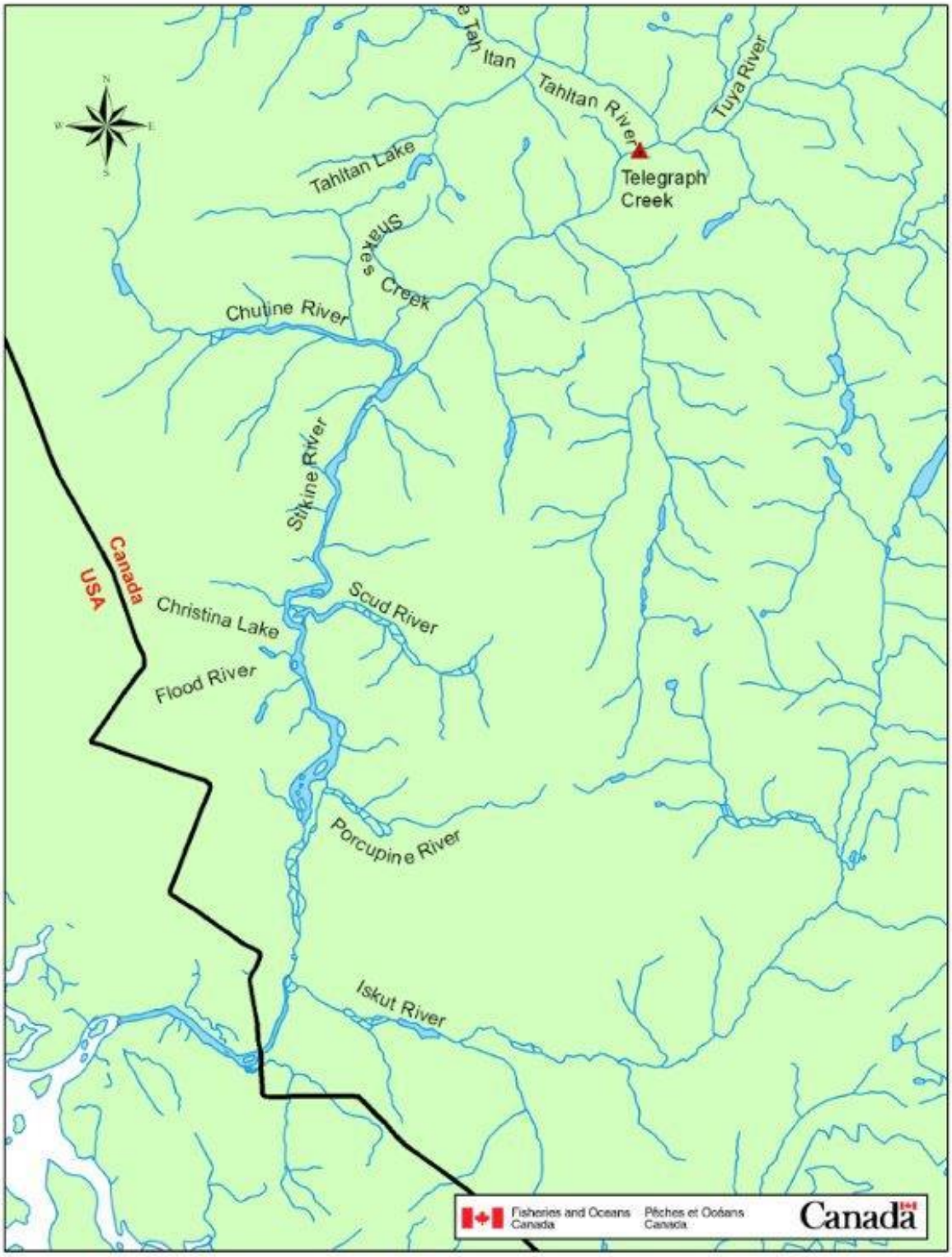


Executive Summary

In 2016 funding was received from the Northern Endowment Fund (NEF) under the umbrella of the Pacific Salmon Commission (PSC) to carry out the enumeration and sampling of sockeye smolt emigration from Tahltan Lake. An estimated total of 2,094,592 smolts were enumerated. A total of 530 representative daily samples were collected and used for recording length (mm), weight (grams), age (scale smears) and otolith analysis to generate wild/ enhanced survivorship ratios of: enhanced ~ 49.65% , wild ~ 50.35% . Daily readings were recorded for Tahltan Lake temperatures and staff gauge levels. The lake was also sampled for chlorophyll, phosphorus, Secchi depth, and zooplankton.

1.0 Introduction

Tahltan Lake is located in the Stikine River drainage in northwestern British Columbia. It is the largest contributor of sockeye salmon to the Stikine drainage. It makes up the largest component of the Stikine commercial and First Nation food fisheries.

The sockeye smolt enumeration program has been conducted by Fisheries & Oceans Canada annually at Tahltan Lake since 1984. The program is typically in operation from the first week in May to mid-June. The crew is made up of two Tahltan Fisheries Technicians and one Department of Fisheries & Oceans Canada (DFO) Aquatic Science Technician. The weir is monitored by the crew twenty-four hours a day once the smolts start migrating.

Note: all comparisons to 2016 in report will reference the 10 year average (2006–2015) unless otherwise identified.

2.0 Objectives

The objectives of the project as identified in the Detailed Proposal were as follows:

- To enumerate Tahltan Lake sockeye salmon smolts while the fish are in transit through a weir located downstream from the outlet of Tahltan Lake through May and June;
- To collect age (scales), stock id (enhanced vs. non enhanced via otolith analyses - the enhanced fish have otoliths that exhibit a unique growth ring laid down during the incubation period at Snettisham Hatchery through the joint Transboundary rivers sockeye enhancement program) and size information (fork length & weight) from a representative portion of the run;
- Tahltan Lake smolt counts will be used to forecast future adult sockeye salmon production and will guide management actions in subsequent years through abundance based management;
- Data gathered through this project will be used to determine appropriate fry stocking levels at Tahltan Lake as a result of the egg collection and incubation activities designed to boost adult production in the Stikine River through the joint Transboundary sockeye enhancement program.

3.0 Methods

The sockeye smolts that are emigrating out of the lake and into Johnny Tashoots creek are directed into two *wolf traps*. The traps are located approximately 75 feet downstream from the lake outlet. The smolts are funneled into the traps by means of wooden paneling that are affixed with small diameter vexar that the smolts cannot pass through. The panels are arranged in such a manner in the creek from left bank and right bank to form a v pattern downstream towards the traps.

The smolts are counted volumetrically when migrating in large numbers with a 25 litre round bucket which yields an estimated average count per one bucket via water displacement when smolts are added to the bucket. The average bucket size per day is calculated from the average fork-length of thirty randomly collected smolts from the daily migration which correlates with a pre-determined count for one bucket. When migration is slow the smolts are counted individually. Smolt migration numbers through the wolf traps are recorded hourly at the top of each hour and then totaled again for a daily twenty-four hour period.

Sockeye smolts are randomly collected throughout the day and placed into a holding pen beside the wolf traps. The number of smolts sampled per day is proportional to the daily run size with a goal of four-hundred samples overall that is representative of the total run.

Measurements are taken to the nearest millimeter for fork-length, weighed in grams for weight, two scale smears per sample for age, and heads collected for otolith analysis which would yield wild/ enhanced ratios for fry to smolt survivorship.

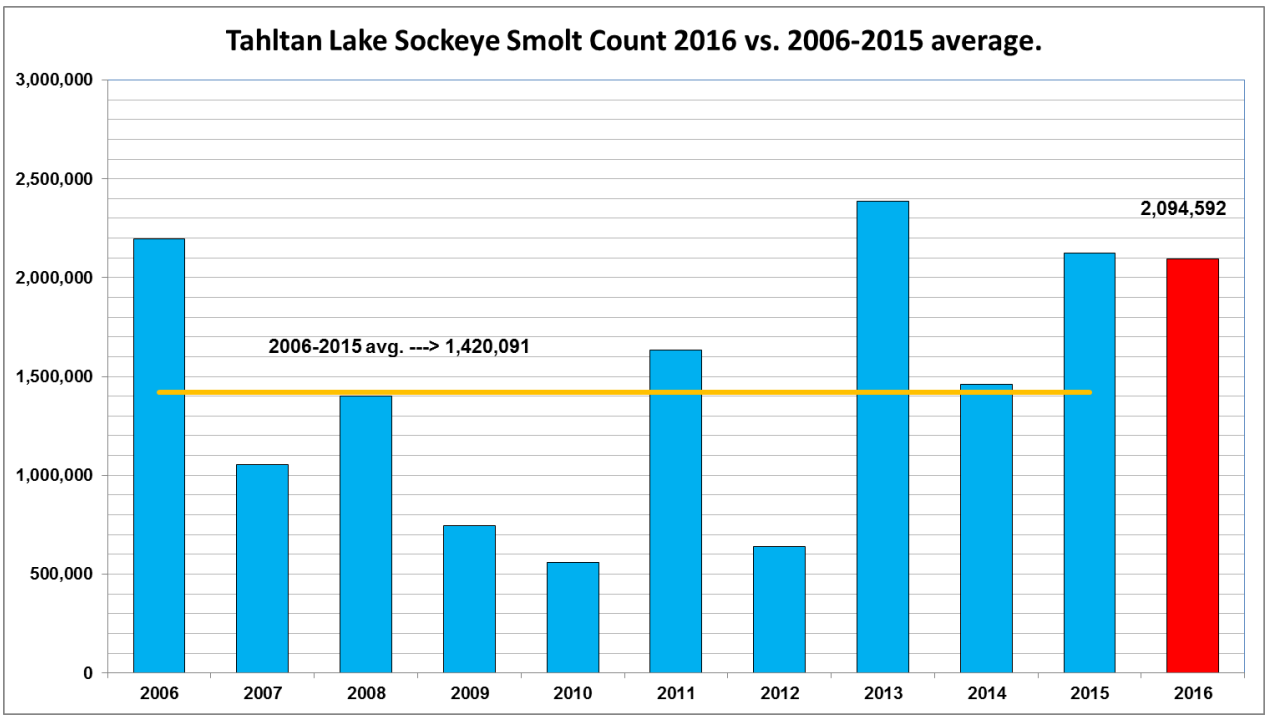
4.0 Results

The weir was installed on May 6th and was fish tight at 1900 hours. It was demobilized on June 9th at 1200 hours.

Counts:

The estimated count of smolts for 2016 is 2,094,592; this is roughly 32% above the ten year average count of 1,420,091.

Figure 2 Summary of the sockeye smolt count estimates at Tahltan Lake weir from 2006 – 2016.

