Taku River Canadian Commercial Fishery Sampling & Stock Assessment 2019

Final Report
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Executive Summary

The Northern Endowment Fund (NEF) provided Fisheries and Oceans Canada (DFO) with monies to assist with biological sampling of Chinook (*Oncorhynchus tshawytscha*), sockeye (*Oncorhynchus nerka*) and coho (*Oncorhynchus kisutch*) salmon from the Taku River Canadian commercial fishery between 02 July and 11 October 2019.

There was no directed Chinook salmon fishery in 2019 due to poor returns and all Chinook salmon caught as bycatch during the directed sockeye salmon fishery were required to be released. The sockeye salmon fishery start date was delayed 16 days later than typical and mesh size and set net restrictions were in place for the first week of this fishery to avoid encountering Chinook salmon to the largest extent possible. A total of 135 Chinook salmon were caught as bycatch during the directed sockeye fishery and all were live released without sampling. Seven spaghetti tags were returned to DFO from these 135 released Chinook salmon.

A total of 21,395 sockeye were caught; 1,975 (9%) were inspected for tag loss, sampled for matched length and age, and 1,828 non-matched otolith samples were collected for stock composition analysis. A total of 558 spaghetti tags were recovered, and used to inform a concurrent Taku River sockeye salmon mark-recapture run size estimation project. Four additional tags were recovered post season and will be used in post season run estimates.

A total of 12,145 coho were caught; 8,857 (73%) were inspected for marks; 107 adipose clips were observed, 93 heads were collected for CWT analysis, and 221 spaghetti tags were recovered to inform a concurrent Taku River coho salmon mark-recapture run size estimation project. A total of 1,697 coho (14%) were sampled for matched length and age .

All information gathered is integral to both in season fisheries assessment and management as well as postseason analysis and run reconstructions.

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1.0 Introduction

The Taku River drains a large watershed primarily located in northwestern British Columbia. The river system contains numerous significant tributaries which flow northwards from the headwaters then turn to flow westwards ultimately draining to the Pacific Ocean in Southeast Alaska near Juneau (Figure 1). The Taku River produces the largest runs of Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*) in British Columbia north of the Skeena River, and in all of Southeast Alaska (McPherson et al. 1998a; Yanusz et al. 1999), as well as a large sockeye salmon (*Oncorhynchus nerka*) run (Pestal et al., 2020).

Salmon returning to the Taku River pass through a U.S. offshore troll fishery before entering inside Alaskan waters where they encounter commercial seine, commercial drift gillnet, subsistence, and recreational fisheries. After entering the Taku River salmon are harvested by commercial drift/set gillnet and Aboriginal fisheries in Canada.

The Canadian commercial fishery is located on the lower Taku River from approximately 50 metres upstream of the Canada/United States border, to Yellow Bluff, approximately 18 kilometres upstream of the border, excluding Flannigan and Southfork Sloughs (Figure 1).

This project involved Fisheries and Oceans Canada (DFO) Aquatic Science Technicians collaborating with lower Taku River commercial fishers in the collection of coded wire tags (CWT), spaghetti tags, otoliths, age, sex, and length samples as applicable from Chinook, sockeye and coho salmon. These data are vital elements of the Taku River fishery management and stock assessment programs. CWT recovery is used in the estimation of marine survival and annual smolt production of Chinook and coho. Spaghetti tag recovery is used in the estimation of adult Chinook, sockeye and coho abundance. Otoliths are used to estimate contributions of enhanced sockeye. Age, sex and lengths comprise baseline stock assessment data used for stock recruitment analyses, forecasting, and monitoring stock health.

Technicians also collected daily commercial and Aboriginal fishery performance data to inform in season management of the fisheries.

The activities of this project are essential components of Taku River Chinook, sockeye and coho management and enhancement plans as identified in Salmon Management and Enhancement Plans for the Stikine, Taku and Alsek Rivers, 2019 TCTR Report (19)-3.

