

Stikine River Canadian Commercial Fishery Sampling and Stock Assessment 2020

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Executive Summary

The Northern Endowment Fund (NEF) provided Fisheries and Oceans Canada (DFO) with financial support to assist with biological sampling of sockeye (*Oncorhynchus nerka*) and coho (*Oncorhynchus kisutch*) salmon from the Stikine River Canadian commercial and assessment fisheries starting June 23 and ending September 12, 2020. A commercial fisheries closure was in effect from August 4-24 due to mainstem stock sockeye salmon conservation concerns.

In 2020, there were no directed Chinook commercial or assessment fisheries as a result of conservation concerns. All Chinook caught (dead or alive) in the directed sockeye commercial or assessment fisheries were required to be released and commercial fishers were instructed to observe and record the daily number of releases and estimated size (large/ jack) of Chinook, and collect any spaghetti tags observed. A total of 18 spaghetti tags were collected from Chinook salmon bycatch that was live-released in the directed sockeye commercial fishery (749 large Chinook and 695 non large Chinook were released), and 3 tags were collected from Chinook caught and released in the sockeye assessment fishery (67 large chinook and 42 non large chinook were released). As a result of conservation concerns, adipose-clipped Chinook were released and heads (containing a coded wire tag (CWT)) were not retained.

A total of 5,257 sockeye were caught during the directed sockeye commercial fishery (statistical weeks 26 through 32) and 896 sockeye were incidentally caught in the directed coho commercial fishery (statistical weeks 35 through 37). There was no directed sockeye commercial fishery in statistical weeks 33 and 34 (August 4-24) due to mainstem-origin sockeye conservation concerns. A total of 1,563 (25 %) were sampled: 1,184 were sampled for age, sex, length, egg diameter, and otolith marks, and 379 were sampled for sex, length, and egg diameter. Preliminary results suggest the run was 23 % Mainstem fish, 52 % Tahltan enhanced fish, and 25 % Tahltan wild fish, and fish were predominantly age 5.2.

A total of 1,495 sockeye were caught during the sockeye assessment fishery (statistical weeks 26 through 34), and nearly all (99.5 %) were sampled: 1,114 were sampled for age, sex, length, egg diameter, and otolith marks, and 373 were sampled for sex, length, and egg diameter. Based on assessment fishery samples, preliminary analyses suggest that the run was 32 % mainstem fish, 48 % Tahltan enhanced fish and 20 % Tahltan wild fish (Table 7). Scale analyses suggest that fish were mostly 5.2, particularly for Tahltan-origin fish.

A directed coho commercial fishery occurred during statistical weeks 35 through 37 (August 25 to September 13). A total of 500 coho salmon were sampled from the directed coho commercial fisheries harvest of 5,098 fish (9.8 %). An additional 2,290 coho (45 %) were inspected just for adipose clips and a total of 23 heads were collected for CWT analysis. Age analyses are pending.

All information gathered is required for in-season fisheries management and stock assessment as well as postseason analyses, run reconstructions, and forecasting.

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1.0 Introduction

The Stikine River drains a large watershed primarily located in northwestern British Columbia. The river system contains numerous significant tributaries which flow south west ultimately draining to the Pacific Ocean in Southeast Alaska near Wrangell (Figure 1).

Salmon returning to the Stikine River pass through a U.S. offshore troll fishery before entering inside Alaskan waters where they encounter commercial, subsistence and recreational fisheries. After entering the Stikine River salmon are harvested by U.S. subsistence fisheries, and once in Canada, by commercial, First Nation, and recreational fisheries.

The Canadian commercial fishery is located on the lower Stikine River from the Canada/ U.S. border upstream to approximately the Porcupine River confluence, including approximately 10 km up the Iskut River (Figure 1). Sockeye (*Oncorhynchus nerka*) and coho (*Oncorhynchus kisutch*) salmon are targeted. The bilateral 2020 preseason forecast for large Chinook salmon (*Oncorhynchus tshawytscha*) was below the 10 year average and the lower bound of the escapement goal. As a result, Chinook salmon commercial and assessment fisheries were not executed in either Canada or the U.S. Canada required the release of all Chinook bycatch in sockeye commercial and assessment fisheries.

The project requires collaboration with commercial fishers in the lower Stikine River to coordinate reporting of fishery performance data and biological sample collection. These data are required for in-season fishery management and post season stock assessment and forecasting for Stikine River Chinook, sockeye, and coho salmon. Results are reported on an annual basis in various Transboundary Technical Committee reports.