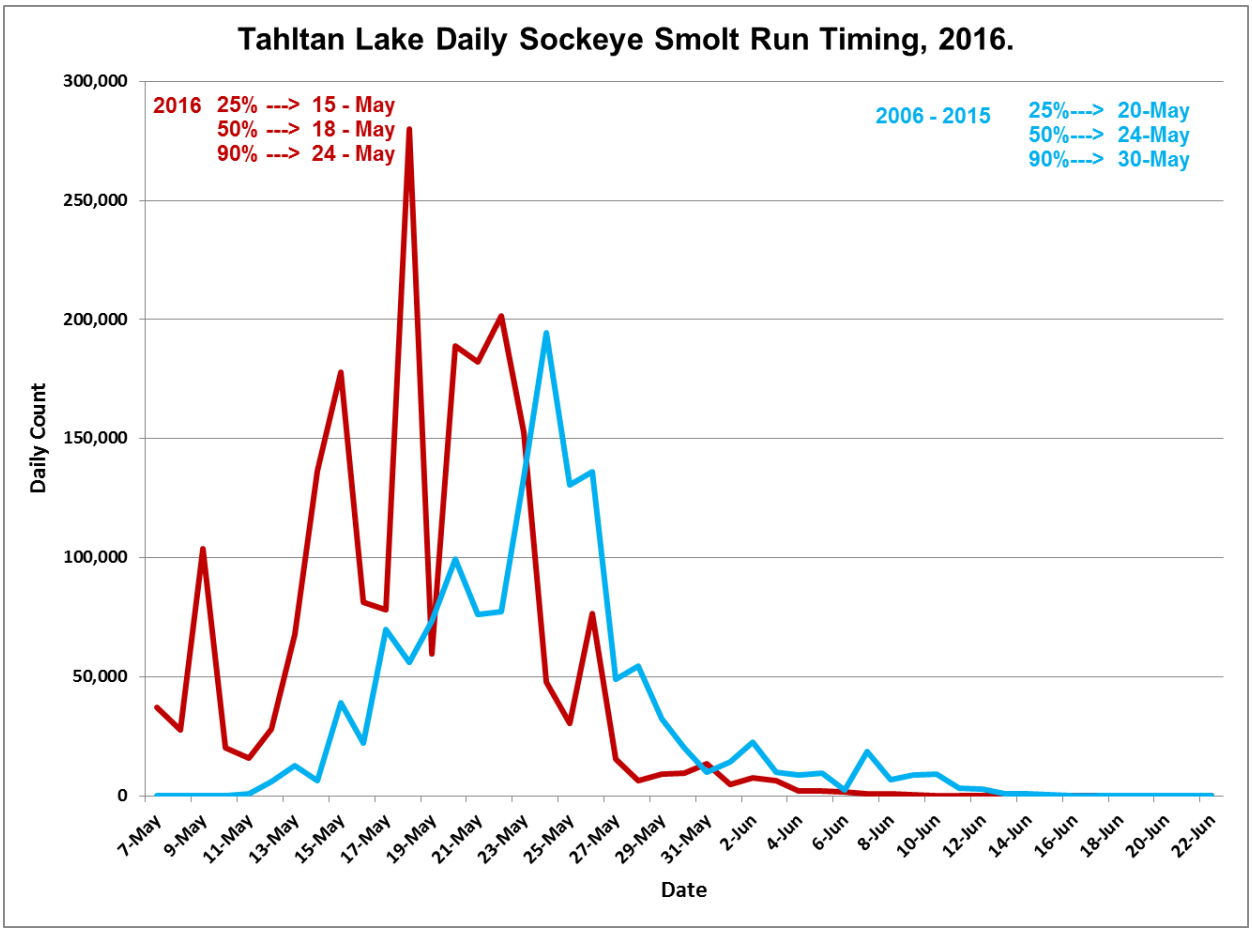


Run Timing:

The figure below summarizes the daily migration of sockeye smolts through the weir for 2016 and shows a comparison to the average run timing 2016 vs. 10 year average. The exact date of Tahltan Lake ice out is unknown for 2016 as the ice was out prior to arrival at camp on May 5th. This ice out is the earliest on record. The average ice out date from 2006–2015 is May 22nd. Below average winter snow pack and warm spring conditions likely contributed to the early ice out.

The 2016 smolt count was also early as shown in the figure below.

Figure 3 Summary of Tahltan Lake daily sockeye smolt run timing, 2016.



Water Temperature:

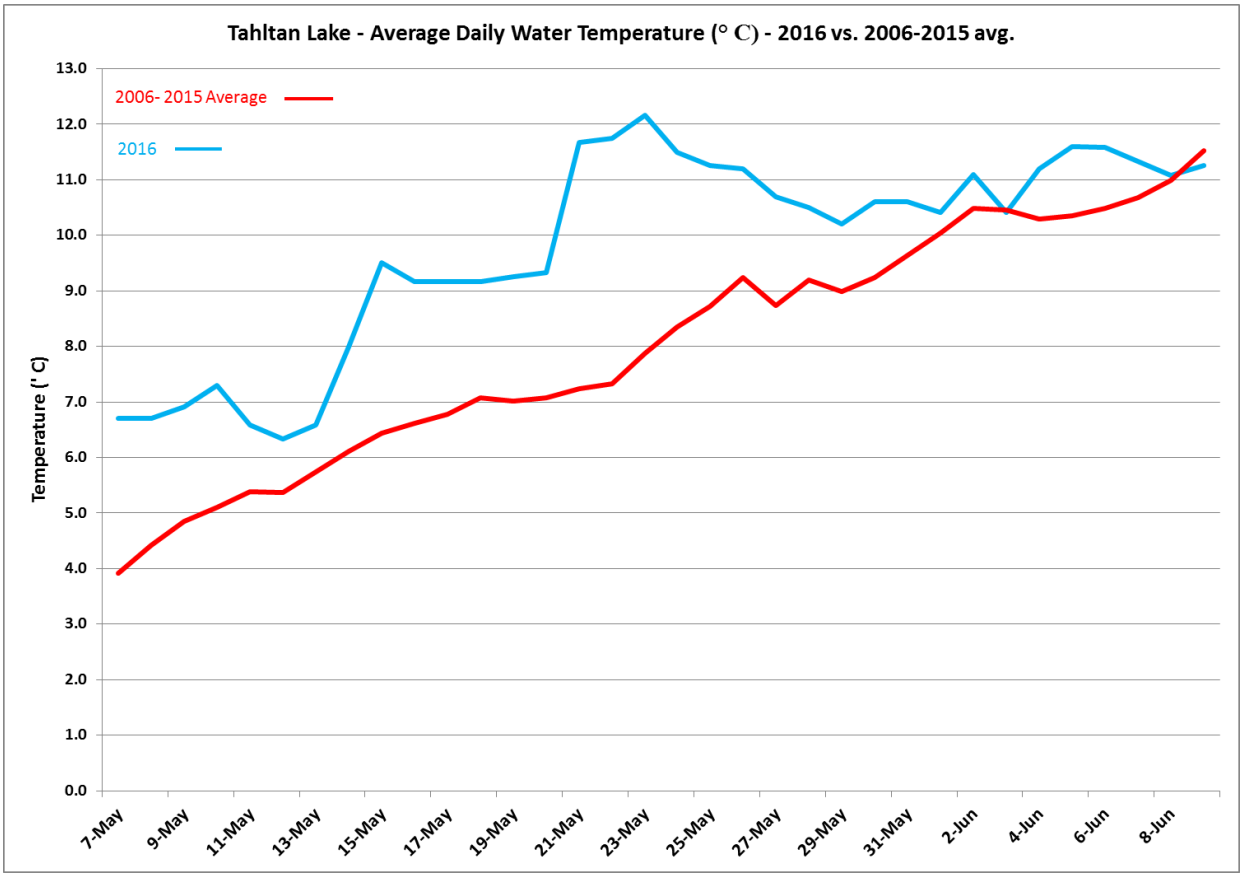
The table and figure below illustrate the daily/ monthly comparisons between 2016 Tahltan Lake water temperatures and the 10 year average (+/-). Daily temperatures are recorded with a hand held alcohol thermometer every four hours at the top of the hour (0400, 0800, 1200, 1600, 2000, and 2400) and have been recorded since 1984. In general water temperatures were significantly higher in 2016 when compared to the 10 year average with the biggest differences

occurring from May 21-24. The early ice out likely contributed to the above-average water temperatures early in the season.

Table 1 Summary of Tahltan Lake average daily water temperatures (Celsius) – 2016 vs. 10 year average.

Date	Temp. 2016	2006-2015 Avg.	(+/-)
7-May	6.7	3.9	2.8
8-May	6.7	4.4	2.3
9-May	6.9	4.8	2.1
10-May	7.3	5.1	2.2
11-May	6.6	5.4	1.2
12-May	6.3	5.4	1.0
13-May	6.6	5.7	0.8
14-May	8.0	6.1	1.9
15-May	9.5	6.4	3.1
16-May	9.2	6.6	2.6
17-May	9.2	6.8	2.4
18-May	9.2	7.1	2.1
19-May	9.3	7.0	2.2
20-May	9.3	7.1	2.3
21-May	11.7	7.2	4.4
22-May	11.8	7.3	4.4
23-May	12.2	7.9	4.3
24-May	11.5	8.4	3.2
25-May	11.3	8.7	2.5
26-May	11.2	9.2	2.0
27-May	10.7	8.7	2.0
28-May	10.5	9.2	1.3
29-May	10.2	9.0	1.2
30-May	10.6	9.2	1.4
31-May	10.6	9.6	1.0
1-Jun	10.4	10.0	0.4
2-Jun	11.1	10.5	0.6
3-Jun	10.4	10.5	0.0
4-Jun	11.2	10.3	0.9
5-Jun	11.6	10.4	1.3
6-Jun	11.6	10.5	1.1
7-Jun	11.3	10.7	0.7
8-Jun	11.1	11.0	0.1
9-Jun	11.3	11.5	-0.3

Figure 4 Summary of Tahltan Lake average daily water temperatures (Celsius) – 2016 vs. 10 year average.



Sampling:

A total of 530 representative daily samples were collected. The samples yielded scales, fork-lengths, weights, and heads. The scale samples were analyzed at the Pacific Biological Station in Nanaimo and generated ages of 98.5% one-year olds and 1.5% two year olds. The head (otolith) samples were analysed in the Whitehorse lab and generated ratios of: (2016) enhanced ~ 49.7%, wild ~ 50.3% vs. 10 year average of enhanced ~ 37.3%, wild ~ 62.7%.

The table below is a summary and comparison of ages, lengths, and weights of sockeye smolts for 2016 averages vs. 10 year averages. The 2016 average fork lengths for age 1 and 2 smolts were 5.9mm and 13.3mm longer than the 10 year averages. The 2016 average weights for age 1 and 2 smolts were also .99 grams and 3.60 grams heavier than the 10 year averages.

Table 2 Summary of Tahltan Lake sockeye smolt age, length and weight - 2016 averages vs. 10 year averages

Table 2: Tahltan Lake Sockeye Smolt Age (years), Length (mm), & Weight (grams).

Note: Scale analysis used for ages.

Note: Combined enhanced/ wild.

