Nakina Creel Survey -2015

Final Report

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Prepared by:

Taku River Tlingit Fisheries

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INTRODUCTION

Background:

The Nakina River has been a long-standing area for collecting Taku Chinook data. Projects such as the Nakina Carcass weir and aerial survey counts have been ongoing. However, in recent years there has been difficulties in effectively calculating run-size and escapement estimates for Taku Chinook. Part of this challenge has been in not being able to recover enough tags during the mark / re-capture program.

The Canadian Taku Chinook sport fishery is concentrated on the Nakina River, where there is opportunity to collect additional biological samples and tag recovery information to supplement the overall Chinook stock assessment program.

Objectives and scope:

The main intent of this project was to augment information for the Taku Chinook mark/re-capture program. This additional effort, in the form of a creel survey focused on collecting Chinook samples from the lower Nakina River during the Canadian sport fishery. As a secondary objective, on-site information relating to harvest was collected, and the feasibility of a future alternative methodology to estimate such was explored.

The main objectives for the project were:

1. Providing additional data to augment the Taku Chinook stock assessment program.
2. Sampling of Chinook on the lower Nakina River during all or most of the Canadian sport fishery.
3. Assessing the feasibility for a future on-going methodology based on an exit survey in Atlin to estimate harvest and angler effort.
4. Collaboration with the PSC TBR Technical Committee regarding this initiative.
5. Submission of a final written report which includes project methods and results.

METHODS

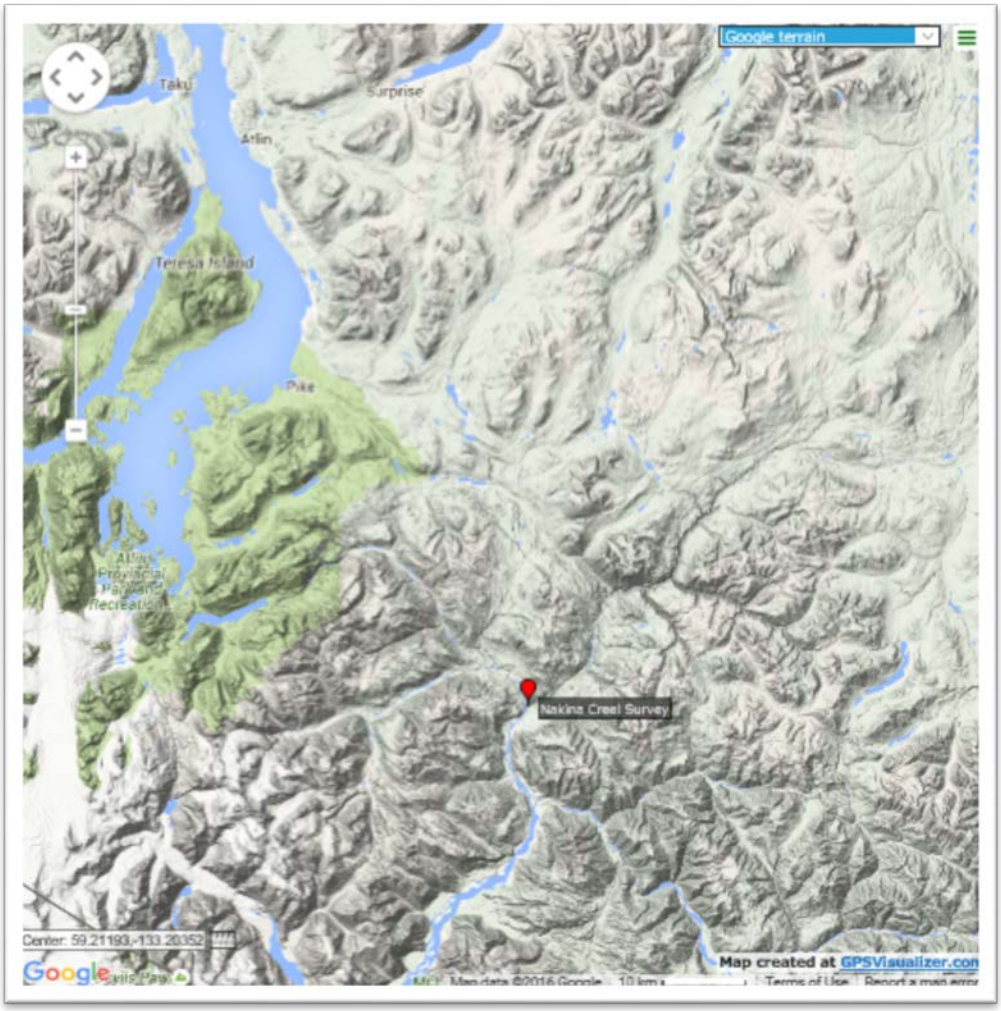
Logistics:

The project site is located approximately 70km SSE of the community of Atlin, BC and 110km NE of Juneau Alaska. (See Figure 1 below.) The associated UTM coordinates are 08 606025E / 6542190N. The sport fishery is concentrated in this area, from the junction of the Sloko River and upstream from there on the Nakina River.