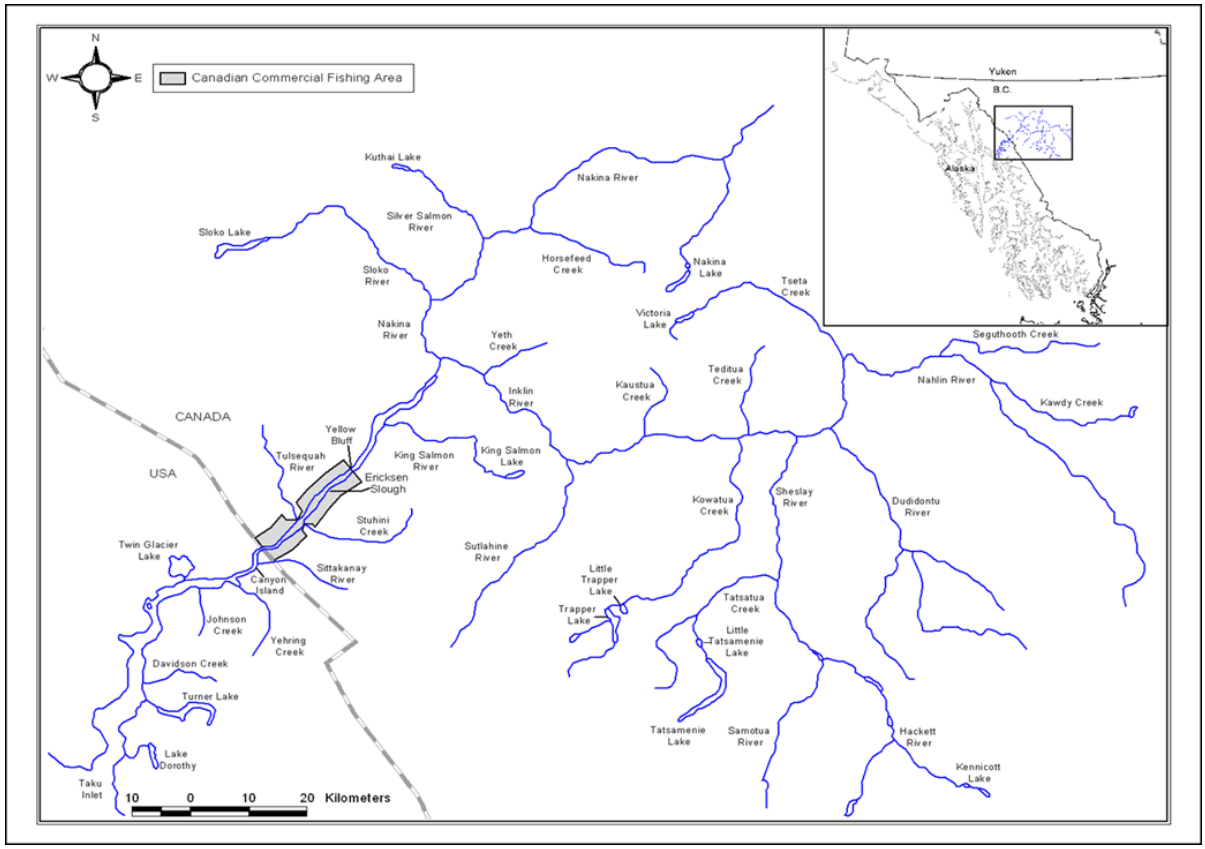

Figure 1. The Taku River watershed with the Canadian commercial fishing area highlighted in grey.

2.0 Objectives

This project was for the collection of CWT, spaghetti tag, otolith, stock identification, age, sex, and length samples as applicable from each species of Chinook, sockeye and coho salmon in the lower Taku River commercial and assessment fisheries in 2019. These data are essential and shared among several other integral joint Canada/U.S. stock assessment projects that analyze and report respective results. More specifically, the objectives of this project were to:

- Inspect for and recover CWTs from Chinook and coho salmon in order estimate the number of smolt that emigrated from the Taku River in prior years, determine interception and marine survival rates, as well as contribute to future run forecasting.

- Inspect for and recover spaghetti tags in order to facilitate the estimation of the in-river abundance of Chinook, sockeye, and coho salmon both in-season and postseason.

- Collect stock identification samples from sockeye salmon, specifically otoliths, in order to estimate contributions of enhanced salmon which is critical to enhancement monitoring and planning, but also key to determining harvest shares under Chapter 1 of the PST. This information is used for in-season management and postseason run reconstruction.

- Collect age, sex and length samples from Chinook, sockeye and coho salmon in order to monitor stock health and maintain stock-recruitment datasets used in annual forecasting.

3.0 Methods

The DFO sampling crew consisted of two technicians based out of a permanent DFO field camp located at Ericksen Slough upstream of the commercial fishery on the Taku River. The crew gathered fishery performance data and sampled commercial catch on the Taku River in Canada from 02 July and 11 October 2019 at various commercial catch landing stations.

The field crew gathered and collated all mandatory fishery reporting data daily and forwarded results back to the main DFO office in Whitehorse to inform in-season management and stock assessment programs. They sampled the landed commercial catch as directed, and assisted the Alaska Department of Fish and Game (ADF&G) with other cooperative stock assessment projects as able.

Most Taku River commercial salmon catches are landed gutted with head removed. This made sex determination by samplers impossible in most cases. The collection of heads for CWT and otolith extraction required cooperation from the commercial fishers and means that the otolith data are not matched with age and size data. The return of spaghetti tags from all species of salmon was a requirement under the commercial fishery licence conditions; therefore it is assumed that the entire catch was examined for spaghetti tags. Secondary mark sampling is conducted to verify tag reporting rates.

Chinook Salmon Sampling

Due to poor Chinook salmon returns, there was no directed commercial or assessment fisheries in 2019 for Chinook salmon. Additional conservation efforts included the mandatory live release of all Chinook bycatch in directed fisheries, and the directed sockeye fishery start date was delayed 16 days later than typical and mesh size and set net restrictions were in place for the first week of this fishery to avoid encountering Chinook salmon. As a result, traditional sampling procedures were not conducted and biological data targets (Table 1) were not completed. All Chinook caught as bycatch in the directed sockeye and coho fisheries were counted by fishers and size was estimated before live release. Any spaghetti tags observed were recovered by fishers and submitted to DFO.