2016	Age	
Data	1+	2+
Average Weight	6.10	13.47
Average Fork Length	89.0	117.3

2006-2015	Age	
Data	1+	2+
Average Weight	5.11	9.87
Average Fork Length	83.1	104.0

Year - 2016 vs.	Age	
(2006-2015)	1+	2+
Weight (+/-)	0.99	3.60
Fork Length (+/-)	5.9	13.3

5.0 Budget Summary

As presented in Appendix 3, the expenditures of Northern Endowment Funds amounted to $40,062.00 which matched the budgeted amount. The 10% holdback of $4,006.20 is anticipated once the final project report is accepted by the Pacific Salmon Commission. A summary of Fund expenditures in relation to budgeted amounts is as follows:

Description	Budget (PSC)	Expenditure	Balance
Salary	15,135.00	16,171.45	-1,036.45
Salary EPB	3,027.00	3,230.00	-203.00
Air Charter	10,200.00	9,456.83	743.17
Travel	1,800.00	2,325.86	-525.86
Site Supplies & Materials	7,800.00	8,769.38	-969.38
Repairs & Maintenance	2,100.00	108.48	1,991.52
Grand Total	**40,062.00**	**40,062.00**	**0.00**

6.0 Conclusion

The program was completed within the timeframe of the project proposal. The count for 2016 was 2,094,592. The run timing was four days earlier in 2016 than 2015 and was most likely due to the early ice out date as the ice was out prior to arrival at the lake on May 5th which was the earliest ice out date recorded on record. A total a 530 representative samples were collected. Scale analysis yielded ages of 98.5% one year olds, 1.5% two year olds, and 0% 3 year olds.

The head (otolith) samples were analysed in the Whitehorse lab and generated enhanced/ wild ratios of: enhanced ~ 49.7%, wild ~ 50.3%. Tahltan Lake water temperatures were 1–4 °C higher than the 10 year average daily temperatures. This was likely a result of the early ice out date, below average winter snow pack and seasonally above average air temperatures. The Tahltan Lake smolt count will be used to forecast future adult sockeye salmon production and will guide management actions in subsequent years through abundance based management. The count and enhanced/wild ratios will be used to determine appropriate fry stocking levels at Tahltan Lake as a result of the egg collection and incubation activities designed to boost adult production in the Stikine River through the joint Transboundary sockeye enhancement program.

7.0 Acknowledgements

Cheri Frocklage – Tahltan Fisheries Co-ordinator

Michael Nole – Tahltan Fisheries Technician

John Nole – Tahltan Fisheries Technician

Shelby Marion – Tahltan Fisheries Technician

Lake Else Air LTD. – Air Charter

Tsayta Air LTD. – Air Charter

Yukon Transboundary Rivers Area Administration and Expediting Staff

8.0 Appendix

Appendix 1 - Tahltan Lake sockeye smolt daily counts, 2016.

	Date	Stat. Week	Daily Count	Cum. Count	Weekly Count	Daily Prop.	Cum. Prop.	Weekly Prop.
	5-May	19	0	0		0.000	0.000	
	6-May	19	22,574	22,574		0.011	0.011	
	7-May	19	36,968	59,542	59,542	0.018	0.028	0.028
	8-May	20	27,525	87,067		0.013	0.042	
	9-May	20	103,805	190,872		0.050	0.091	
	10-May	20	19,949	210,821		0.010	0.101	
	11-May	20	15,870	226,691		0.008	0.108	
	12-May	20	27,894	254,585		0.013	0.122	
	13-May	20	68,001	322,586		0.032	0.154	
	14-May	20	136,492	459,078	399,536	0.065	0.219	0.191
25%	15-May	21	177,731	636,809		0.085	0.304	
	16-May	21	81,272	718,081		0.039	0.343	
	17-May	21	78,095	796,176		0.037	0.380	
50%	18-May	21	280,114	1,076,290		0.134	0.514	
	19-May	21	59,467	1,135,757		0.028	0.542	
	20-May	21	188,807	1,324,564		0.090	0.632	
	21-May	21	182,180	1,506,744	1,047,666	0.087	0.719	0.500
	22-May	22	201,597	1,708,341		0.096	0.816	
	23-May	22	152,429	1,860,770		0.073	0.888	
90%	24-May	22	47,841	1,908,611		0.023	0.911	
	25-May	22	30,188	1,938,799		0.014	0.926	
	26-May	22	76,435	2,015,234		0.036	0.962	
	27-May	22	15,389	2,030,623		0.007	0.969	
	28-May	22	6,300	2,036,923	530,179	0.003	0.972	0.253
	29-May	23	9,000	2,045,923		0.004	0.977	
	30-May	23	9,368	2,055,291		0.004	0.981	
	31-May	23	13,436	2,068,727		0.006	0.988	
	1-Jun	23	4,756	2,073,483		0.002	0.990	
	2-Jun	23	7,400	2,080,883		0.004	0.993	
	3-Jun	23	6,203	2,087,086		0.003	0.996	
	4-Jun	23	1,935	2,089,021	52,098	0.001	0.997	0.025
	5-Jun	24	1,949	2,090,970		0.001	0.998	
	6-Jun	24	1,686	2,092,656		0.001	0.999	
	7-Jun	24	721	2,093,377		0.000	0.999	
	8-Jun	24	737	2,094,114		0.000	1.000	
	9-Jun	24	478	2,094,592		0.000	1.000	
	10-Jun	24	0	2,094,592		0.000	1.000	
	11-Jun	24	0	2,094,592	5,571	0.000	1.000	0.003
			2,094,592		2,094,592			

		Date
25%	523,648	15-May
50%	1,047,296	18-May
90%	1,885,133	24-May
Peak Day	280,114	18-May

Appendix 2 - Tahltan Lake sockeye smolt sample data, 2016.

Vial #	Date	Stat. Wk.	Bk. #	Sc. #	Age (GR)	Age (EU)	WT.	FL.	K-Factor	Box #	Otolith #	Box Cell #	Marked Y/N	Thermal Mark	Brood Year
1	6-May	19	75961	1	22	10	4.0	79	0.81	1	1	1-1	N		
2	6-May	19	75961	2	22	10	6.2	89	0.88	1	2	1-2	Y	Tahltan	2014
3	6-May	19	75961	3	22	10	6.2	90	0.85	1	3	1-3	Y	Tahltan	2014
4	6-May	19	75961	4	22	10	4.5	82	0.82	1	4	1-4	N		
5	6-May	19	75961	5	22	10	6.5	93	0.81	1	5	1-5	Y	Tahltan	2014
6	6-May	19	75961	6	22	10	5.2	87	0.79	1	6	1-6	N		
7	6-May	19	75961	7	22	10	6.2	90	0.85	1	7	1-7	Y	Tahltan	2014
8	6-May	19	75961	8	22	10	5.3	87	0.80	1	8	1-8	N		
9	6-May	19	75961	9	22	10	6.7	91	0.89	1	9	1-9	N		
10	6-May	19	75961	10	22	10	3.9	78	0.82	1	10	1-10	N		
11	7-May	19	75961	11	22	10	7.1	94	0.85	1	11	1-11	Y	Tahltan	2014
12	7-May	19	75961	12	22	10	6.3	90	0.86	1	12	1-12	N		
13	7-May	19	75961	13	22	10	6.6	90	0.91	1	13	1-13	N		
14	7-May	19	75961	14	22	10	5.6	88	0.82	1	14	1-14	Y	Tahltan	2014
15	7-May	19	75961	15	22	10	6.3	92	0.81	1	15	1-15	Y	Tahltan	2014
16	7-May	19	75961	16	22	10	6.6	91	0.88	1	16	1-16	Y	Tahltan	2014
17	7-May	19	75961	17	22	10	7.2	95	0.84	1	17	1-17	N		
18	7-May	19	75961	18	22	10	6.7	93	0.83	1	18	1-18	N		
19	7-May	19	75961	19	22	10	5.7	90	0.78	1	19	1-19	N		
20	7-May	19	75961	20	22	10	5.9	89	0.84	1	20	1-20	N		
21	8-May	20	75961	21	22	10	7.3	96	0.83	1	21	1-21	N		
22	8-May	20	75961	22	22	10	5.2	87	0.79	1	22	1-22	N		
23	8-May	20	75961	23	22	10	5.8	90	0.80	1	23	1-23	N		
24	8-May	20	75961	24	22	10	6.7	93	0.83	1	24	1-24	Y	Tahltan	2014
25	8-May	20	75961	25	22	10	5.8	90	0.80	1	25	1-25	Y	Tahltan	2014
26	8-May	20	75962	1	22	10	4.6	83	0.80	1	26	1-26	N		
27	8-May	20	75962	2	22	10	6.1	92	0.78	1	27	1-27	N		
28	8-May	20	75962	3	22	10	6.2	92	0.80	1	28	1-28	N		
29	8-May	20	75962	4	22	10	6.2	92	0.80	1	29	1-29	N		
30	8-May	20	75962	5	22	10	5.7	90	0.78	1	30	1-30	Y	Tahltan	2014
31	9-May	20	75962	6	22	10	4.7	83	0.82	1	31	1-31	N		
32	9-May	20	75962	7	22	10	6.9	93	0.86	1	32	1-32	Y	Tahltan	2014
33	9-May	20	75962	8	22	10	6.3	89	0.89	1	33	1-33	Y	Tahltan	2014
34	9-May	20	75962	9	22	10	5.3	85	0.86	1	34	1-34	Y	Tahltan	2014
35	9-May	20	75962	10	22	10	4.7	82	0.85	1	35	1-35	N		
36	9-May	20	75962	11	22	10	6.4	92	0.82	1	36	1-36	Y	Tahltan	2014
37	9-May	20	75962	12	22	10	5.9	88	0.87	1	37	1-37	Y	Tahltan	2014
38	9-May	20	75962	13	22	10	7.6	95	0.89	1	38	1-38	Y	Tahltan	2014
39	9-May	20	75962	14	22	10	5.3	87	0.80	1	39	1-39	N		
40	9-May	20	75962	15	22	10	6.8	93	0.85	1	40	1-40	N		
41	9-May	20	75962	16	22	10	7.1	94	0.85	1	41	1-41	N		
42	9-May	20	75962	17	22	10	7.6	93	0.94	1	42	1-42	Y	Tahltan	2014
43	9-May	20	75962	18	22	10	5.9	88	0.87	1	43	1-43	N		
44	9-May	20	75962	19	22	10	5.7	84	0.96	1	44	1-44	N		
45	9-May	20	75962	20	22	10	6.0	86	0.94	1	45	1-45	Y	Tahltan	2014
46	9-May	20	75962	21	22	10	3.9	77	0.85	1	46	1-46	N		
47	9-May	20	75962	22	22	10	7.7	95	0.90	1	47	1-47	Y	Tahltan	2014
48	9-May	20	75962	23	22	10	6.4	90	0.88	1	48	1-48	Y	Tahltan	2014
49	9-May	20	75962	24	22	10	7.3	94	0.88	1	49	1-49	Y	Tahltan	2014
50	9-May	20	75962	25	22	10	6.0	89	0.85	1	50	1-50	N		
51	10-May	20	75963	1	22	10	6.4	91	0.85	1	51	1-51	Y	Tahltan	2014
52	10-May	20	75963	2	22	10	6.6	92	0.85	1	52	1-52	Y	Tahltan	2014
53	10-May	20	75963	3	22	10	7.8	99	0.80	1	53	1-53	Y	Tahltan	2014
54	10-May	20	75963	4	22	10	6.9	92	0.89	1	54	1-54	Y	Tahltan	2014
55	10-May	20	75963	5	22	10	5.7	87	0.87	1	55	1-55	Y	Tahltan	2014
56	10-May	20	75963	6	22	10	8.3	99	0.86	1	56	1-56	Y	Tahltan	2014
57	10-May	20	75963	7	22	10	5.3	87	0.80	1	57	1-57	Y	Tahltan	2014
58	10-May	20	75963	8	22	10	5.0	82	0.91	1	58	1-58	N		
59	10-May	20	75963	9	22	10	6.8	92	0.87	1	59	1-59	Y	Tahltan	2014
60	10-May	20	75963	10	22	10	5.3	87	0.80	1	60	1-60	N		
61	11-May	20	75963	11	22	10	5.0	86	0.79	1	61	1-61	N		
62	11-May	20	75963	12	22	10	6.0	91	0.80	1	62	1-62	N		
63	11-May	20	75963	13	22	10	6.0	90	0.82	1	63	1-63	Y	Tahltan	2014
64	11-May	20	75963	14	22	10	6.3	92	0.81	1	64	1-64	Y	Tahltan	2014
65	11-May	20	75963	15	22	10	6.2	89	0.88	1	65	1-65	Y	Tahltan	2014
66	11-May	20	75963	16	22	10	8.1	97	0.89	1	66	1-66	N		
67	11-May	20	75963	17	22	10	5.7	86	0.90	1	67	1-67	Y	Tahltan	2014
68	11-May	20	75963	18	22	10	7.3	96	0.83	1	68	1-68	Y	Tahltan	2014
69	11-May	20	75963	19	22	10	4.7	82	0.85	1	69	1-69	N		
70	11-May	20	75963	20	22	10	6.1	88	0.90	1	70	1-70	Y	Tahltan	2014