A TRT Fisheries Biologist and a Field Technician proceeded to the lower Nakina River by helicopter on June 19th, 2015. A temporary satellite camp was set up on the left bank of the Nakina / Sloko junction. The TRT Fisheries crew used inflatable kayaks to safely cross the

Nakina River in order to deliver and pick up creel survey forms. There were 4 other flights during the project to facilitate crew changes and replenishment of food and supplies. A crew from ADF&G came to the site and provided in-kind assistance with sample collection from July 2nd – 3rd, 2015. A TRT Fisheries crew of 2 pe0ple was maintained throughout the project, which demobilized on July 20th, 2015.

Figure 1: General location of the project site



Sampling:

The TRT Fisheries crew used heavy angling gear to capture and biologically sample Chinook salmon. As well, Chinook salmon captured by sport fishers in the area were opportunistically sampled. The primary sampling objective was to inspect for spaghetti tags or tag loss, i.e. fish inspected by the TRT crew were utilized to inform the tagged / untagged ratio. A secondary mark (in the form of a dorsal fin hole punch) was applied to all sampled fish that are released to avoid sampling the same fish again.

A priority was given to demonstrating careful live release techniques and timely sampling for any fish released alive. In this regard, sampling varied depending on whether the Chinook was released or retained as per Table 1 below.

Table 1: Sampling methods

Angling Circumstance	Lengths (to the nearest 5mm)		Sex	Age	Record tags	Tag loss
	MEF	POH	M or F	5 Scales	spaghetti, CWT or radio	secondary marks or tag scar
Released Chinook	√		√		√	√
Retained Chinook	√	√	√	√	√	√

To note, for adipose clipped Chinook (CWT's) observed, heads were not retained due to the lack of freezing capability and logistics of transport.

Spaghetti or radio tags were left on any fish released alive. (Attempted removal of radio tags from fish to be released would have been harmful.) If spaghetti tagged fish were retained by other anglers (when the TRT crew was not around), they were asked to keep the tag and later show it to the TRT crew, so that the tag number could be recorded. Notices explaining agency research and associated Chinook tags were posted at the main fishing sites throughout the area.

Creel surveys:

As a secondary objective, information regarding the number of retained Chinook, along with the number of fishers and fishing effort was collected as a means of estimating site specific harvest.

Figure 2: Creel survey form

Taku River Tlingit Fisheries **Nakina River Creel survey form - 2015**			
Name:			
Date	**# of hours angled**	**# of Chinook released**	**# of Chinook kept**

The TRT Fisheries crew provided survey forms to arriving anglers and endeavored to collect such prior to their departure. The survey form utilized is shown in Figure 2 above. In some instances, the crew also opportunistically interviewed anglers, as an alternative to the survey forms. The TRT crew recorded and reported any First Nation food fish catches taking place in the project vicinity. Also, the opportunity to obtain harvest records from commercial sport fishing guide outfitters on the Nakina River was pursued.

A daily head count of the total number of active anglers in the area was also recorded.

The feasibility for an alternative on-going methodology to estimate angler effort in the future, based on an exit-survey in Atlin was also explored and discussed during the project.

Angling regulations:

The Canadian angling regulations in 2015 for Nakina Chinook salmon were as follows:

- No fishing for Chinook from July 20th to August 15th.
- All retained Chinook must measure 300mm or more (in fork length).
- An adult Chinook is defined as being over 650mm (in fork length).
- All Chinook retained must immediately be recorded on your angling license.
- Retention limit is 4 per day, but only 2 over 650mm (in fork length).
- Possession limit is twice the daily limit.
- Annual limit is 10 adult Chinook from all freshwaters.
- Mandatory use of single barbless hooks.

RESULTS

Sampling:

A summary of the sampling results is shown in Table 2 below. A total of 194 Chinook salmon were inspected and sampled, of which 111 were large Chinook (i.e. greater than 659mm mid eye to fork length.) Within the sample there were 68 females and 126 males, for a 35% female ratio. There were 10 spaghetti tags recorded from those fish within the sample, no CWT's and 1 radio tag was recovered. No spaghetti tag losses were observed. A total of 69 Chinook were sampled for age.

Additional sampling data tables are provided in the Appendix of this report.

Table 2: Summary of sampling results

Chinook Sampled						
Large	Medium or small	Total	Sex ratio F's	Spag. tags	CWT	Radio tags
111	83	194	35%	10	0	1

Creel surveys:

Results of the creel surveys are summarized in Table 3 below. Based upon survey forms, interviews and direct reporting there were a total of 445 Chinook released and 108 Chinook retained. The expanded estimate of retained Chinook is 118. Such is based upon an estimated 151 total angler days (based upon daily head counts), multiplied an average harvest per day of 0.64, plus the guided and TRT Fisheries harvest numbers. (To note, it is assumed that most of the retained Chinook were large in size class, however the guide outfitter reported 4 small males within their harvest.) The expanded estimate of the number of Chinook released is 479, using an average of 2.1 Chinook released per day per person.