Sockeye Salmon Sampling

Sockeye salmon commercial harvest was sampled for biological data as per weekly targets (Table 1). Biological sampling included measurement of cleithral arch to fork length (CAF) to the nearest 5 millimeters, and collection of five scales for aging and genetic analysis. Harvest was also inspected for any spaghetti tags not returned by fishers, or the presence of a tag scar that would indicate loss of a spaghetti tag. Commercial fishers cooperated with DFO samplers to collect sockeye heads from processed catch and provided them weekly for otolith extraction (non-matched). The otoliths were excised and stored in numbered otolith sample trays. Otoliths were bathed in a 5% chlorine solution for 5 minutes before being rinsed with a de-chlorination solution,

containing 0.7% sodium thiosulfate. A final rinse with water was completed before thoroughly draining and drying the stored otoliths. Two trays (192 otolith pairs) were delivered to the ADF&G camp downstream at Canyon Island each week for transport to the ADF&G lab in Juneau, Alaska for analysis. Otoliths were analyzed in-season to provide weekly stock identification information.

Coho Salmon Sampling

Coho salmon commercial harvest was sampled for biological data as per weekly targets (Table 1). Biological sampling included measurement of cleithral arch to fork length (CAF) to the nearest 5 millimeters, and collection of five scales for aging and genetic archiving. Commercial fishers are required to land coho salmon missing their adipose fin with head on for CWT sampling. These heads were recovered, tagged and frozen for later coded wire tag removal and analysis. A defined proportion of the total harvest was inspected for presence/absence of an adipose fin (denoting presence of a CWT) to determine fishers compliance with reporting requirements (Table 1). Harvest was also inspected for any spaghetti tags not returned by fishers, or the presence of a tag scar that would indicate loss of a spaghetti tag.

Table 1. Taku River Commercial fishery sample targets for 2019.

		Target*					No.	Stat.
Species	Fishery	CWT	Sec. Marks	Otoliths	Age	Sex--Length	Weeks	Weeks
Sockeye	Comm.	-	200	192	200	200	9	26-33
Coho	Comm.	Submissions + >40% of catch	>40% of catch	-	375	375	3	34-36
* Targets are weekly except for coho which are season totals.								

Scales samples were sent to DFO's Sclerochronology Laboratory at the Pacific Biological Station in Nanaimo, B.C. for analysis. Results are stored in internal DFO databases. Otolith samples were delivered to ADF&G weekly inseason and analysed at the Mark Recovery Laboratory in Juneau, Alaska. Data are stored in an online database (mtalab.adfg.alaska.gov).

CWT heads recovered from adipose clipped marked fish were sent to DFO's contracted lab (J.O. Thomas and Associates) for CWT extraction. Tag recovery data will be stored in DFO databases, once this data set is verified, it will be forwarded to and inputted into the Regional Mark Processing Centre website (www.rmpc.org).

To estimate the abundance of coho salmon smolt emigrating from Taku River upstream of Canyon Island in 2018 (Figure 1), emigrating smolts were injected with CWT and marked with adipose fin clips in the spring of 2018. Returning adult coho salmon were inspected for marks in inriver fisheries in 2019. The marked fraction (number of fish missing adipose fins / total inspected) of coho salmon captured in the commercial fishery will contribute to the estimation of the number of smolts that emigrated from the Taku River in 2018. This project is reported by ADF&G.

To estimate abundance of adult salmon, spaghetti tags are applied to returning adults (Event I) at an ADF&G fishwheel and gillnet project downstream of the Canadian commercial fishery at Canyon Island in the U.S.. The recovery of spaghetti tags in the commercial fishery is "Event II" of the mark-recapture study.

4.0 Results

There was no assessment fishery or directed commercial fishery for Chinook, and the release of all Chinook bycatch was mandatory in 2019, as Chinook runs were very poor. As a result, usual Chinook sampling and inspection procedures were not conducted (Table 2). Chinook salmon caught as bycatch during the directed sockeye and coho fisheries were recorded by fishers for count and size estimation only, with large Chinook defined as MEF > 659 mm. Any spaghetti tags observed were recovered by fishermen and submitted to DFO. The commercial fishery targeted sockeye from 03 July to 13 August, and coho from 18 August to 11 October.

4.1 Chinook Salmon

A total of 135 Chinook salmon were caught as bycatch and released in the directed sockeye fishery; 93 large, 24 non-large and 18 of unknown size. Chinook bycatch were not sampled for age and length, or inspected for adipose clips, therefore no CWT heads were collected.. Seven Chinook spaghetti tags were observed and recovered by fishers.

Commercial sampling targets for Chinook were not achieved in 2019 due to the absence of a directed Chinook fishery.

Table 2. Total samples for Chinook salmon in 2019 by statistical week.