71	12-May	20	75963	21	22	10	5.5	87	0.84	1	71	1-71	N		
72	12-May	20	75963	22	22	10	5.8	90	0.80	1	72	1-72	N		
73	12-May	20	75963	23	22	10	6.6	91	0.88	1	73	1-73	Y	Tahltan	2014
74	12-May	20	75963	24	22	10	6.7	91	0.89	1	74	1-74	Y	Tahltan	2014
75	12-May	20	75963	25	22	10	5.6	88	0.82	1	75	1-75	N		
76	12-May	20	75964	1	22	10	6.6	91	0.88	1	76	1-76	N		
77	12-May	20	75964	2	22	10	6.5	91	0.86	1	77	1-77	N		
78	12-May	20	75964	3	22	10	6.1	89	0.87	1	78	1-78	Y	Tahltan	2014
79	12-May	20	75964	4	22	10	5.3	88	0.78	1	79	1-79	Y	Tahltan	2014
80	12-May	20	75964	5	22	10	6.9	94	0.83	1	80	1-80	Y	Tahltan	2014
81	13-May	20	75964	6	22	10	7.5	96	0.85	1	81	1-81	Y	Tahltan	2014
82	13-May	20	75964	7	22	10	4.1	79	0.83	1	82	1-82	N		
83	13-May	20	75964	8	22	10	7.8	97	0.85	1	83	1-83	N		
84	13-May	20	75964	9	22	10	6.4	90	0.88	1	84	1-84	Y	Tahltan	2014
85	13-May	20	75964	10	22	10	6.2	89	0.88	1	85	1-85	N		
86	13-May	20	75964	11	22	10	5.6	87	0.85	1	86	1-86	N		
87	13-May	20	75964	12	22	10	4.5	82	0.82	1	87	1-87	N		
88	13-May	20	75964	13	22	10	5.6	88	0.82	1	88	1-88	Y	Tahltan	2014
89	13-May	20	75964	14	22	10	6.4	90	0.88	1	89	1-89	N		
90	13-May	20	75964	15	22	10	7.8	98	0.83	1	90	1-90	N		
91	13-May	20	75964	16	22	10	4.7	83	0.82	1	91	1-91	N		
92	13-May	20	75964	17	22	10	4.6	85	0.75	1	92	1-92	Y	Tahltan	2014
93	13-May	20	75964	18	22	10	6.1	89	0.87	1	93	1-93	Y	Tahltan	2014
94	14-May	20	75964	19	22	10	7.3	95	0.85	1	94	1-94	Y	Tahltan	2014
95	14-May	20	75964	20	22	10	6.6	92	0.85	1	95	1-95	Y	Tahltan	2014
96	14-May	20	75964	21	22	10	4.5	82	0.82	1	96	1-96	N		
97	14-May	20	75964	22	22	10	6.9	94	0.83	1	97	1-97	N		
98	14-May	20	75964	23	22	10	5.2	85	0.85	1	98	1-98	N		
99	14-May	20	75964	24	22	10	5.1	85	0.83	1	99	1-99	N		
100	14-May	20	75964	25	22	10	5.4	88	0.79	1	100	1-100	Y	Tahltan	2014
101	14-May	20	75965	1	22	10	4.0	78	0.84	2	1	2-1	N		
102	14-May	20	75965	2	22	10	6.0	90	0.82	2	2	2-2	Y	Tahltan	2014
103	14-May	20	75965	3	22	10	6.0	90	0.82	2	3	2-3	N		
104	14-May	20	75965	4	22	10	6.7	92	0.86	2	4	2-4	Y	Tahltan	2014
105	14-May	20	75965	5	22	10	5.4	88	0.79	2	5	2-5	Y	Tahltan	2014
106	14-May	20	75965	6	22	10	3.3	74	0.81	2	6	2-6	N		
107	14-May	20	75965	7	22	10	5.3	86	0.83	2	7	2-7	N		
108	14-May	20	75965	8	22	10	6.2	92	0.80	2	8	2-8	Y	Tahltan	2014
109	14-May	20	75965	9	22	10	4.3	82	0.78	2	9	2-9	N		
110	14-May	20	75965	10	33	20	10.5	110	0.79	2	10	2-10	Y	Tahltan	2013
111	14-May	20	75965	11	22	10	5.3	88	0.78	2	11	2-11	Y	Tahltan	2014
112	14-May	20	75965	12	22	10	5.2	85	0.85	2	12	2-12	N		
113	14-May	20	75965	13	22	10	8.7	100	0.87	2	13	2-13	N		
114	14-May	20	75965	14	22	10	6.2	91	0.82	2	14	2-14	Y	Tahltan	2014
115	14-May	20	75965	15	22	10	5.3	89	0.75	2	15	2-15	Y	Tahltan	2014
116	14-May	20	75965	16	22	10	3.7	76	0.84	2	16	2-16	N		
117	14-May	20	75965	17	22	10	6.7	94	0.81	2	17	2-17	Y	Tahltan	2014
118	14-May	20	75965	18	22	10	5.7	87	0.87	2	18	2-18	Y	Tahltan	2014
119	14-May	20	75965	19	22	10	5.3	88	0.78	2	19	2-19	Y	Tahltan	2014
120	15-May	21	75965	20	22	10	5.5	87	0.84	2	20	2-20	N		
121	15-May	21	75965	21	22	10	4.8	84	0.81	2	21	2-21	N		
122	15-May	21	75965	22	22	10	5.0	85	0.81	2	22	2-22	N		
123	15-May	21	75965	23	22	10	4.6	83	0.80	2	23	2-23	N		
124	15-May	21	75965	24	22	10	4.9	84	0.83	2	24	2-24	N		
125	15-May	21	75965	25	22	10	6.5	91	0.86	2	25	2-25	N		
126	15-May	21	75966	1	22	10	7.5	97	0.82	2	26	2-26	Y	Tahltan	2014
127	15-May	21	75966	2	22	10	5.8	86	0.91	2	27	2-27	N		
128	15-May	21	75966	3	22	10	6.3	90	0.86	2	28	2-28	Y	Tahltan	2014
129	15-May	21	75966	4	22	10	5.3	86	0.83	2	29	2-29	N		
130	15-May	21	75966	5	22	10	5.3	85	0.86	2	30	2-30	Y	Tahltan	2014
131	15-May	21	75966	6	22	10	6.9	93	0.86	2	31	2-31	N		
132	15-May	21	75966	7	22	10	3.9	77	0.85	2	32	2-32	N		
133	15-May	21	75966	8	22	10	6.0	88	0.88	2	33	2-33	Y	Tahltan	2014
134	15-May	21	75966	9	22	10	4.5	80	0.88	2	34	2-34	N		
135	15-May	21	75966	10	22	10	7.5	95	0.87	2	35	2-35	Y	Tahltan	2014
136	15-May	21	75966	11	22	10	7.3	95	0.85	2	36	2-36	Y	Tahltan	2014
137	15-May	21	75966	12	22	10	5.8	90	0.80	2	37	2-37	Y	Tahltan	2014
138	15-May	21	75966	13	22	10	6.2	91	0.82	2	38	2-38	N		
139	15-May	21	75966	14	22	10	6.1	90	0.84	2	39	2-39	Y	Tahltan	2014
140	15-May	21	75966	15	22	10	5.8	90	0.80	2	40	2-40	Y	Tahltan	2014