There were 115 angler days reported on survey forms and an additional 20 angler days reported thru interviews. Average reported angling hours per day per person was 4.3 and the average number of Chinook released per day per person was 2.

Table 3: Summary of creel survey results

Source	# CH released	# CH retained	Expanded estimate # CH retained
Survey forms	274	80	
Interviews	10	6	Based on 151 total angler days x average harvest per day (0.64) + guided and TRT Fisheries harvest
Weir camp (guided)	70	15	
TRT Fisheries	91	7	
Totals	**445**	**108**	**118**

Additional creel survey data tables are provided in the Appendix of this report.

Alternative exit survey feasibility:

The concept of considering a future on-going methodology, based on an exit survey in Atlin to estimate harvest and angler effort was discussed amongst TRT Fisheries staff and with the main helicopter service provider. Although deemed feasible, the resulting merits of such appear to be limited for the following reasons:

1. Similar creel survey forms could be provided, however there would be a reliance on anglers to efficiently fill out and return them. (In 2015, almost all forms were collected by the project staff.)
2. Total angler effort in the form of daily head counts would be difficult to obtain, without being permanently at the site.
3. Sampling of Chinook and inspection for tags would not be conducted, which was the principal goal of the 2015 project.
4. The total number of Nakina Chinook retained appears to be relatively consistent across years, reducing the necessity of formally tracking it every year.

CONCLUSIONS

Discussion:

The primary objective of this project was to sample Chinook from the Nakina River, inclusive of inspecting for tags or tag loss. With a total number of 194 Chinook sampled, 111 of which were large, and 10 tag recoveries, the project was considered to be successful. The majority of Chinook samples (74%) were obtained by angling efforts of the agency crews, as opposed to other anglers. In this regard, it was more productive for the crew to angle and sample themselves, rather than wait for other sport anglers to catch a Chinook salmon. Catch rates of Chinook were highest in latter June and early July, and dropped dramatically after mid-July.

A comparison of the 2015 Nakina Creel survey to those conducted from 1993-1998 (using averages) is shown in Table 4 below. The number of angler days and number of retained Chinook salmon is relatively consistent. The previous average ~~of~~ number of Chinook released is twice that of the project in 2015. This could have been influenced by a greater level of Chinook abundance in those earlier years.

To note, the 2015 estimate of the number of Chinook retained (118) is relatively close to the estimated yearly average of 100 utilized for management in between those periods. For most anglers, longer term storage of fish is not available, therefore this along with possession limits, probably restricts the amount of fish that can feasibly be kept.

Table 4: Creel survey comparison

		Expanded estimates	
Year(s)	**Angler days**	**# CH released**	**# CH retained**
2015	151	479	118
1993-98 average	158	958	133

Recommendations:

In consideration of the experience and results from this 2015 project, it is suggested that it would be advantageous to conduct the project again in 2016. In this regard, the following recommendations are provided:

1. General methods successfully utilized in 2015 should be repeated. With the experience gained this year, it is anticipated even more samples could be feasibly collected in future years of the project.
2. The size class of retained Chinook should be delineated on the creel survey forms. Anglers could be asked to provide a length measurement on all retained Chinook. This would provide more certainty on how many were large Chinook, which is the size class used for management. It is further suggested that such sizes could be reported as a

total length, as per the regulations. The TRT Fisheries crew could also take total lengths, in order to calculate the conversion towards mid-eye to fork length.

3. Given that no Chinook were captured during the last 4 days of the 2015 project, consideration should be given to adjusting future project dates. June 14th to July 15th is suggested to be more appropriate.
4. TRT Fisheries has indicated that in 2016 they may be able to provide (in-kind) 2 extra crew members for 1 week during the project. In this regard, it would be best to provide such additional crew during the peak fishing period of late June to early August.
5. A portable propane freezer should be purchased for the project. Such would allow for the appropriate storage of food or samples and would also provide a means of making ice. This could in turn reduce the necessity of supply flights to the project site.
6. An electric fence to deter bears from gaining access to food at the camp is also recommended. Although bears did not access camp food in 2015, there were numerous sightings of bears either walking thru camps or in close vicinity. As well, the crew most often away from camp.
7. It might be advantageous to create an information brochure that could be handed out to anglers at the site. Such could provide material on the project intent and process, as well as supplemental information on Taku Chinook status or biology.
8. To avoid head sample storage, a CWT detector could be provided to the crew to allow them to recover CWT's from any adipose clipped fish.

As requested, consideration was given to developing a future / alternative methodology, based on an exit survey in Atlin to estimate harvest and angler effort. However, such is considered to be of limited merit or necessity, for the reasons described previously at the end of the results section of this report.