Statistical Week	Week Ending	Released Commercial Bycatch			Spaghetti Tags Observed
		Large	Non-Large	Unknown	
27	6-Jul	24	6	0	0
28	13-Jul	34	11	8	3
29	20-Jul	14	7	4	2
30	27-Jul	5	0	3	1
31	3-Aug	3	0	0	1
32	10-Aug	5	0	0	0
33	17-Aug	6	0	3	0
34	24-Aug	1	0	0	0
35	31-Aug	1	0	0	0
36	7-Sep	0	0	0	0
37	14-Sep	0	0	0	0
38	21-Sep	0	0	0	0
39	28-Sep	0	0	0	0
40	5-Oct	0	0	0	0
41	12-Oct	0	0	0	0
	Total	**93**	**24**	**18**	**7**

4.2 Sockeye Salmon

A total of 21,395 sockeye were caught; 1,975 (9%) were inspected for marks and sampled for age and length (Table 3). A total of 558 spaghetti tags were recovered and 1,828 otolith samples were collected.

Table 3. Total samples for sockeye salmon in 2019 by statistical week.

Statistical Week	Week Ending	Commercial Catch	Inspected	Age Collected	Lengths Collected (CAF)	Otoliths Collected	Spaghetti Tags Recovered
27	6-Jul	585	200	200	200	192	14
28	13-Jul	1435	200	200	200	192	41
29	20-Jul	2497	200	200	200	192	57
30	27-Jul	4423	200	200	200	192	71
31	3-Aug	5796	200	200	200	192	193
32	10-Aug	2222	200	200	200	192	45
33	17-Aug	2645	200	200	200	192	74
34	24-Aug	1157	200	200	200	192	40
35	31-Aug	461	200	200	200	160	11
36	7-Sep	125	126	126	126	114	7
37	14-Sep	45	45	45	45	18	3
38	21-Sep	4	4	4	4	0	2
39	28-Sep	0	0	0	0	0	0
40	5-Oct	0	0	0	0	0	0
41	12-Oct	0	0	0	0	0	0
	Total	**21,395**	**1,975**	**1,975**	**1,975**	**1,828**	**558**

4.3 Coho Salmon

A total of 12,145 coho were caught; 8,857 (73%) were inspected for adipose clips (Table 4). 107 adipose clips were observed and 93 CWT heads were collected, and 1,697 fish were sampled for age and length. Sex was determined for 94 CWT marked coho. A total of 221 spaghetti tags were recovered.

Table 4. Total samples for coho salmon in 2019 by statistical week.

Statistical Week	Week Ending	Commercial Catch	Inspected	Age Collected	Sex Collected	Lengths Collected (CAF)	Adipose Clips Observed	CWT Recovered	Spaghetti Tags Recovered
27	6-Jul	0	0	0	0	0	0	0	0
28	13-Jul	18	18	18	0	18	0	0	1
29	20-Jul	98	92	92	0	92	0	0	3
30	27-Jul	339	312	127	1	127	2	1	3
31	3-Aug	555	509	128	0	128	3	0	12
32	10-Aug	397	365	127	2	127	2	2	3
33	17-Aug	992	708	129	6	129	6	6	20
34	24-Aug	1478	955	131	3	131	6	3	11
35	31-Aug	986	769	130	2	130	5	2	15
36	7-Sep	2393	1463	147	19	147	22	19	47
37	14-Sep	2204	1394	146	21	146	21	20	40
38	21-Sep	1553	1158	144	24	144	24	24	44
39	28-Sep	462	461	131	6	131	6	6	11
40	5-Oct	538	538	132	7	132	7	7	7
41	12-Oct	132	115	115	3	115	3	3	4
	Total	**12,145**	**8,857**	**1,697**	**94**	**1,697**	**107**	**93**	**221**

5.0 Discussion

Data gathered through this project are integral to several joint Canada/U.S. fishery management and stock assessment programs that inform Pacific Salmon Treaty (PST) obligations. Data are shared between Parties and reported in a variety of fora and reports, the primary report being the

Transboundary Technical Committees "Preliminary Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2019".

Scheduling and operations for the 2019 project went as planned, with the exception that objectives for Chinook salmon were altered in response to a poor return. Priority of conservation for Chinook salmon resulted in project objectives not being fully met in 2019. Objectives for sockeye and coho salmon were fully met.

1. Recover CWTs from Chinook and coho salmon.

   Chinook were not inspected for adipose clips and no CWTs were recovered. There were 12,145 coho salmon inspected for adipose clips, 107 adipose clips observed and 93 coho heads recovered.

2. Recover spaghetti tags from Chinook, sockeye and coho salmon.

   Seven spaghetti tags were recovered from live released Chinook bycatch. A total of 558 and 221 spaghetti tags were collected from sockeye and coho, respectively.

3. Collect stock identification samples from sockeye salmon, specifically otoliths.

   A total of 1,828 otoliths were collected, delivered and analysed inseason.

4. Collect age, sex and length samples from Chinook, sockeye and coho salmon.

   Age and sex samples were not taken for Chinook, but bycatch was estimated for length. There were 1,975 sockeye and 1,697 coho age and lengths collected. Sex was determined for 94 coho.