141	15-May	21	75966	16	22	10	6.1	91	0.81	2	41	2-41	Y	Tahltan	2014
142	15-May	21	75966	17	22	10	8.6	101	0.83	2	42	2-42	Y	Tahltan	2014
143	15-May	21	75966	18	22	10	5.6	87	0.85	2	43	2-43	N		
144	15-May	21	75966	19	22	10	5.6	88	0.82	2	44	2-44	Y	Tahltan	2014
145	15-May	21	75966	20	22	10	6.9	95	0.80	2	45	2-45	Y	Tahltan	2014
146	15-May	21	75966	21	22	10	6.4	93	0.80	2	46	2-46	Y	Tahltan	2014
147	15-May	21	75966	22	22	10	5.1	85	0.83	2	47	2-47	Y	Tahltan	2014
148	15-May	21	75966	23	22	10	5.7	89	0.81	2	48	2-48	Y	Tahltan	2014
149	15-May	21	75966	24	22	10	6.1	90	0.84	2	49	2-49	Y	Tahltan	2014
150	15-May	21	75966	25	22	10	6.8	92	0.87	2	50	2-50	N		
151	15-May	21	75967	1	22	10	6.2	90	0.85	2	51	2-51	N		
152	15-May	21	75967	2	22	10	6.1	90	0.84	2	52	2-52	N		
153	15-May	21	75967	3	22	10	6.1	89	0.87	2	53	2-53	N		
154	16-May	21	75967	4	22	10	5.5	86	0.86	2	54	2-54	Y	Tahltan	2014
155	16-May	21	75967	5	22	10	5.2	86	0.82	2	55	2-55	N		
156	16-May	21	75967	6	22	10	4.8	82	0.87	2	56	2-56	N		
157	16-May	21	75967	7	22	10	4.6	82	0.83	2	57	2-57	N		
158	16-May	21	75967	8	22	10	6.1	90	0.84	2	58	2-58	N		
159	16-May	21	75967	9	22	10	6.4	91	0.85	2	59	2-59	Y	Tahltan	2014
160	16-May	21	75967	10	22	10	6.3	92	0.81	2	60	2-60	N		
161	16-May	21	75967	11	22	10	7.0	94	0.84	2	61	2-61	N		
162	16-May	21	75967	12	22	10	6.0	89	0.85	2	62	2-62	Y	Tahltan	2014
163	16-May	21	75967	13	22	10	5.6	87	0.85	2	63	2-63	Y	Tahltan	2014
164	16-May	21	75967	14	22	10	4.3	79	0.87	2	64	2-64	N		
165	16-May	21	75967	15	22	10	4.8	82	0.87	2	65	2-65	N		
166	16-May	21	75967	16	22	10	5.6	84	0.94	2	66	2-66	N		
167	16-May	21	75967	17	22	10	4.9	83	0.86	2	67	2-67	Y	Tahltan	2014
168	16-May	21	75967	18	22	10	6.9	92	0.89	2	68	2-68	Y	Tahltan	2014
169	17-May	21	75967	19	22	10	6.9	94	0.83	2	69	2-69	Y	Tahltan	2014
170	17-May	21	75967	20	22	10	7.6	96	0.86	2	70	2-70	N		
171	17-May	21	75967	21	22	10	5.5	88	0.81	2	71	2-71	Y	Tahltan	2014
172	17-May	21	75967	22	22	10	4.3	80	0.84	2	72	2-72	Y	Tahltan	2014
173	17-May	21	75967	23	22	10	5.7	90	0.78	2	73	2-73	N		
174	17-May	21	75967	24	22	10	8.1	98	0.86	2	74	2-74	N		
175	17-May	21	75967	25	22	10	3.9	76	0.89	2	75	2-75	N		
176	17-May	21	75968	1	22	10	5.7	89	0.81	2	76	2-76	N		
177	17-May	21	75968	2	22	10	8.5	98	0.90	2	77	2-77	N		
178	17-May	21	75968	3	22	10	5.7	89	0.81	2	78	2-78	Y	Tahltan	2014
179	17-May	21	75968	4	22	10	2.6	65	0.95	2	79	2-79	N		
180	17-May	21	75968	5	22	10	6.7	92	0.86	2	80	2-80	Y	Tahltan	2014
181	17-May	21	75968	6	22	10	6.8	92	0.87	2	81	2-81	Y	Tahltan	2014
182	17-May	21	75968	7	22	10	6.4	90	0.88	2	82	2-82	N		
183	17-May	21	75968	8	22	10	6.0	88	0.88	2	83	2-83	Y	Tahltan	2014
184	18-May	21	75968	9	22	10	6.7	90	0.92	2	84	2-84	Y	Tahltan	2014
185	18-May	21	75968	10	22	10	7.7	95	0.90	2	85	2-85	Y	Tahltan	2014
186	18-May	21	75968	11	22	10	5.7	87	0.87	2	86	2-86	N		
187	18-May	21	75968	12	22	10	5.8	86	0.91	2	87	2-87	N		
188	18-May	21	75968	13	22	10	6.0	88	0.88	2	88	2-88	Y	Tahltan	2014
189	18-May	21	75968	14	22	10	4.9	82	0.89	2	89	2-89	N		
190	18-May	21	75968	15	22	10	5.9	87	0.90	2	90	2-90	Y	Tahltan	2014
191	18-May	21	75968	16	22	10	7.9	96	0.89	2	91	2-91	Y	Tahltan	2014
192	18-May	21	75968	17	22	10	4.2	77	0.92	2	92	2-92	N		
193	18-May	21	75968	18	22	10	5.9	86	0.93	2	93	2-93	N		
194	18-May	21	75968	19	22	10	6.8	92	0.87	2	94	2-94	N		
195	18-May	21	75968	20	22	10	5.5	87	0.84	2	95	2-95	N		
196	18-May	21	75968	21	22	10	4.4	79	0.89	2	96	2-96	N		
197	18-May	21	75968	22	22	10	5.6	85	0.91	2	97	2-97	N		
198	18-May	21	75968	23	22	10	4.7	80	0.92	2	98	2-98	N		
199	18-May	21	75968	24	22	10	5.9	87	0.90	2	99	2-99	N		
200	18-May	21	75968	25	22	10	6.2	88	0.91	2	100	2-100	N		
201	18-May	21	75969	1	22	10	5.3	85	0.86	3	1	3-1	N		
202	18-May	21	75969	2	22	10	5.2	83	0.91	3	2	3-2	N		
203	18-May	21	75969	3	22	10	7.0	91	0.93	3	3	3-3	Y	Tahltan	2014
204	18-May	21	75969	4	22	10	5.2	83	0.91	3	4	3-4	N		
205	18-May	21	75969	5	22	10	4.1	77	0.90	3	5	3-5	N		
206	18-May	21	75969	6	22	10	9.1	98	0.97	3	6	3-6	Y	Tahltan	2014
207	18-May	21	75969	7	22	10	4.1	78	0.86	3	7	3-7	N		
208	18-May	21	75969	8	22	10	6.6	90	0.91	3	8	3-8	N		
209	18-May	21	75969	9	22	10	6.5	88	0.95	3	9	3-9	Y	Tahltan	2014
210	18-May	21	75969	10	22	10	6.3	89	0.89	3	10	3-10	N		

211	18-May	21	75969	11	22	10	5.7	86	0.90	3	11	3-11	Y	Tahltan	2014
212	18-May	21	75969	12	22	10	4.9	80	0.96	3	12	3-12	N		
213	18-May	21	75969	13	22	10	6.7	90	0.92	3	13	3-13	N		
214	18-May	21	75969	14	22	10	6.7	92	0.86	3	14	3-14	Y	Tahltan	2014
215	18-May	21	75969	15	22	10	5.0	80	0.98	3	15	3-15	N		
216	18-May	21	75969	16	22	10	8.9	100	0.89	3	16	3-16	Y	Tahltan	2014
217	18-May	21	75969	17	22	10	6.0	88	0.88	3	17	3-17	N		
218	18-May	21	75969	18	22	10	4.0	82	0.73	3	18	3-18	N		
219	18-May	21	75969	19	22	10	4.0	79	0.81	3	19	3-19	N		
220	18-May	21	75969	20	22	10	3.9	75	0.92	3	20	3-20	N		
221	18-May	21	75969	21	22	10	5.3	84	0.89	3	21	3-21	Y	Tahltan	2014
222	18-May	21	75969	22	22	10	5.1	85	0.83	3	22	3-22	N		
223	18-May	21	75969	23	22	10	5.8	86	0.91	3	23	3-23	N		
224	18-May	21	75969	24	22	10	3.7	75	0.88	3	24	3-24	N		
225	18-May	21	75969	25	22	10	5.9	88	0.87	3	25	3-25	N		
226	18-May	21	75970	1	22	10	4.5	79	0.91	3	26	3-26	N		
227	18-May	21	75970	2	22	10	6.3	89	0.89	3	27	3-27	Y	Tahltan	2014
228	18-May	21	75970	3	22	10	7.2	92	0.92	3	28	3-28	N		
229	18-May	21	75970	4	22	10	6.8	91	0.90	3	29	3-29	Y	Tahltan	2014
230	18-May	21	75970	5	22	10	4.8	80	0.94	3	30	3-30	N		
231	18-May	21	75970	6	22	10	6.5	90	0.89	3	31	3-31	N		
232	18-May	21	75970	7	22	10	7.8	95	0.91	3	32	3-32	Y	Tahltan	2014
233	18-May	21	75970	8	22	10	6.7	90	0.92	3	33	3-33	Y	Tahltan	2014
234	18-May	21	75970	9	22	10	6.2	88	0.91	3	34	3-34	N		
235	18-May	21	75970	10	22	10	7.3	92	0.94	3	35	3-35	Y	Tahltan	2014
236	18-May	21	75970	11	22	10	3.7	75	0.88	3	36	3-36	N		
237	19-May	21	75970	12	22	10	4.3	80	0.84	3	37	3-37	N		
238	19-May	21	75970	13	22	10	7.1	93	0.88	3	38	3-38	Y	Tahltan	2014
239	19-May	21	75970	14	22	10	5.1	83	0.89	3	39	3-39	N		
240	19-May	21	75970	15	22	10	7.2	91	0.96	3	40	3-40	N		
241	19-May	21	75970	16	22	10	4.7	82	0.85	3	41	3-41	N		
242	19-May	21	75970	17	22	10	5.9	88	0.87	3	42	3-42	Destroyed		
243	19-May	21	75970	18	22	10	5.3	85	0.86	3	43	3-43	N		
244	19-May	21	75970	19	22	10	4.4	77	0.96	3	44	3-44	N		
245	19-May	21	75970	20	22	10	5.7	87	0.87	3	45	3-45	N		
246	19-May	21	75970	21	22	10	8.8	100	0.88	3	46	3-46	Y	Tahltan	2014
247	19-May	21	75970	22	22	10	4.7	82	0.85	3	47	3-47	N		
248	20-May	21	75970	23	22	10	6.8	92	0.87	3	48	3-48	N		
249	20-May	21	75970	24	22	10	6.3	90	0.86	3	49	3-49	Y	Tahltan	2014
250	20-May	21	75970	25	22	10	4.5	80	0.88	3	50	3-50	N		
251	20-May	21	75971	1	33	20	11.5	113	0.80	3	51	3-51	N		
252	20-May	21	75971	2	22	10	6.6	93	0.82	3	52	3-52	Y	Tahltan	2014
253	20-May	21	75971	3	22	10	8.0	95	0.93	3	53	3-53	N		
254	20-May	21	75971	4	22	10	6.3	91	0.84	3	54	3-54	Y	Tahltan	2014
255	20-May	21	75971	5	22	10	5.7	89	0.81	3	55	3-55	N		
256	20-May	21	75971	6	22	10	5.8	87	0.88	3	56	3-56	N		
257	20-May	21	75971	7	22	10	6.6	91	0.88	3	57	3-57	Y	Tahltan	2014
258	20-May	21	75971	8	22	10	7.7	95	0.90	3	58	3-58	Y	Tahltan	2014
259	20-May	21	75971	9	22	10	6.5	91	0.86	3	59	3-59	Y	Tahltan	2014
260	20-May	21	75971	10	22	10	6.9	94	0.83	3	60	3-60	N		
261	20-May	21	75971	11	22	10	6.5	91	0.86	3	61	3-61	Y	Tahltan	2014
262	20-May	21	75971	12	22	10	7.4	94	0.89	3	62	3-62	Y	Tahltan	2014
263	20-May	21	75971	13	22	10	6.0	88	0.88	3	63	3-63	N		
264	20-May	21	75971	14	22	10	5.6	84	0.94	3	64	3-64	N		
265	20-May	21	75971	15	22	10	6.1	87	0.93	3	65	3-65	N		
266	20-May	21	75971	16	22	10	6.7	88	0.98	3	66	3-66	Y	Tahltan	2014
267	20-May	21	75971	17	22	10	8.1	95	0.94	3	67	3-67	N		
268	20-May	21	75971	18	22	10	7.6	93	0.94	3	68	3-68	Y	Tahltan	2014
269	20-May	21	75971	19	22	10	7.8	95	0.91	3	69	3-69	Y	Tahltan	2014
270	20-May	21	75971	20	22	10	6.3	88	0.92	3	70	3-70	N		
271	20-May	21	75971	21	33	20	15.3	118	0.93	3	71	3-71	N		
272	20-May	21	75971	22	22	10	6.2	87	0.94	3	72	3-72	N		
273	20-May	21	75971	23	22	10	5.6	84	0.94	3	73	3-73	N		
274	20-May	21	75971	24	22	10	5.5	85	0.90	3	74	3-74	N		
275	20-May	21	75971	25	22	10	9.4	99	0.97	3	75	3-75	Y	Tahltan	2014
276	20-May	21	75972	1	22	10	5.9	89	0.84	3	76	3-76	Y	Tahltan	2014
277	20-May	21	75972	2	22	10	7.3	95	0.85	3	77	3-77	Y	Tahltan	2014
278	20-May	21	75972	3	22	10	7.0	92	0.90	3	78	3-78	Y	Tahltan	2014
279	20-May	21	75972	4	22	10	4.3	80	0.84	3	79	3-79	N		
280	20-May	21	75972	5	22	10	3.8	76	0.87	3	80	3-80	N		