PROJECT PERFORMANCE REVIEW

Below is a list of the measures for project success from the original proposal. After each is a brief review of post-project performance.

1. The main criteria for project success was the number of Chinook inspected and sampled. The number of associated tag recoveries will also contribute to performance of this initiative.
    - With a total number of 194 Chinook inspected and sampled, along with 10 tag recoveries within such, the project was considered to be successful.
2. Given that other factors beyond the scope of this project could influence the number of Chinook available to sample, a measure of creel survey effort could be considered as a secondary performance indicator.
    - With a consistent daily efforts, adequate numbers of Chinook were available to sample.
3. Other supplemental measures of project performance will include: generating an estimate of harvest in the CAN Chinook sport fishery; and reporting out on the feasibility of a future alternative means of estimating harvest and effort.
    - A data based estimate of harvest in the CAN Chinook sport fishery was generated. The feasibility and benefits of an alternative means of estimating harvest and effort was considered and explained in this report.

APPENDIX

Table 5: Daily and cumulative summary of all Chinook samples

Date	Daily Large	Cumulative Large	Daily small/med	Cumulative Small/med	**Cumulative All**
Jun-19	1	1	1	1	**2**
Jun-20	1	2	1	2	**4**
Jun-21	1	3	2	4	**7**
Jun-22	3	6	0	4	**10**
Jun-23	4	10	1	5	**15**
Jun-24	3	13	0	5	**18**
Jun-25	4	17	3	8	**25**
Jun-26	10	27	2	10	**37**
Jun-27	3	30	3	13	**43**
Jun-28	4	34	0	13	**47**
Jun-29	7	41	5	18	**59**
Jun-30	5	46	8	26	**72**
Jul-01	5	51	2	28	**79**
Jul-02	17	68	17	45	**113**
Jul-03	13	81	11	56	**137**
Jul-04	3	84	7	63	**147**
Jul-05	5	89	6	69	**158**
Jul-06	7	96	5	74	**170**
Jul-07	4	100	4	78	**178**
Jul-08	3	103	2	80	**183**
Jul-09	2	105	1	81	**186**
Jul-10	0	105	0	81	**186**
Jul-11	1	106	0	81	**187**
Jul-12	1	107	0	81	**188**
Jul-13	1	108	0	81	**189**
Jul-14	2	110	0	81	**191**
Jul-15	1	111	2	83	**194**
Jul-16	0	111	0	83	**194**
Jul-17	0	111	0	83	**194**
Jul-18	0	111	0	83	**194**
Jul-19	0	111	0	83	**194**