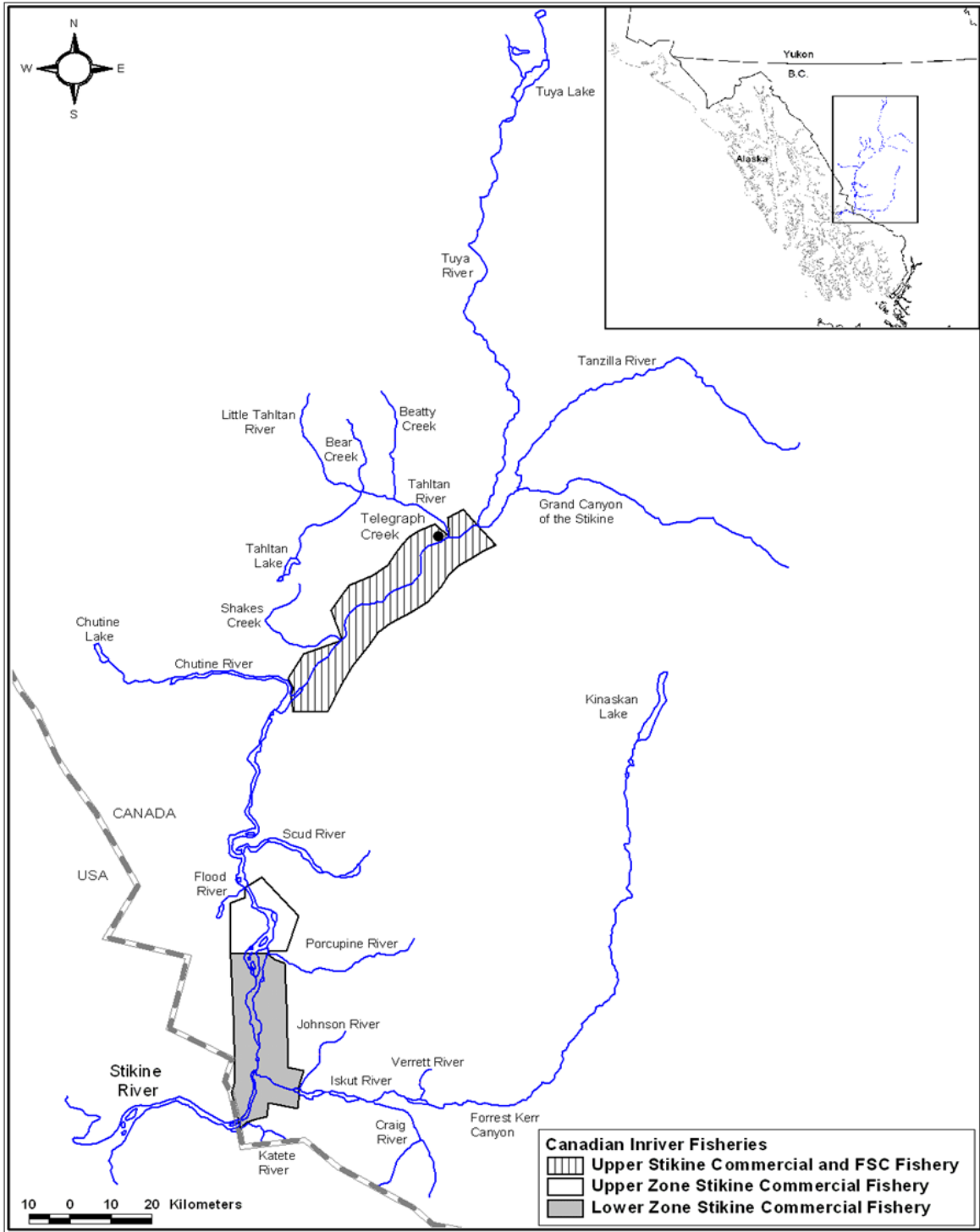


Figure 1. The Stikine River drainage and major tributaries showing Canadian commercial fishing areas.

2.0 Objectives

The purpose of this project was to collect coded-wire tag (CWT), spaghetti tag, otolith, age, sex, length, and egg diameter samples, as applicable, from Chinook, sockeye and coho salmon in the lower Stikine River commercial and assessment fisheries. These data are required for stock assessment and fisheries management programs in Canada and the U.S. Specifically, the objectives of this project were to:

1. Inspect for and recover CWTs from Chinook and coho salmon
2. Inspect for and recover spaghetti tags from Chinook salmon
3. Collect stock identification samples from sockeye salmon which specifically includes: otoliths (wild/ enhanced contribution) and egg diameters (Tahltan Lake or Mainstem origin).
4. Collect age, sex and length samples from sockeye and coho salmon

3.0 Methods

Project operations in the lower Stikine River were based out of a permanent DFO field camp located approximately 1 km upstream from the Canada/U.S. International border (Figure 1). The camp is located approximately 1 km downstream from the Great Glacier Salmon Ltd Landing station and is also in close proximity to the Stikine Salmon Ltd. Landing station. DFO staff posted fishery information (e.g., openings, extensions), and gathered and collated all mandatory fishery reporting data from commercial operations on a daily basis. The information was then reported to the DFO office in Whitehorse, Y.T. to inform in-season management and stock assessment programs. DFO staff also gathered biological data from the commercial harvest from the Great Glacier Salmon Ltd. Landing station on a daily basis.