281	20-May	21	75972	6	22	10	6.6	90	0.91	3	81	3-81	Y	Tahltan	2014
282	20-May	21	75972	7	22	10	5.9	88	0.87	3	82	3-82	Y	Tahltan	2014
283	20-May	21	75972	8	22	10	7.5	94	0.90	3	83	3-83	N		
284	21-May	21	75972	9	22	10	6.9	93	0.86	3	84	3-84	Y	Tahltan	2014
285	21-May	21	75972	10	22	10	6.5	93	0.81	3	85	3-85	Y	Tahltan	2014
286	21-May	21	75972	11	22	10	6.5	93	0.81	3	86	3-86	N		
287	21-May	21	75972	12	22	10	5.4	88	0.79	3	87	3-87	Y	Tahltan	2014
288	21-May	21	75972	13	22	10	5.5	86	0.86	3	88	3-88	Y	Tahltan	2014
289	21-May	21	75972	14	22	10	5.8	90	0.80	3	89	3-89	Y	Tahltan	2014
290	21-May	21	75972	15	22	10	6.2	92	0.80	3	90	3-90	Y	Tahltan	2014
291	21-May	21	75972	16	22	10	5.4	84	0.91	3	91	3-91	Y	Tahltan	2014
292	21-May	21	75972	17	22	10	6.0	89	0.85	3	92	3-92	Y	Tahltan	2014
293	21-May	21	75972	18	22	10	6.6	92	0.85	3	93	3-93	Y	Tahltan	2014
294	21-May	21	75972	19	22	10	7.1	93	0.88	3	94	3-94	Y	Tahltan	2014
295	21-May	21	75972	20	22	10	3.6	75	0.85	3	95	3-95	N		
296	21-May	21	75972	21	33	20	11.5	113	0.80	3	96	3-96	N		
297	21-May	21	75972	22	22	10	6.7	91	0.89	3	97	3-97	Y	Tahltan	2014
298	21-May	21	75972	23	22	10	7.1	93	0.88	3	98	3-98	N		
299	21-May	21	75972	24	22	10	6.3	86	0.99	3	99	3-99	N		
300	21-May	21	75972	25	22	10	5.8	86	0.91	3	100	3-100	Y	Tahltan	2014
301	21-May	21	75973	1	22	10	5.6	85	0.91	4	1	4-1	N		
302	21-May	21	75973	2	22	10	5.4	85	0.88	4	2	4-2	N		
303	21-May	21	75973	3	22	10	6.7	91	0.89	4	3	4-3	Y	Tahltan	2014
304	21-May	21	75973	4	22	10	7.2	94	0.87	4	4	4-4	Y	Tahltan	2014
305	21-May	21	75973	5	22	10	7.8	96	0.88	4	5	4-5	Y	Tahltan	2014
306	21-May	21	75973	6	22	10	6.2	89	0.88	4	6	4-6	Y	Tahltan	2014
307	21-May	21	75973	7	22	10	6.5	91	0.86	4	7	4-7	Y	Tahltan	2014
308	21-May	21	75973	8	22	10	6.7	93	0.83	4	8	4-8	Y	Tahltan	2014
309	21-May	21	75973	9	22	10	7.7	97	0.84	4	9	4-9	Y	Tahltan	2014
310	21-May	21	75973	10	22	10	7.0	92	0.90	4	10	4-10	Y	Tahltan	2014
311	21-May	21	75973	11	22	10	6.7	92	0.86	4	11	4-11	Y	Tahltan	2014
312	21-May	21	75973	12	22	10	5.3	85	0.86	4	12	4-12	N		
313	21-May	21	75973	13	22	10	8.6	100	0.86	4	13	4-13	Y	Tahltan	2014
314	21-May	21	75973	14	22	10	7.5	95	0.87	4	14	4-14	N		
315	21-May	21	75973	15	22	10	6.7	93	0.83	4	15	4-15	N		
316	21-May	21	75973	16	22	10	5.4	86	0.85	4	16	4-16	Y	Tahltan	2014
317	21-May	21	75973	17	22	10	6.3	92	0.81	4	17	4-17	Y	Tahltan	2014
318	21-May	21	75973	18	22	10	4.1	77	0.90	4	18	4-18	N		
319	22-May	22	75973	19	22	10	12.1	115	0.80	4	19	4-19	Y	Tahltan	2014
320	22-May	22	75973	20	22	10	5.8	89	0.82	4	20	4-20	N		
321	22-May	22	75973	21	22	10	6.2	92	0.80	4	21	4-21	N		
322	22-May	22	75973	22	22	10	6.5	93	0.81	4	22	4-22	Y	Tahltan	2014
323	22-May	22	75973	23	22	10	6.9	93	0.86	4	23	4-23	Y	Tahltan	2014
324	22-May	22	75973	24	22	10	7.0	94	0.84	4	24	4-24	Y	Tahltan	2014
325	22-May	22	75973	25	22	10	4.8	84	0.81	4	25	4-25	N		
326	22-May	22	75974	1	22	10	6.0	90	0.82	4	26	4-26	N		
327	22-May	22	75974	2	22	10	5.3	86	0.83	4	27	4-27	Y	Tahltan	2014
328	22-May	22	75974	3	22	10	5.7	88	0.84	4	28	4-28	N		
329	22-May	22	75974	4	22	10	5.6	88	0.82	4	29	4-29	Y	Tahltan	2014
330	22-May	22	75974	5	22	10	6.2	89	0.88	4	30	4-30	Y	Tahltan	2014
331	22-May	22	75974	6	22	10	6.3	92	0.81	4	31	4-31	Y	Tahltan	2014
332	22-May	22	75974	7	22	10	5.8	89	0.82	4	32	4-32	Y	Tahltan	2014
333	22-May	22	75974	8	22	10	6.6	90	0.91	4	33	4-33	Y	Tahltan	2014
334	22-May	22	75974	9	22	10	5.1	86	0.80	4	34	4-34	N		
335	22-May	22	75974	10	22	10	4.6	82	0.83	4	35	4-35	N		
336	22-May	22	75974	11	22	10	5.5	85	0.90	4	36	4-36	Y	Tahltan	2014
337	22-May	22	75974	12	22	10	4.0	78	0.84	4	37	4-37	N		
338	22-May	22	75974	13	22	10	5.5	87	0.84	4	38	4-38	Y	Tahltan	2014
339	22-May	22	75974	14	22	10	6.5	95	0.76	4	39	4-39	Y	Tahltan	2014
340	22-May	22	75974	15	22	10	5.0	88	0.73	4	40	4-40	N		
341	22-May	22	75974	16	22	10	7.0	98	0.74	4	41	4-41	N		
342	22-May	22	75974	17	22	10	6.5	95	0.76	4	42	4-42	Y	Tahltan	2014
343	22-May	22	75974	18	22	10	5.0	86	0.79	4	43	4-43	Y	Tahltan	2014
344	22-May	22	75974	19	22	10	5.6	88	0.82	4	44	4-44	Y	Tahltan	2014
345	22-May	22	75974	20	22	10	4.9	85	0.80	4	45	4-45	N		
346	22-May	22	75974	21	22	10	5.7	89	0.81	4	46	4-46	Y	Tahltan	2014
347	22-May	22	75974	22	22	10	6.5	92	0.83	4	47	4-47	Y	Tahltan	2014
348	22-May	22	75974	23	22	10	5.8	90	0.80	4	48	4-48	Y	Tahltan	2014
349	22-May	22	75974	24	22	10	6.3	90	0.86	4	49	4-49	Y	Tahltan	2014
350	22-May	22	75974	25	22	10	5.8	88	0.85	4	50	4-50	N		