Table 6: TRT Fisheries Chinook samples without scales

			Marks or clips			Length			
#	Date	Sex	UOP	AA	AD	MEF	size class	Source	Comments
1	20-Jun-15	M	N	N	N	620	M	creel crew	
2	20-Jun-15	F	N	N	N	740	L	creel crew	
3	21-Jun-15	M	N	N	N	620	M	creel crew	
4	21-Jun-15	M	N	N	N	860	L	creel crew	
5	21-Jun-15	M	N	N	N	520	M	creel crew	
6	22-Jun-15	F	N	N	N	840	L	outfitter client	
7	22-Jun-15	F	N	N	N	880	L	outfitter client	
8	22-Jun-15	F	N	N	N	795	L	outfitter client	
9	23-Jun-15	M	N	N	N	840	L	creel crew	
10	23-Jun-15	M	N	N	N	520	M	creel crew	
11	23-Jun-15	F	N	N	N	915	L	creel crew	
12	23-Jun-15	M	N	N	N	925	L	outfitter client	
13	23-Jun-15	F	N	N	N	840	L	creel crew	
14	24-Jun-15	M	N	N	N	665	L	creel crew	
15	24-Jun-15	M	N	N	N	820	L	creel crew	
16	24-Jun-15	M	N	N	N	695	L	creel crew	
17	25-Jun-15	F	N	N	N	855	L	creel crew	
18	25-Jun-15	M	N	N	N	760	L	creel crew	foul hooked
19	25-Jun-15	M	N	N	N	575	M	creel crew	Net scar
20	25-Jun-15	M	N	N	N	785	L	creel crew	
21	25-Jun-15	M	N	N	N	810	L	creel crew	
22	25-Jun-15	M	N	N	N	630	M	creel crew	
23	25-Jun-15	M	N	N	N	615	M	creel crew	
24	26-Jun-15	M	Y	Y	N	815	L	creel crew	TK16773
25	26-Jun-15	M	N	N	N	595	M	creel crew	
26	26-Jun-15	F	N	N	N	835	L	Hank	
27	26-Jun-15	F	N	N	N	860	L	Dick	
28	26-Jun-15	F	N	N	N	745	L	Hank	
29	26-Jun-15	F	N	N	N	695	L	Dick	
30	26-Jun-15	F	N	N	N	765	L	creel crew	
31	26-Jun-15	F	N	N	N	790	L	creel crew	
32	26-Jun-15	F	N	N	N	755	L	Dick	
33	26-Jun-15	F	N	N	N	645	L	Dick	
34	26-Jun-15	M	N	N	N	895	L	Stew	
35	27-Jun-15	M	N	N	N	595	M	Stew	
36	27-Jun-15	F	N	N	N	785	L	Bob	
37	27-Jun-15	M	N	N	N	670	L	Bob	
38	27-Jun-15	F	N	N	N	870	L	Dick	
39	28-Jun-15	F	Y	Y	N	790	L	Stew	TK19204
40	28-Jun-15	M	N	N	N	675	L	Stew	
41	28-Jun-15	M	N	N	N	780	L	Dick	
42	29-Jun-15	M	N	N	N	420	S	creel crew	
43	29-Jun-15	F	N	N	N	730	L	Dick	
44	29-Jun-15	M	N	N	N	790	L	creel crew	
45	29-Jun-15	F	N	N	N	850	L	creel crew	
46	29-Jun-15	M	N	N	N	650	M	creel crew	
47	29-Jun-15	F	N	N	N	720	L	outfitter client	
48	29-Jun-15	M	N	N	N	625	M	outfitter client	
49	29-Jun-15	M	Y	Y	N	635	M	outfitter client	TK03081
50	29-Jun-15	M	N	N	N	640	M	outfitter client	
51	29-Jun-15	M	N	N	N	720	L	Dick	
52	29-Jun-15	M	N	N	N	740	L	Stew	
53	29-Jun-15	F	N	N	N	725	L	Hank	
54	30-Jun-15	M	N	N	N	330	S	creel crew	
55	30-Jun-15	F	N	N	N	690	L	creel crew	
56	30-Jun-15	M	N	N	N	345	S	creel crew	
57	1-Jul-15	F	N	N	N	750	L	creel crew	
58	1-Jul-15	M	N	N	N	390	S	creel crew	
59	1-Jul-15	M	N	N	N	740	L	creel crew	
60	1-Jul-15	M	N	N	N	750	L	creel crew	
61	2-Jul-15	M	N	N	N	800	L	creel crew	
62	2-Jul-15	M	N	N	N	350	S	creel crew	

			Marks or clips			Length			
#	Date	Sex	UOP	AA	AD	MEF	size class	Source	Comments
63	2-Jul-15	M	N	N	N	540	M	creel crew	
64	2-Jul-15	M	N	N	N	450	S	creel crew	
65	3-Jul-15	M	N	N	N	315	S	creel crew	
66	3-Jul-15	M	N	N	N	330	S	creel crew	TK03144
67	3-Jul-15	M	N	N	N	640	M	creel crew	
68	3-Jul-15	M	N	N	N	620	M	creel crew	
69	3-Jul-15	M	N	N	N	300	S	creel crew	
70	3-Jul-15	M	N	N	N	820	L	ADFG	
71	3-Jul-15	M	N	N	N	810	L	ADFG	
72	3-Jul-15	M	N	N	N	585	M	ADFG	
73	3-Jul-15	M	N	N	N	500	M	ADFG	
74	4-Jul-15	F	N	N	N	720	L	creel crew	
75	4-Jul-15	F	N	N	N	580	M	creel crew	
76	4-Jul-15	F	N	N	N	670	L	creel crew	
77	4-Jul-15	F	N	N	N	495	M	creel crew	
78	4-Jul-15	M	N	N	N	540	M	creel crew	
79	4-Jul-15	F	N	N	N	410	S	creel crew	
80	4-Jul-15	M	N	N	N	775	L	creel crew	
81	4-Jul-15	M	N	N	N	390	S	creel crew	
82	4-Jul-15	M	N	N	N	580	M	creel crew	
83	4-Jul-15	F	N	N	N	530	M	creel crew	
84	5-Jul-15	F	N	N	N	770	L	creel crew	
85	5-Jul-15	M	N	N	N	610	M	creel crew	
86	5-Jul-15	F	N	N	N	665	L	creel crew	
87	5-Jul-15	F	N	N	N	685	L	creel crew	
88	5-Jul-15	M	N	N	N	380	S	creel crew	
89	5-Jul-15	F	N	N	N	795	L	creel crew	
90	5-Jul-15	F	N	N	N	555	M	creel crew	
91	5-Jul-15	F	N	N	N	390	S	creel crew	
92	5-Jul-15	F	N	N	N	640	M	creel crew	
93	5-Jul-15	M	N	N	N	715	L	creel crew	
94	5-Jul-15	M	N	N	N	635	M	creel crew	
95	6-Jul-15	F	N	N	N	675	L	creel crew	
96	6-Jul-15	M	N	N	N	700	L	creel crew	
97	6-Jul-15	F	N	N	N	315	S	creel crew	
98	6-Jul-15	M	N	N	N	620	M	creel crew	
99	6-Jul-15	F	N	N	N	780	L	creel crew	
100	6-Jul-15	F	N	N	N	845	L	creel crew	
101	6-Jul-15	M	N	N	N	780	L	creel crew	
102	6-Jul-15	F	N	N	N	640	M	creel crew	
103	6-Jul-15	M	N	N	N	690	L	creel crew	
104	6-Jul-15	M	N	N	N	665	L	creel crew	
105	6-Jul-15	F	N	N	N	575	M	creel crew	
106	6-Jul-15	M	N	N	N	530	M	creel crew	
107	7-Jul-15	M	N	N	N	730	L	creel crew	
108	7-Jul-15	M	N	N	N	755	L	creel crew	
109	7-Jul-15	M	N	N	N	595	M	creel crew	
110	7-Jul-15	F	N	N	N	775	L	creel crew	
111	7-Jul-15	F	N	N	N	310	S	creel crew	
112	7-Jul-15	M	N	N	N	340	S	creel crew	
113	7-Jul-15	F	N	N	N	455	S	creel crew	
114	8-Jul-15	M	N	N	N	710	L	creel crew	
115	8-Jul-15	F	Y	Y	N	640	M	creel crew	Tag #19926
116	8-Jul-15	M	N	N	N	315	S	creel crew	
117	8-Jul-15	F	N	N	N	740	L	creel crew	
118	8-Jul-15	F	N	N	N	670	L	creel crew	
119	9-Jul-15	M	N	N	N	710	L	creel crew	
120	11-Jul-15	F	N	N	N	780	L	outfitter client	
121	13-Jul-15	M	?	?	?	700	L	RRCS	Tag #19923
122	14-Jul-15	M	N	N	N	960	L	creel crew	
123	14-Jul-15	M	N	N	N	790	L	RRCS	
124	15-Jul-15	M	N	N	N	380	S	creel crew	
125	15-Jul-15	M	N	N	N	535	M	RRCS	