The activities supported by this project will contribute to sustainable fishery management and the assessment of current productivity, abundance, and exploitation of Taku River salmon.

6.0 Budget Summary

The total budget approved for this project by the Northern Endowment Fund was $54,910. Project expenditures amounted to $49,650.47 which is slightly over ($231.47) the 90% of the approved budget previously advanced by the PSC. The 10% holdback of $5,491 is not required from the PSC and DFO will cover the small overage along with its in-kind contributions to the project of $106,956. A budget summary of expenditures can be referenced in Appendix 4.

7.0 Acknowledgements

Sean Stark managed logistics and coordinated the project. Teresa Bachynski, Philippe Beaulieu, and Danielle Hosick sampled the commercial fishery, organized and managed samples, collated and organized data, and reported results as required. Individuals fishing commercially and/or for Taku Wild captured salmon and recovered tags. Julie Bednarski and Stephan Warta of ADF&G were integral in coordinating sample exchanges and ensuring otolith samples made it to the lab in Juneau, Alaska each week. Colleen Claggett and Business Management staff assisted with the financial administration and accounting for this project.

8.0 Literature Cited

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9.0 Appendices

Appendix 1. Chinook daily commercial catches and samples, 2019.

Statistical Week	Date	Released Commercial Bycatch			Spaghetti Tags Observed
		Large	Non-Large	Unknown	
27	2-Jul	14	5	0	0
27	3-Jul	10	1	0	0
27	4-Jul				
27	5-Jul				
27	6-Jul				
28	7-Jul	5	5	3	2
28	8-Jul	18	4	2	0
28	9-Jul	11	2	3	1
28	10-Jul				
28	11-Jul				
28	12-Jul				
28	13-Jul				
29	14-Jul	6	3	1	2
29	15-Jul	3	1	3	0
29	16-Jul	4	3	0	0
29	17-Jul	1	0	0	0
29	18-Jul				
29	19-Jul				
29	20-Jul				
30	21-Jul	1	0	0	1
30	22-Jul	3	0	2	0
30	23-Jul	0	0	1	0
30	24-Jul	0	0	0	0
30	25-Jul	1	0	0	0
30	26-Jul				
30	27-Jul				
31	28-Jul	0	0	0	1
31	29-Jul	1	0	0	0
31	30-Jul	0	0	0	0
31	31-Jul	2	0	0	0
31	1-Aug				
31	2-Aug				
31	3-Aug				
32	4-Aug	3	0	0	0
32	5-Aug	1	0	0	0
32	6-Aug	1	0	0	0
32	7-Aug				
32	8-Aug				
32	9-Aug				
32	10-Aug				
33	11-Aug	3	0	1	0
33	12-Aug	0	0	2	0
33	13-Aug	3	0	0	0
33	14-Aug				
33	15-Aug				
33	16-Aug				
33	17-Aug				
34	18-Aug	1	0	0	0
34	19-Aug	0	0	0	0
34	20-Aug	0	0	0	0
34	21-Aug				
34	22-Aug				
34	23-Aug				
34	24-Aug				

Statistical Week	Date	Released Commercial Bycatch			Spaghetti Tags Observed
		Large	Non-Large	Unknown	
35	25-Aug	1	0	0	0
35	26-Aug	0	0	0	0
35	27-Aug	0	0	0	0
35	28-Aug	0	0	0	0
35	29-Aug				
35	30-Aug				
35	31-Aug				
36	1-Sep	0	0	0	0
36	2-Sep	0	0	0	0
36	3-Sep	0	0	0	0
36	4-Sep	0	0	0	0
36	5-Sep				
36	6-Sep				
36	7-Sep				
37	8-Sep	0	0	0	0
37	9-Sep	0	0	0	0
37	10-Sep	0	0	0	0
37	11-Sep	0	0	0	0
37	12-Sep	0	0	0	0
37	13-Sep				
37	14-Sep				
38	15-Sep	0	0	0	0
38	16-Sep	0	0	0	0
38	17-Sep	0	0	0	0
38	18-Sep	0	0	0	0
38	19-Sep				
38	20-Sep				
38	21-Sep				
39	22-Sep	0	0	0	0
39	23-Sep	0	0	0	0
39	24-Sep	0	0	0	0
39	25-Sep	0	0	0	0
39	26-Sep	0	0	0	0
39	27-Sep				
39	28-Sep				
40	29-Sep	0	0	0	0
40	30-Sep	0	0	0	0
40	1-Oct	0	0	0	0
40	2-Oct	0	0	0	0
40	3-Oct	0	0	0	0
40	4-Oct				
40	5-Oct				
41	6-Oct	0	0	0	0
41	7-Oct	0	0	0	0
41	8-Oct	0	0	0	0
41	9-Oct	0	0	0	0
41	10-Oct				
41	11-Oct				
41	12-Oct				
	Total	**93**	**24**	**18**	**7**

Appendix 2. Sockeye daily commercial catches and samples, 2019.