In past years, otolith samples were opportunistically taken to the ADF&G office in Wrangell, AK and then were sent on to the ADF&G Mark Recovery Lab in Juneau, AK throughout the commercial fishing period. In 2020, however, the ADF&G office in Wrangell, AK closed and otoliths were mailed post-season to the lab in Juneau. The Mark Recovery Lab (mtalab.adfg.alaska.gov) analyzes otolith marks to assess stock composition (wild/enhanced proportions; brood years).

Scale samples were sent to DFO's Sclerochronology Laboratory at the Pacific Biological Station (Nanaimo, B.C.) post season. Ageing results are stored in internal databases and unused scales are archived for future use and for genetic stock identification.

Chinook Salmon

There was no directed Chinook commercial fishery or assessment fishery in 2020 as a result of conservation concerns. All Chinook caught (dead or alive) in the directed sockeye commercial or assessment fisheries were required to be released. Commercial fishers were instructed to observe and record the daily number of releases and estimated size (large/ jack) of Chinook captured. In addition, fishers were required to collect spaghetti tags from Chinook salmon. This information was used in the bilateral chinook mark-recapture program to estimate run size and assist in forecasting. Adipose-clipped Chinook salmon were released in 2020 and not retained for the CWT.

Sockeye Salmon

Fishery Sampling

Sockeye salmon commercial and assessment fishery harvests were sampled for biological data as per weekly targets (Table 1). Biological sampling included length (fork length, mid-eye fork length, and post-orbital hypural length; mm), scale collection (5 down), sex identification, egg diameter measurements, and otolith collection. Egg diameters (10 eggs lined up in a row and measured to the nearest mm) were used in-season for stock identification (Tahltan or Mainstem origin). Scales were used to estimate age, brood year survival, and were later used for genetic stock identification. Otoliths are were for stock identification (wild versus enhanced) and brood year determination post season.

Coho Salmon

Fishery Sampling

Coho salmon commercial fishery harvests were sampled for biological data as per seasonal targets (Table 1). Biological sampling included length (fork length, mid-eye fork length, post-orbital hypural length; mm), scales (5 down), and sex. All fish were checked for adipose clips (indicative of a coded wire tag) (Table 1). If adipose clipped fish were observed, heads were retained and shipped to the DFO office opportunistically. Samples were subsequently transported post season to the contracted DFO lab (J.O. Thomas) in Vancouver, B.C. for CWT extraction. Recovery data will be stored in internal databases until the dataset is verified, after which it will be uploaded into the Regional Mark Processing Centre website database (www.rmpec.org).

Table 1: Lower Stikine sampling directive, 2020.

Sampling Directive - Lower Stikine River - 2020

Sockeye Test Fishery										
	# scales		sample goal	# otolith	# egg dia	scales	length			adipose?
							fork	mid-eye	hypural	
sockeye	5		200/ wk. 200/ wk.	200/wk. none	all females all females	200/ wk. none	x x	x	x	
Chinook	n/a		~ Retention not permitted for 2020 ~							
coho	5		total catch	none	none	total catch	x	x	x	x

Commercial Fishery										
	# scales		random sample goal	# otolith	# egg dia	random scales	length			adipose?
							fork	mid-eye	hypural	
sockeye	5 none	1st 2nd	200/ wk. 200/ wk.	200/wk none	all females all females	200/ wk none	x x	x	x	
Chinook	n/a		~ Retention not permitted for 2020 ~							
coho	5 5		200 in week #1 300 in week #2	none none	none none	required required	x x	x x	x x	x x