Table 7: TRT Fisheries Chinook samples with scales

		Marks or clips					Length			
Date	Sex	UO	AA	AC	Book #	Row #	MEF	POH	Size Class	Comments
19-Jun-15	F	N	N	N	16351	1	855	715	L	
19-Jun-15	M	N	N	N	16351	2	670	560	M	
26-Jun-15	M	N	N	N	16351	3	485	430	M	
27-Jun-15	M	N	N	N	16351	4	440	375	S	
27-Jun-15	M	N	N	N	16351	5	605	495	M	
28-Jun-15	F	N	N	N	16351	6	740	655	L	
30-Jun-15	M	N	N	N	16351	7	570	460	M	
30-Jun-15	F	N	N	N	16351	8	760	620	L	
30-Jun-15	M	N	N	N	16351	9	410	330	S	
30-Jun-15	F	N	N	N	16351	10	770	640	L	
30-Jun-15	M	N	N	N	16352	1	570	480	M	
30-Jun-15	M	N	N	N	16352	2	735	630	L	
30-Jun-15	M	N	N	N	16352	3	565	485	M	
30-Jun-15	M	N	N	N	16352	4	620	530	M	
30-Jun-15	F	N	N	N	16352	5	785	685	L	
30-Jun-15	M	N	N	N	16352	6	620	535	M	
01-Jul-15	M	N	N	N	16352	7	815	650	L	
01-Jul-15	M	N	N	N	16352	8	740	580	L	
01-Jul-15	M	N	N	N	16352	9	615	510	M	
07-Jul-15	F	N	N	N	16352	10	690	590	L	
09-Jul-15	M	N	Y	N	16353	1	750	640	L	Radio 14-044, Tag# 14070
09-Jul-15	M	N	N	N	16353	2	400	330	S	
12-Jul-15	F	N	N	N	16353	3	760	660	L	
15-Jul-15	M	Y	Y	N	16353	4	760	660	L	Tag# TK19487