351	22-May	22	75975	1	22	10	6.2	91	0.82	4	51	4-51	Y	Tahltan	2014
352	22-May	22	75975	2	22	10	6.0	93	0.75	4	52	4-52	Y	Tahltan	2014
353	22-May	22	75975	3	22	10	4.9	83	0.86	4	53	4-53	N		
354	22-May	22	75975	4	22	10	5.1	83	0.89	4	54	4-54	N		
355	22-May	22	75975	5	22	10	5.3	88	0.78	4	55	4-55	Y	Tahltan	2014
356	22-May	22	75975	6	22	10	5.2	85	0.85	4	56	4-56	N		
357	23-May	22	75975	7	22	10	6.7	94	0.81	4	57	4-57	Y	Tahltan	2014
358	23-May	22	75975	8	22	10	5.4	86	0.85	4	58	4-58	N		
359	23-May	22	75975	9	22	10	5.1	88	0.75	4	59	4-59	N		
360	23-May	22	75975	10	22	10	5.1	88	0.75	4	60	4-60	Y	Tahltan	2014
361	23-May	22	75975	11	22	10	5.4	88	0.79	4	61	4-61	Y	Tahltan	2014
362	23-May	22	75975	12	22	10	7.2	95	0.84	4	62	4-62	Y	Tahltan	2014
363	23-May	22	75975	13	22	10	4.0	79	0.81	4	63	4-63	N		
364	23-May	22	75975	14	22	10	6.3	92	0.81	4	64	4-64	Y	Tahltan	2014
365	23-May	22	75975	15	22	10	5.2	87	0.79	4	65	4-65	Y	Tahltan	2014
366	23-May	22	75975	16	22	10	5.3	88	0.78	4	66	4-66	Y	Tahltan	2014
367	23-May	22	75975	17	22	10	4.8	86	0.75	4	67	4-67	N		
368	23-May	22	75975	18	22	10	4.3	82	0.78	4	68	4-68	N		
369	23-May	22	75975	19	22	10	3.9	81	0.73	4	69	4-69	N		
370	23-May	22	75975	20	22	10	4.4	84	0.74	4	70	4-70	Destroyed		
371	23-May	22	75975	21	22	10	8.3	99	0.86	4	71	4-71	Y	Tahltan	2014
372	23-May	22	75975	22	22	10	7.1	98	0.75	4	72	4-72	Y	Tahltan	2014
373	23-May	22	75975	23	22	10	5.2	86	0.82	4	73	4-73	N		
374	23-May	22	75975	24	22	10	5.0	81	0.94	4	74	4-74	N		
375	23-May	22	75975	25	22	10	5.6	88	0.82	4	75	4-75	N		
376	23-May	22	75976	1	22	10	7.4	96	0.84	4	76	4-76	Y	Tahltan	2014
377	23-May	22	75976	2	22	10	6.3	90	0.86	4	77	4-77	Y	Tahltan	2014
378	23-May	22	75976	3	22	10	5.9	90	0.81	4	78	4-78	Y	Tahltan	2014
379	23-May	22	75976	4	22	10	7.4	95	0.86	4	79	4-79	Y	Tahltan	2014
380	23-May	22	75976	5	22	10	3.9	80	0.76	4	80	4-80	N		
381	23-May	22	75976	6	22	10	5.8	89	0.82	4	81	4-81	Y	Tahltan	2014
382	23-May	22	75976	7	22	10	4.9	83	0.86	4	82	4-82	N		
383	23-May	22	75976	8	22	10	3.9	79	0.79	4	83	4-83	N		
384	23-May	22	75976	9	22	10	5.7	86	0.90	4	84	4-84	Y	Tahltan	2014
385	23-May	22	75976	10	22	10	5.6	89	0.79	4	85	4-85	N		
386	24-May	22	75976	11	22	10	6.1	91	0.81	4	86	4-86	N		
387	24-May	22	75976	12	22	10	4.6	83	0.80	4	87	4-87	N		
388	24-May	22	75976	13	22	10	7.4	93	0.92	4	88	4-88	Y	Tahltan	2014
389	24-May	22	75976	14	22	10	6.2	92	0.80	4	89	4-89	N		
390	24-May	22	75976	15	22	10	7.2	96	0.81	4	90	4-90	Y	Tahltan	2014
391	24-May	22	75976	16	22	10	5.7	90	0.78	4	91	4-91	Y	Tahltan	2014
392	24-May	22	75976	17	22	10	6.5	90	0.89	4	92	4-92	Y	Tahltan	2014
393	24-May	22	75976	18	22	10	5.5	87	0.84	4	93	4-93	Y	Tahltan	2014
394	24-May	22	75976	19	22	10	5.0	84	0.84	4	94	4-94	N		
395	24-May	22	75976	20	22	10	6.4	90	0.88	4	95	4-95	Y	Tahltan	2014
396	25-May	22	75976	21	22	10	5.3	83	0.93	4	96	4-96	N		
397	25-May	22	75976	22	22	10	7.4	96	0.84	4	97	4-97	Y	Tahltan	2014
398	25-May	22	75976	23	22	10	5.0	85	0.81	4	98	4-98	Y	Tahltan	2014
399	25-May	22	75976	24	22	10	4.5	81	0.85	4	99	4-99	N		
400	25-May	22	75976	25	22	10	5.7	87	0.87	4	100	4-100	Y	Tahltan	2014
401	25-May	22	75977	1	22	10	5.9	93	0.73	5	1	5-1	Y	Tahltan	2014
402	25-May	22	75977	2	22	10	5.2	86	0.82	5	2	5-2	N		
403	25-May	22	75977	3	22	10	5.9	94	0.71	5	3	5-3	Y	Tahltan	2014
404	25-May	22	75977	4	22	10	5.6	87	0.85	5	4	5-4	N		
405	25-May	22	75977	5	22	10	8.4	100	0.84	5	5	5-5	Y	Tahltan	2014
406	26-May	22	75977	6	22	10	4.0	83	0.70	5	6	5-6	Y	Tahltan	2014
407	26-May	22	75977	7	22	10	5.6	87	0.85	5	7	5-7	Y	Tahltan	2014
408	26-May	22	75977	8	22	10	3.8	79	0.77	5	8	5-8	N		
409	26-May	22	75977	9	22	10	5.6	88	0.82	5	9	5-9	Y	Tahltan	2014
410	26-May	22	75977	10	22	10	3.6	78	0.76	5	10	5-10	N		
411	26-May	22	75977	11	22	10	6.4	93	0.80	5	11	5-11	Y	Tahltan	2014
412	26-May	22	75977	12	22	10	5.6	90	0.77	5	12	5-12	N		
413	26-May	22	75977	13	22	10	6.2	92	0.80	5	13	5-13	Y	Tahltan	2014
414	26-May	22	75977	14	22	10	4.4	85	0.72	5	14	5-14	N		
415	26-May	22	75977	15	22	10	4.4	84	0.74	5	15	5-15	Y	Tahltan	2014
416	26-May	22	75977	16	22	10	5.3	90	0.73	5	16	5-16	N		
417	26-May	22	75977	17	22	10	4.2	80	0.82	5	17	5-17	N		
418	26-May	22	75977	18	22	10	4.7	84	0.79	5	18	5-18	N		
419	26-May	22	75977	19	22	10	3.7	80	0.72	5	19	5-19	N		
420	26-May	22	75977	20	22	10	6.1	90	0.84	5	20	5-20	Y	Tahltan	2014

421	27-May	22	75977	21	22	10	7.0	92	0.90	5	21	5-21	N		
422	27-May	22	75977	22	22	10	5.6	89	0.79	5	22	5-22	Y	Tahltan	2014
423	27-May	22	75977	23	33	20	18.8	133	0.80	5	23	5-23	Y	Tahltan	2013
424	27-May	22	75977	24	22	10	5.9	88	0.87	5	24	5-24	Y	Tahltan	2014
425	27-May	22	75977	25	22	10	6.6	90	0.91	5	25	5-25	Y	Tahltan	2014
426	27-May	22	75978	1	22	10	4.4	79	0.89	5	26	5-26	N		
427	27-May	22	75978	2	22	10	4.8	83	0.84	5	27	5-27	Y	Tahltan	2014
428	27-May	22	75978	3	22	10	6.0	89	0.85	5	28	5-28	N		
429	27-May	22	75978	4	22	10	6.0	92	0.77	5	29	5-29	Y	Tahltan	2014
430	27-May	22	75978	5	22	10	3.6	75	0.85	5	30	5-30	N		
431	28-May	22	75978	6	22	10	4.8	87	0.73	5	31	5-31	N		
432	28-May	22	75978	7	22	10	5.6	90	0.77	5	32	5-32	Y	Tahltan	2014
433	28-May	22	75978	8	22	10	4.5	85	0.73	5	33	5-33	N		
434	28-May	22	75978	9	22	10	4.2	84	0.71	5	34	5-34	N		
435	28-May	22	75978	10	22	10	4.4	86	0.69	5	35	5-35	Y	Tahltan	2014
436	28-May	22	75978	11	22	10	3.9	82	0.71	5	36	5-36	N		
437	28-May	22	75978	12	33	20	11.2	115	0.74	5	37	5-37	N		
438	28-May	22	75978	13	22	10	7.0	97	0.77	5	38	5-38	Y	Tahltan	2014
439	28-May	22	75978	14	22	10	5.9	93	0.73	5	39	5-39	Y	Tahltan	2014
440	28-May	22	75978	15	22	10	4.8	83	0.84	5	40	5-40	Y	Tahltan	2014
441	29-May	23	75978	16	22	10	7.0	95	0.82	5	41	5-41	Y	Tahltan	2014
442	29-May	23	75978	17	22	10	4.8	87	0.73	5	42	5-42	N		
443	29-May	23	75978	18	22	10	4.7	83	0.82	5	43	5-43	N		
444	29-May	23	75978	19	22	10	5.7	88	0.84	5	44	5-44	Y	Tahltan	2014
445	29-May	23	75978	20	22	10	7.2	93	0.90	5	45	5-45	Y	Tahltan	2014
446	29-May	23	75978	21	22	10	5.9	90	0.81	5	46	5-46	Y	Tahltan	2014
447	29-May	23	75978	22	22	10	5.6	91	0.74	5	47	5-47	N		
448	29-May	23	75978	23	22	10	4.6	83	0.80	5	48	5-48	N		
449	29-May	23	75978	24	22	10	4.3	82	0.78	5	49	5-49	N		
450	29-May	23	75978	25	22	10	4.2	80	0.82	5	50	5-50	Y	Tahltan	2014
451	30-May	23	75979	1	22	10	7.5	97	0.82	5	51	5-51	N		
452	30-May	23	75979	2	22	10	5.6	91	0.74	5	52	5-52	N		
453	30-May	23	75979	3	22	10	5.4	86	0.85	5	53	5-53	N		
454	30-May	23	75979	4	22	10	5.2	84	0.88	5	54	5-54	N		
455	30-May	23	75979	5	22	10	5.0	86	0.79	5	55	5-55	N		
456	30-May	23	75979	6	22	10	5.0	85	0.81	5	56	5-56	N		
457	30-May	23	75979	7	22	10	8.6	100	0.86	5	57	5-57	Y	Tahltan	2014
458	30-May	23	75979	8	22	10	4.9	85	0.80	5	58	5-58	N		
459	30-May	23	75979	9	22	10	5.8	87	0.88	5	59	5-59	Y	Tahltan	2014
460	30-May	23	75979	10	22	10	5.9	90	0.81	5	60	5-60	Y	Tahltan	2014
461	31-May	23	75979	11	22	10	8.5	99	0.88	5	61	5-61	Y	Tahltan	2014
462	31-May	23	75979	12	22	10	6.5	94	0.78	5	62	5-62	Y	Tahltan	2014
463	31-May	23	75979	13	22	10	7.5	95	0.87	5	63	5-63	Y	Tahltan	2014
464	31-May	23	75979	14	22	10	5.3	88	0.78	5	64	5-64	Y	Tahltan	2014
465	31-May	23	75979	15	22	10	8.2	98	0.87	5	65	5-65	Y	Tahltan	2014
466	31-May	23	75979	16	22	10	8.8	99	0.91	5	66	5-66	N		
467	31-May	23	75979	17	22	10	7.1	92	0.91	5	67	5-67	Y	Tahltan	2014
468	31-May	23	75979	18	22	10	7.5	94	0.90	5	68	5-68	Y	Tahltan	2014
469	31-May	23	75979	19	22	10	5.6	86	0.88	5	69	5-69	N		
470	31-May	23	75979	20	22	10	7.5	96	0.85	5	70	5-70	Destroyed		
471	1-Jun	23	75979	21	22	10	5.2	87	0.79	5	71	5-71	N		
472	1-Jun	23	75979	22	22	10	4.2	89	0.60	5	72	5-72	N		
473	1-Jun	23	75979	23	22	10	4.1	80	0.80	5	73	5-73	N		
474	1-Jun	23	75979	24	22	10	3.5	76	0.80	5	74	5-74	Y	Tahltan	2014
475	1-Jun	23	75979	25	22	10	4.9	86	0.77	5	75	5-75	N		
476	1-Jun	23	75980	1	22	10	5.6	88	0.82	5	76	5-76	N		
477	1-Jun	23	75980	2	22	10	6.0	90	0.82	5	77	5-77	Y	Tahltan	2014
478	1-Jun	23	75980	3	22	10	6.3	94	0.76	5	78	5-78	N		
479	1-Jun	23	75980	4	22	10	4.2	80	0.82	5	79	5-79	N		
480	1-Jun	23	75980	5	22	10	4.9	86	0.77	5	80	5-80	N		
481	2-Jun	23	75980	6	22	10	8.2	96	0.93	5	81	5-81	Y	Tahltan	2014
482	2-Jun	23	75980	7	22	10	4.2	82	0.76	5	82	5-82	N		
483	2-Jun	23	75980	8	22	10	8.5	100	0.85	5	83	5-83	Y	Tahltan	2014
484	2-Jun	23	75980	9	22	10	4.5	86	0.71	5	84	5-84	N		
485	2-Jun	23	75980	10	22	10	7.1	95	0.83	5	85	5-85	Y	Tahltan	2014
486	2-Jun	23	75980	11	22	10	7.4	95	0.86	5	86	5-86	N		
487	2-Jun	23	75980	12	22	10	9.1	102	0.86	5	87	5-87	Y	Tahltan	2014
488	2-Jun	23	75980	13	22	10	7.5	94	0.90	5	88	5-88	N		
489	2-Jun	23	75980	14	22	10	8.7	99	0.90	5	89	5-89	Y	Tahltan	2014
490	2-Jun	23	75980	15	22	10	6.6	89	0.94	5	90	5-90	Y	Tahltan	2014