Statistical Week	Date	Commercial Catch	Inspected	Ages Collected	Lengths Collected (CAF)	Otoliths Collected	Spaghetti Tags Recovered
27	2-Jul	353	100	100	100	192	8
27	3-Jul	232	100	100	100	0	6
27	4-Jul						
27	5-Jul						
27	6-Jul						
28	7-Jul	591	100	100	100	192	18
28	8-Jul	465	60	60	60	0	15
28	9-Jul	379	40	40	40	0	8
28	10-Jul						
28	11-Jul						
28	12-Jul						
28	13-Jul						
29	14-Jul	1039	100	100	100	192	21
29	15-Jul	563	35	35	35	0	25
29	16-Jul	523	35	35	35	0	5
29	17-Jul	372	30	30	30	0	6
29	18-Jul						
29	19-Jul						
29	20-Jul						
30	21-Jul	947	100	100	100	192	10
30	22-Jul	1,008	60	60	60	0	17
30	23-Jul	920	40	40	40	0	13
30	24-Jul	818	0	0	0	0	14
30	25-Jul	730	0	0	0	0	17
30	26-Jul						
30	27-Jul						
31	28-Jul	1055	100	100	100	192	30
31	29-Jul	1,283	50	50	50	0	27
31	30-Jul	2,080	30	30	30	0	86
31	31-Jul	1,378	20	20	20	0	50
31	1-Aug						
31	2-Aug						
31	3-Aug						
32	4-Aug	739	100	100	100	186	17
32	5-Aug	762	40	40	40	6	18
32	6-Aug	721	60	60	60	0	10
32	7-Aug						
32	8-Aug						
32	9-Aug						
32	10-Aug						
33	11-Aug	1,045	100	100	100	192	26
33	12-Aug	926	50	50	50	0	24
33	13-Aug	674	50	50	50	0	24
33	14-Aug						
33	15-Aug						
33	16-Aug						
33	17-Aug						
34	18-Aug	227	90	90	90	134	8
34	19-Aug	427	70	70	70	58	18
34	20-Aug	503	40	40	40	0	14
34	21-Aug						
34	22-Aug						
34	23-Aug						
34	24-Aug						

Statistical Week	Date	Commercial Catch	Inspected	Ages Collected	Lengths Collected (CAF)	Otoliths Collected	Spaghetti Tags Recovered
35	25-Aug	205	120	120	120	128	7
35	26-Aug	74	30	30	30	0	2
35	27-Aug	76	50	50	50	32	0
35	28-Aug	106	0	0	0	0	2
35	29-Aug						
35	30-Aug						
35	31-Aug						
36	1-Sep	42	43	43	43	36	3
36	2-Sep	32	32	32	32	30	2
36	3-Sep	25	25	25	25	22	1
36	4-Sep	26	26	26	26	26	1
36	5-Sep						
36	6-Sep						
36	7-Sep						
37	8-Sep	12	11	11	11	8	2
37	9-Sep	15	16	16	16	4	1
37	10-Sep	16	16	16	16	6	0
37	11-Sep	2	2	2	2	0	0
37	12-Sep	0	0	0	0	0	0
37	13-Sep						
37	14-Sep						
38	15-Sep	2	2	2	2	0	1
38	16-Sep	0	0	0	0	0	1
38	17-Sep	1	1	1	1	0	0
38	18-Sep	1	1	1	1	0	0
38	19-Sep	0	0	0	0	0	0
38	20-Sep						
38	21-Sep						
39	22-Sep	0	0	0	0	0	0
39	23-Sep	0	0	0	0	0	0
39	24-Sep	0	0	0	0	0	0
39	25-Sep	0	0	0	0	0	0
39	26-Sep	0	0	0	0	0	0
39	27-Sep						
39	28-Sep						
40	29-Sep	0	0	0	0	0	0
40	30-Sep	0	0	0	0	0	0
40	1-Oct	0	0	0	0	0	0
40	2-Oct	0	0	0	0	0	0
40	3-Oct	0	0	0	0	0	0
40	4-Oct						
40	5-Oct						
41	6-Oct	0	0	0	0	0	0
41	7-Oct	0	0	0	0	0	0
41	8-Oct	0	0	0	0	0	0
41	9-Oct	0	0	0	0	0	0
41	10-Oct	0	0	0	0	0	0
41	11-Oct	0	0	0	0	0	0
41	12-Oct						
Total		**21,395**	**1,975**	**1,975**	**1,975**	**1,828**	**558**

Appendix 3. Coho daily commercial catches and samples, 2019.