Table 8: ADF&G Chinook samples

Date	Card	Fish	Sex	MEF	Size	Comments
2015-07-02	001	1	M	660	L	
2015-07-02	001	2	M	595	M	
2015-07-02	001	3	M	545	M	
2015-07-02	001	4	M	395	S	
2015-07-02	001	5	M	680	L	Spag Tag #19000
2015-07-02	001	6	M	595	M	
2015-07-02	001	7	M	515	M	
2015-07-02	001	8	M	635	M	
2015-07-02	001	9	M	670	L	
2015-07-02	001	10	M	685	L	
2015-07-02	002	1	M	825	L	
2015-07-02	002	2	M	375	S	
2015-07-02	002	3	M	675	L	
2015-07-02	002	4	M	725	L	
2015-07-02	002	5	F	725	L	
2015-07-02	002	6	M	585	M	
2015-07-02	002	7	M	440	M	
2015-07-02	002	8	F	800	L	
2015-07-02	002	9	F	745	L	
2015-07-02	002	10	M	440	M	
2015-07-02	003	1	F	715	L	
2015-07-02	003	2	M	530	M	
2015-07-02	003	3	M	520	M	
2015-07-02	003	4	F	790	L	
2015-07-02	003	5	M	420	M	
2015-07-02	003	6	M	705	L	
2015-07-02	003	7	F	785	L	
2015-07-02	003	8	M	645	M	
2015-07-02	003	9	M	660	L	
2015-07-02	003	10	F	750	L	
2015-07-03	004	1	F	840	L	
2015-07-03	004	2	M	605	M	
2015-07-03	004	3	M	735	L	
2015-07-03	004	4	F	740	L	
2015-07-03	004	5	M	635	M	
2015-07-03	004	6	M	755	L	
2015-07-03	004	7	F	710	L	
2015-07-03	004	8	M	810	L	
2015-07-03	004	9	F	780	L	
2015-07-03	004	10	M	670	L	
2015-07-03	005	1	M	905	L	
2015-07-03	005	2	M	450	M	
2015-07-03	005	3	M	905	L	
2015-07-03	005	4	M	690	L	Spag Tag #16997
2015-07-03	005	5	M	595	M	

Table 9: TRT Fisheries tag recoveries

			Source			
Date	**Species**	**Tag #**	**Sampled**	**Received**	**Found**	**Comments**
Jun-20	SK	S84350			1	
Jun-20	SK	S90843			1	
Jun-23	SK	S81172			1	
Jun-26	CH	TK16773	1			
Jun-27	CH	TK18619		1		
Jun-28	CH	TK14058			1	
Jun-28	CH	TK19204	1			
Jun-29	CH	TK03081	1			
Jun-29	CH	TK19296		1		
Jun-29	CH	TKO3115		1		
Jun-29	CH	TK18880		1		
Jul-03	CH	TK03297		1		
Jul-03	CH	TK18784		1		
Jul-03	CH	TK03120		1		
Jul-03	CH	TK03144	1			
Jul-08	CH	TK19926	1			
Jul-09	CH	TK19070	1			
Jul-09	CH	TK84969	1			Radio tag 14-044
Jul-13	CH	TK19010			1	
Jul-13	CH	TK19925		1		
Jul-15	CH	TK19487	1			

Table 10: Angling effort and catches

Date	Data source	# hours angled	# CH released	# CH retained
14-Jul-15	Survey form	3	0	0
15-Jul-15	Survey form	5	1	0
16-Jul-15	Survey form	4	0	0
17-Jul-15	Survey form	1	0	0
14-Jul-15	Survey form	3	0	0
15-Jul-15	Survey form	5	1	0
16-Jul-15	Survey form	5	0	0
17-Jul-15	Survey form	2	0	0
14-Jul-15	Survey form	2	0	0
15-Jul-15	Survey form	0	0	0
16-Jul-15	Survey form	2	0	0
17-Jul-15	Survey form	2.5	1	0
15-Jul-15	Survey form	2.5	0	0
16-Jul-15	Survey form	2	0	0
18-Jul-15	Survey form	2	0	0
14-Jul-15	Survey form	3	0	1
15-Jul-15	Survey form	3	1	1
16-Jul-15	Survey form	3	0	0
14-Jul-15	Survey form	1	0	0
15-Jul-15	Survey form	1	0	0
16-Jul-15	Survey form	2	0	0
17-Jul-15	Survey form	0	0	0
14-Jul-15	Survey form	1	0	0
15-Jul-15	Survey form	1	0	0
16-Jul-15	Survey form	0.5	0	0
14-Jul-15	Survey form	0.5	0	0
15-Jul-15	Survey form	0.25	0	1
16-Jul-15	Survey form	1	0	0
05-Jul-15	Survey form	3	0	1
06-Jul-15	Survey form	4	3	2
07-Jul-15	Survey form	3	0	2
06-Jul-15	Survey form	3	0	1
07-Jul-15	Survey form	3	2	1
06-Jul-15	Survey form	3	2	1
07-Jul-15	Survey form	3	4	2
05-Jul-15	Survey form	5	4	2
06-Jul-15	Survey form	3	3	1
07-Jul-15	Survey form	2	2	2
05-Jul-15	Survey form	2	5	3
04-Jul-15	Survey form	2	0	0
05-Jul-15	Survey form	6	0	3
06-Jul-15	Survey form	2	0	0
04-Jul-15	Survey form	2	0	0
05-Jul-15	Survey form	6	0	0
06-Jul-15	Survey form	1.5	0	0
01-Jul-15	Survey form	2	0	1
02-Jul-15	Survey form	1	0	0
01-Jul-15	Survey form	2	0	1
02-Jul-15	Survey form	1	0	1
02-Jul-15	Survey form	4.3	1	3
03-Jul-15	Survey form	4.7	3	2
04-Jul-15	Survey form	3.1	4	1
02-Jul-15	Survey form	3.8	4	1
03-Jul-15	Survey form	6.1	3	2
04-Jul-15	Survey form	2.76	2	2
01-Jul-15	Survey form	4.7	1	1
02-Jul-15	Survey form	6.3	4	1
03-Jul-15	Survey form	5.7	5	2
04-Jul-15	Survey form	1.1	2	0
02-Jul-15	Survey form	4.1	0	1