491	3-Jun	23	75980	16	22	10	6.4	96	0.72	5	91	5-91	Y	Tahltan	2014
492	3-Jun	23	75980	17	22	10	7.5	95	0.87	5	92	5-92	N		
493	3-Jun	23	75980	18	22	10	6.5	95	0.76	5	93	5-93	Y	Tahltan	2014
494	3-Jun	23	75980	19	22	10	12.3	111	0.90	5	94	5-94	Y	Tahltan	2014
495	3-Jun	23	75980	20	22	10	8.4	93	1.04	5	95	5-95	Y	Tahltan	2014
496	3-Jun	23	75980	21	22	10	7.7	91	1.02	5	96	5-96	N		
497	3-Jun	23	75980	22	22	10	5.4	87	0.82	5	97	5-97	Y	Tahltan	2014
498	3-Jun	23	75980	23	22	10	7.2	86	1.13	5	98	5-98	Y	Tahltan	2014
499	3-Jun	23	75980	24	22	10	6.8	89	0.96	5	99	5-99	Destroyed		
500	3-Jun	23	75980	25	22	10	6.7	89	0.95	5	100	5-100	Y	Tahltan	2014
501	4-Jun	23	75981	1	22	10	8.3	98	0.88	6	1	6-1	Y	Tahltan	2014
502	4-Jun	23	75981	2	22	10	7.1	94	0.85	6	2	6-2	Y	Tahltan	2014
503	4-Jun	23	75981	3	22	10	9.0	99	0.93	6	3	6-3	Y	Tahltan	2014
504	4-Jun	23	75981	4	22	10	6.8	93	0.85	6	4	6-4	Y	Tahltan	2014
505	4-Jun	23	75981	5	33	20	15.5	119	0.92	6	5	6-5	N		
506	5-Jun	24	75981	6	22	10	9.8	102	0.92	6	6	6-6	Y	Tahltan	2014
507	5-Jun	24	75981	7	22	10	8.5	96	0.96	6	7	6-7	Y	Tahltan	2014
508	5-Jun	24	75981	8	22	10	10.4	102	0.98	6	8	6-8	Y	Tahltan	2014
509	5-Jun	24	75981	9	22	10	7.7	94	0.93	6	9	6-9	N		
510	5-Jun	24	75981	10	22	10	9.4	97	1.03	6	10	6-10	Y	Tahltan	2014
511	6-Jun	24	75981	11	22	10	7.8	94	0.94	6	11	6-11	Y	Tahltan	2014
512	6-Jun	24	75981	12	22	10	9.0	97	0.99	6	12	6-12	Y	Tahltan	2014
513	6-Jun	24	75981	13	22	10	7.1	85	1.16	6	13	6-13	N		
514	6-Jun	24	75981	14	22	10	7.9	92	1.01	6	14	6-14	Y	Tahltan	2014
515	6-Jun	24	75981	15	22	10	6.9	90	0.95	6	15	6-15	N		
516	7-Jun	24	75981	16	22	10	7.8	94	0.94	6	16	6-16	Y	Tahltan	2014
517	7-Jun	24	75981	17	22	10	9.0	95	1.05	6	17	6-17	Y	Tahltan	2014
518	7-Jun	24	75981	18	22	10	7.2	89	1.02	6	18	6-18	Y	Tahltan	2014
519	7-Jun	24	75981	19	22	10	4.7	84	0.79	6	19	6-19	N		
520	7-Jun	24	75981	20	22	10	7.4	94	0.89	6	20	6-20	Y	Tahltan	2014
521	8-Jun	24	75981	21	22	10	8.2	95	0.96	6	21	6-21	Y	Tahltan	2014
522	8-Jun	24	75981	22	22	10	11.2	100	1.12	6	22	6-22	Y	Tahltan	2014
523	8-Jun	24	75981	23	22	10	9.7	98	1.03	6	23	6-23	N		
524	8-Jun	24	75981	24	22	10	10.7	102	1.01	6	24	6-24	Y	Tahltan	2014
525	8-Jun	24	75981	25	22	10	7.3	90	1.00	6	25	6-25	N		
526	9-Jun	24	75982	1	22	10	10.5	99	1.08	6	26	6-26	Y	Tahltan	2014
527	9-Jun	24	75982	2	22	10	8.2	90	1.12	6	27	6-27	Y	Tahltan	2014
528	9-Jun	24	75982	3	22	10	8.7	93	1.08	6	28	6-28	N		
529	9-Jun	24	75982	4	22	10	7.9	90	1.08	6	29	6-29	Y	Tahltan	2014
530	9-Jun	24	75982	5	22	10	9.2	96	1.04	6	30	6-30	Y	Tahltan	2014

			1+	22	523	Avg. Wt.	6.2					Y	270	270	Tahltan
			2+	33	7							N	256	260	Blank
					530							Destroyed	4	530	
												Blank	0		
													530	2013	2
														2014	268
														Blank	260
															530

Appendix 3 - Budget Summary

Project Budget Form

Name of Project: Tahltan Lake Smolt Enumeration 2016 — Page 1 of 2

ELIGIBLE COSTS

Labour

Wages & Salaries

Position	# of crew	# of work days	hrs per day	rate per hour	Total (In-kind & Cash & PSC Amount)	In-Kind & Cash	PSC	Spent (PSC)	Variance (+/-)
DFO Stock Assessment Biologist BI-3	1	5	7.5	39	1,463.00	1,463.00			
DFO Stock Assessment Biologist BI-2	1	15	7.5	37	4,163.00	4,163.00			
Fisheries Technicians	2	21	7.5	29	15,135.00		15,135.00	16,171.45	-1,036.45
Person Days (# of crew x work days)		41		**sub total**	20,761.00	5,626.00	15,135.00	16,171.45	-1,036.45

Labour - Employer Costs (percent of wages subtotal amount)

	rate	20%		**sub total**	4,152.20	1,125.20	3,027.00	3,230.00	-203.00

Subcontractors & Consultants	# of crew	# of work days	hrs per day	rate per hour	Total (In-kind & Cash & PSC Amount)	In-Kind & Cash	PSC	Spent (PSC)	Variance (+/-)
Air Charter					10,200.00		10,200.00	9,456.83	743.17
Insurance if applicable	rate	0%							
				sub total	10,200.00	0.00	10,200.00	9,456.83	743.17

Volunteer Labour	# of crew	# of work days	hrs per day	rate per hour	Total (In-kind & Cash & PSC Amount)	In-Kind & Cash	PSC	Spent (PSC)	Variance (+/-)
Skilled									
Un-skilled									
Insurance if applicable	rate	0%							
				sub total					
			Total Labour Costs		35,113.20	6,751.20	28,362.00	28,858.28	-496.28

Site / Project Costs

Travel (do not include to & from work)	Core Mandate				1,800.00		1,800.00	2,325.86	-525.86
Small Tools & Equipment									
Site Supplies & Materials	Groceries, fuel, tools, etc.				7,800.00		7,800.00	8,769.38	-969.38
Equipment Rental									
Work & Safety Gear									
Repairs & Maintenance	Outboard, Chainsaw , Brush saw , Generator, etc.				2,100.00		2,100.00	108.48	1,991.52
Permits									
Technical Monitoring									
Other site costs									
			Total Site / Project Costs		11,700.00	0.00	11,700.00	11,203.72	496.28

Project Budget Form

ELIGIBLE COSTS

Training (e.g. Swift water, bear aware, electrofishing, etc.).				**Total (In-kind & Cash & PSC Amount)**	**In-Kind & Cash**	**PSC**	**Spent (PSC)**	**Variance (+/-)**
Name of course	# of crew	# of work days	Cost Per Person					
Firearms	2	2	300	600.00	600.00			
			Total Training Costs	600.00	600.00	0.00	0.00	0.00
Overhead / Indirect Costs								
Office space; including utilities, etc.								
Insurance								
Office supplies								
Telephone & long Distance	(Satellite Phone/ Internet)			1,200.00	1,200.00			
Photocopies & printing								
Other overhead costs	Admin Overhead @ 3%			1,422.00	1,422.00			
			Total Overhead Costs	2,622.00	2,622.00	0.00	0.00	0.00
Capital Costs / Assets								
Assets are things of value that have an initial cost of $250 or more and which can be readily misappropriated for personal use or gain or which are not, or will not be, fully consumed during the term of the project.								
			Total Capital Costs	0.00	0.00	0.00	0.00	0.00
			Project Total Costs	50,035.20	9,973.20	40,062.00	40,062.00	0.00

Budget Summary	**Total Budget Costs**	**Budget (PSC)**	**Actual Spent (PSC)**	**Variance (+/-)**
Total Labour Costs (Includes in kind cost)	35,113.20	28,362.00	28,858.28	-496.28
Total Site / Project Costs	11,700.00	11,700.00	11,203.72	496.28
Total Training Costs (In kind cost)	600.00	0.00	0.00	0.00
Total Overhead Costs (In kind cost)	2,622.00	0.00	0.00	0.00
Total Capital Costs	0.00	0.00	0.00	0.00
Project Total	50,035.20	40,062.00	40,062.00	0.00