Statistical Week	Date	Commercial Catch	Inspected	Ages Collected	Sex Collected	Lengths Collected (CAF)	Adipose Clips Observed	CWT Recovered	Spaghetti Tags Recovered
27	2-Jul	0	0	0	0	0	0	0	0
27	3-Jul	0	0	0	0	0	0	0	0
27	4-Jul								
27	5-Jul								
27	6-Jul								
28	7-Jul	9	9	9	0	9	0	0	1
28	8-Jul	7	7	7	0	7	0	0	0
28	9-Jul	2	2	2	0	2	0	0	0
28	10-Jul								
28	11-Jul								
28	12-Jul								
28	13-Jul								
29	14-Jul	34	33	33	0	33	0	0	0
29	15-Jul	26	25	25	0	25	0	0	1
29	16-Jul	12	10	10	0	10	0	0	0
29	17-Jul	26	24	24	0	24	0	0	2
29	18-Jul								
29	19-Jul								
29	20-Jul								
30	21-Jul	88	88	62	1	62	2	1	0
30	22-Jul	66	66	40	0	40	0	0	1
30	23-Jul	36	36	25	0	25	0	0	0
30	24-Jul	72	56	0	0	0	0	0	1
30	25-Jul	77	66	0	0	0	0	0	1
30	26-Jul								
30	27-Jul								
31	28-Jul	73	73	60	0	60	0	0	1
31	29-Jul	139	139	42	0	42	2	0	1
31	30-Jul	204	174	25	0	25	0	0	4
31	31-Jul	139	123	1	0	1	1	0	6
31	1-Aug								
31	2-Aug								
31	3-Aug								
32	4-Aug	159	159	60	0	60	0	0	2
32	5-Aug	130	130	40	0	40	0	0	1
32	6-Aug	108	76	27	2	27	2	2	0
32	7-Aug								
32	8-Aug								
32	9-Aug								
32	10-Aug								
33	11-Aug	446	410	64	5	64	5	5	15
33	12-Aug	297	216	40	1	40	1	1	3
33	13-Aug	249	82	25	0	25	0	0	2
33	14-Aug								
33	15-Aug								
33	16-Aug								
33	17-Aug								
34	18-Aug	348	326	82	2	82	2	2	8
34	19-Aug	555	448	33	1	33	3	1	3
34	20-Aug	575	181	16	0	16	1	0	0
34	21-Aug								
34	22-Aug								
34	23-Aug								
34	24-Aug								

Statistical Week	Date	Commercial Catch	Inspected	Ages Collected	Sex Collected	Lengths Collected (CAF)	Adipose Clips Observed	CWT Recovered	Spaghetti Tags Recovered
35	25-Aug	426	359	73	1	73	3	1	7
35	26-Aug	209	96	30	0	30	0	0	7
35	27-Aug	129	92	27	1	27	2	1	1
35	28-Aug	222	222	0	0	0	0	0	0
35	29-Aug								
35	30-Aug								
35	31-Aug								
36	1-Sep	752	538	70	7	70	10	7	16
36	2-Sep	560	406	40	0	40	0	0	15
36	3-Sep	499	344	32	7	32	7	7	8
36	4-Sep	582	175	5	5	5	5	5	8
36	5-Sep								
36	6-Sep								
36	7-Sep								
37	8-Sep	632	467	66	6	66	6	6	15
37	9-Sep	573	322	60	9	60	10	9	13
37	10-Sep	407	243	8	3	8	3	3	6
37	11-Sep	395	165	6	1	6	1	1	5
37	12-Sep	197	197	6	1	6	1	1	1
37	13-Sep								
37	14-Sep								
38	15-Sep	391	366	68	8	68	8	8	15
38	16-Sep	307	191	33	3	33	3	3	7
38	17-Sep	375	243	33	8	33	8	8	11
38	18-Sep	373	340	5	5	5	5	5	11
38	19-Sep	107	18	5		5	0	0	0
38	20-Sep								
38	21-Sep								
39	22-Sep	0	0	0	0	0	0	0	0
39	23-Sep	70	70	70	0	70	0	0	1
39	24-Sep	161	161	32	2	32	2	2	6
39	25-Sep	80	79	16	1	16	1	1	0
39	26-Sep	151	151	13	3	13	3	3	4
39	27-Sep								
39	28-Sep								
40	29-Sep	168	168	51	1	51	1	1	4
40	30-Sep	216	216	33	3	33	3	3	3
40	1-Oct	53	53	20	0	20	0	0	0
40	2-Oct	38	38	22	2	22	2	2	0
40	3-Oct	63	63	6	1	6	1	1	0
40	4-Oct								
40	5-Oct								
41	6-Oct	12	11	11	1	11	1	1	1
41	7-Oct	23	23	23	0	23	0	0	1
41	8-Oct	59	59	59	2	59	2	2	1
41	9-Oct	22	22	22	0	22	0	0	1
41	10-Oct	11	0	0	0	0	0	0	0
41	11-Oct	5	0	0	0	0	0	0	0
41	12-Oct								
	Total	**12,145**	**8,857**	**1,697**	**93**	**1,697**	**107**	**93**	**221**

Appendix 4. Expenditures

Taku River Fishery Sampling and Stock Assessment 2019 (NF-2019-I-29)