Date	Data source	# hours angled	# CH released	# CH retained
03-Jul-15	Survey form	6	4	3
04-Jul-15	Survey form	0.5	0	0
02-Jul-15	Survey form	6	18	0
03-Jul-15	Survey form	7	14	0
02-Jul-15	Survey form	6	8	0
03-Jul-15	Survey form	7	4	0
02-Jul-15	Survey form	6	4	0
03-Jul-15	Survey form	7	2	0
26-Jun-15	Survey form	4	3	0
27-Jun-15	Survey form	5	6	1
28-Jun-15	Survey form	5	7	0
29-Jun-15	Survey form	5	7	1
30-Jun-15	Survey form	5	7	1
01-Jul-15	Survey form	5	8	0
02-Jul-15	Survey form	6	8	2
26-Jun-15	Survey form	3	5	0
27-Jun-15	Survey form	4	6	0
28-Jun-15	Survey form	5	7	1
29-Jun-15	Survey form	5	5	1
30-Jun-15	Survey form	5	3	0
01-Jul-15	Survey form	6	14	0
02-Jul-15	Survey form	6	9	2
03-Jul-15	Survey form	1	0	2
26-Jun-15	Survey form	1	0	0
27-Jun-15	Survey form	3	6	0
28-Jun-15	Survey form	3	4	1
29-Jun-15	Survey form	3	1	1
30-Jun-15	Survey form	3	5	1
01-Jul-15	Survey form	2	1	1
02-Jul-15	Survey form	12	0	1
02-Jul-15	Survey form	12	2	1
02-Jul-15	Survey form	12	1	2
02-Jul-15	Survey form	14	1	1
27-Jun-15	Survey form	3	0	0
28-Jun-15	Survey form	6	0	0
29-Jun-15	Survey form	6	0	0
30-Jun-15	Survey form	3	0	2
27-Jun-15	Survey form	6	5	0
28-Jun-15	Survey form	8	3	1
29-Jun-15	Survey form	5	2	1
30-Jun-15	Survey form	2	1	2
26-Jun-15	Survey form	8	3	1
27-Jun-15	Survey form	8	2	1
28-Jun-15	Survey form	10	3	0
29-Jun-15	Survey form	7	2	0
30-Jun-15	Survey form	4	0	2
07-Jul-15	Survey form	0	0	0
08-Jul-15	Survey form	0	0	0
09-Jul-15	Survey form	3	0	1
07-Jul-15	Survey form	4	7	0
08-Jul-15	Survey form	6	6	0
09-Jul-15	Survey form	5	4	2
07-Jul-15	Survey form	4	1	0
08-Jul-15	Survey form	6	4	0
09-Jul-15	Survey form	7	3	1
19-Jun-15	Interview	9	0	1
19-Jun-15	Interview	9	0	1
19-Jun-15	Interview	9	0	1
19-Jun-15	Interview	9	0	1
19-Jun-15	Interview	9	0	1
19-Jun-15	Interview	9	0	0
19-Jun-15	Interview	9	0	0
19-Jun-15	Interview	9	0	0
20-Jun-15	Interview	2.5	1	1
20-Jun-15	Interview	2.5	1	0
20-Jun-15	Interview	2.5	1	0
20-Jun-15	Interview	2.5	1	0
22-Jun-15	Interview	5	1	0
22-Jun-15	Interview	5	1	0
22-Jun-15	Interview	5	1	0
23-Jun-15	Interview	7	1	0
23-Jun-15	Interview	7	2	0
25-Jun-15	Interview	6	0	0
25-Jun-15	Interview	6	0	0
25-Jun-15	Interview	6	0	0
	Totals	**585**	**284**	**86**
	Average	**4.33**	**2.10**	**0.64**

Table 11: Daily counts of total anglers

Date	Total # Anglers
19-Jun-15	8
20-Jun-15	4
22-Jun-15	3
23-Jun-15	2
25-Jun-15	3
26-Jun-15	4
27-Jun-15	4
29-Jun-15	2
01-Jul-15	7
02-Jul-15	14
03-Jul-15	9
04-Jul-15	8
05-Jul-15	7
06-Jul-15	3
07-Jul-15	4
08-Jul-15	4
09-Jul-15	7
10-Jul-15	9
11-Jul-15	4
12-Jul-15	0
13-Jul-15	8
14-Jul-15	8
15-Jul-15	8
16-Jul-15	11
17-Jul-15	10
18-Jul-15	0
Total	**151**