EXPENDITURES

Labour

DFO Employee Salaries and Benefits

Position		Expenditures (DFO Inkind + PSC)	DFO-Inkind	PSC funding (expenses)		Approved Budget (PSC Funding)	Total PSC Funded Expenditure	Variance
Biologist BI-03	Salary	$ 4,050.00	$ 4,050.00					
	Benefits	$ 1,093.50	$ 1,093.50			$ -		
Biologist BI-02	Salary	$ 6,750.00	$ 6,750.00					
	Benefits	$ 1,822.50	$ 1,822.50			$ -		
Technician	Salary	$ 72,000.00	$ 72,000.00					
	Benefits	$ 19,440.00	$ 19,440.00			$ -		
	Total Expended	**$ 105,156.00**	**$ 105,156.00**	**$ -**		**$ -**	**$ -**	**$ -**

Subcontractors & Consultants

Contract		Contract Amount Expended	Inkind	PSC funding (expenses)		Approved Budget	Total PSC Funded Expenditure	Variance
Air Charter Contracts		$ 28,720.02		$ 28,720.02		29,241		
		$ -						
		$ -						
		$ -						
		$ -						
	Total Expended	**$ 28,720.02**	**$ -**	**$ 28,720.02**		**$ 29,241.00**	**$ 28,720.02**	**$ 520.98**
			$ 105,156.00		**Total**	**$ 29,241.00**	**$ 28,720.02**	**$ 520.98**

Site / Project Costs

Item		Amount Expended	Inkind	PSC funding (expenses)		Approved Budget	Total PSC Funded Expenditure	Variance
Travel		$ 4,013.23		$ 4,013.23		$ 5,164.00		
Small Tools & Equipment		$ 870.77		$ 870.77		$ 1,050.00		
Site Supplies & Materials		$ 5,908.78		$ 5,908.78		$ 6,300.00		
Equipment Rental		$ -						
Work & Safety Gear		$ 652.89		$ 652.89		$ 750.00		
Repairs & Maintenance		$ 2,243.73		$ 2,243.73		$ 3,675.00		
Permits		$ -						
Other costs - Boat fuel, heating fuel, propane		$ 5,905.97		$ 5,905.97		$ 6,945.00		
	Total Expended	**$ 19,595.37**	**$ -**	**$ 19,595.37**		**$ 23,884.00**	**$ 19,595.37**	**$ 4,288.63**
			$ -			**$ 23,884.00**	**$ 19,595.37**	**$ 4,288.63**

Training Costs

Item		Amount Expended	Inkind	PSC funding (expenses)		Approved Budget	Total PSC Funded Expenditure	Variance
Health and Safety Training		$ 1,800.00	$ 1,800.00					
		$ -						
	Total Expended	**$ 1,800.00**	**$ 1,800.00**	**$ -**		**$ -**	**$ -**	**$ -**
			$ 1,800.00			**$ -**	**$ -**	**$ -**

Overhead / Indirect Costs

Item	Amount Expended	Inkind	PSC funding (expenses)	Approved Budget	Total PSC Funded Expenditure	Variance
Office space; including utilities, etc.	$ -					
Insurance	$ -					
Office supplies	$ 523.69		523.69	250		
Telephone & long Distance	$ 324.44		324.44	735		
Photocopies & printing	$ -					
Indirect/overhead costs	$ 486.95		486.95	800		
Administration and financial management	$ -					
(If the PSC contribution to Indirect costs exceeds 20% of the total PSC grant						
submission of back-up documentation justifying the expense is required).						
Total Expended	**$ 1,335.08**	**$ -**	**$ 1,335.08**	**$ 1,785.00**	**$ 1,335.08**	**$ 449.92**
		$ -		**$ 1,785.00**	**$ 1,335.08**	**$ 449.92**

Capital Costs / Assets (Value > $250.00)

Item	Amount Expended		PSC funding (expenses)	Approved Budget	Total PSC Funded Expenditure	Variance
	$ -					
	$ -					
	$ -					
	$ -					
Total Expended	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
		$ -		**$ -**	**$ -**	**$ -**

Financial Report

Categories	DFO InKind		Approved Budget (PSC Grant)	Project Expenditures (PSC$)	Variance
Labour	$ 105,156.00		$ 29,241.00	$ 28,720.02	$ 520.98
Site / Project Costs	$ -		$ 23,884.00	$ 19,595.37	$ 4,288.63
Training	$ 1,800.00		$ -	$ -	$ -
Overhead / Indirect Costs	$ -		$ 1,785.00	$ 1,335.08	$ 449.92
Capital Costs / Assets	$ -		$ -	$ -	$ -
TOTAL			**$ 54,910.00**	**$ 49,650.47**	**$ 5,259.53**

PSC Project Funding Grant Advance Amount Received	**$ (49,419.00)**	(funds rec enter as negative)
PSC Project Funding Grant Amount Remaining to be Paid		(positive refundable to PSC)
Difference Between Grant Amount and Project Expenditures	**$ (231.47)**	

Justification if Variance

Project Manager Name	**Aaron Foos**
Project Manager Signature	Foos, Aaron Digitally signed by Foos, Aaron Date: 2020.03.31 13:38:49 -07'00'
Date	
DFO Responsibility Center Manager Name	**Wiliam Waugh**
DFO Responsibility Center Manager Signature	Waugh, William Digitally signed by Waugh, William Date: 2020.03.31 15:39:11 -07'00'
Date	