- 1) Observe all coho for adipose clips. Keep all heads of adipose clipped fish/ label and put in freezer; take age (scales), sex, length data from CWT coho
- 2) For coho (coho comm & sockeye test): record fork length, mid-eye fork length, and post-orbital hypural length for all fish; ~ measurements to the nearest 5 millimetres (i.e., 555, 560, 565, 570, 575)
- 3) For sockeye (test): fork length, mid-eye fork length, and post-orbital hypural length for all matched samples; only fork length can be recorded for unmatched samples (i.e., 2nd set of 200 samples) ~ measurements to the nearest 5 millimetres (i.e., 555, 560, 565, 570, 575) ~ start a new otolith tray & scale book at the beginning of each statistical week
- 4) For sockeye (commercial): record the fork length, mid-eye fork length, and post orbital hypural length for all fish (200) where matched samples are obtained; only fork length can be recorded for 2nd priority samples (200) ~ measurements to the nearest 5 millimetres (i.e. - 555, 560, 565, 570, 575) ~ start a new otolith tray & scale book at the beginning of each statistical week
- 5) DNA collection is from the scales in 2020; do not collect axillary processes.
- 6) Scale book date is when the book is completed.
- 7) Sample Location for scale books is "Lower Stikine River". No short-hand abbreviations.
- 8) Use pencil when recording information in scale books.

4.0 Results

Chinook Salmon

As a result of conservation concerns, there were no directed Chinook commercial or assessment fisheries conducted on the Lower Stikine River in 2020. Mandatory release of all Chinook caught as bycatch within the directed sockeye commercial and assessment fisheries was also implemented.

Tag Recovery

A total of 749 Large Chinook and 695 non-large Chinook salmon were live-released in the directed sockeye salmon fishery between June 23 and August 3. There were 18 tags collected in the directed sockeye commercial fishery.

A total of 67 large Chinook and 42 non-large Chinook salmon were live-released in the sockeye assessment fishery between June 25 and August 21. There were 3 tags collected from the sockeye assessment fishery.

Sockeye Salmon

Commercial Fishery

Typically, in-season fisheries management of Tahltan Lake origin sockeye persists until statistical weeks 29 and in-season fisheries management for Mainstem origin sockeye occurs in statistical weeks 30 to 34. In 2020, a directed sockeye commercial fishery that targeted the Tahltan Lake stock occurred in statistical weeks 26 to 29 (June 23 to July 14), and a directed sockeye commercial fishery that targeted the Mainstem stock occurred in statistical weeks 30 through 32 for 1 day openings. The commercial fishery did not open in statistical weeks 33 and 34 due to conservation concerns for the mainstem stock, but sockeye salmon were harvested and sampled during the commercial coho salmon fishery.

Samples were obtained from approximately 25 % (n = 1,563) of the commercial harvest (n = 6,153). A full suite of biological samples were obtained from 1,183 fish, and only lengths and egg diameters were obtained from 387 fish. Egg diameters were recorded from 838 fish.

Within each statistical week, the samples collected in-season can be expanded to the total sockeye harvest post-season to provide an estimate of stock composition and age structure of the run within each statistical week and for the run as a whole. In 2020, preliminary results suggest the run was 23 % Mainstem fish, 52 % Tahltan enhanced fish, and 25 % Tahltan wild fish (Table 2), and fish were predominantly age 5.2. For example, Tahltan enhanced fish were predominantly 5.2 (65 %) and 4.2 (34 %) (Table 3), Tahltan wild fish were predominantly 5.2 (65 %), 4.2 (16 %), and 5.3 (14 %) (Table 4), and Mainstem sockeye were predominantly 5.2 (48 %), 4.2 (28 %), and 4.1 (10 %) (Table 5).

Table 2: Summary of weekly sockeye salmon stock proportions and harvest by stock in the Canadian commercial fishery, 2020.

Statistical Week	Week Ending	Weekly Catch		Mainstem	Tuya Enhanced	Tahltan Enhanced	Tahltan Wild	All Tahltan	Total
26-27	4-Jul	668	N Proportion Expanded #	10 0.075 50	0 0.000 0	87 0.649 434	37 0.276 184	124 0.925 618	134 1.000 668
28	11-Jul	1,467	N Proportion Expanded #	7 0.042 62	0 0.000 0	108 0.651 954	51 0.307 451	159 0.958 1,405	166 1.000 1,467
29	18-Jul	2,119	N Proportion Expanded #	20 0.119 252	0 0.000 0	102 0.607 1,287	46 0.274 580	148 0.881 1,867	168 1.000 2,119
30	25-Jul	412	N Proportion Expanded #	12 0.114 47	0 0.000 0	66 0.629 259	27 0.257 106	93 0.886 365	105 1.000 412
31	1-Aug	359	N Proportion Expanded #	43 0.417 150	0 0.000 0	43 0.417 150	17 0.165 59	60 0.583 209	103 1.000 359
32	8-Aug	232	N Proportion Expanded #	26 0.491 114	0 0.000 0	17 0.321 74	10 0.189 44	27 0.509 118	53 1.000 232
33	15-Aug		N Proportion Expanded #						
34	22-Aug		N Proportion Expanded #						
35	29-Aug	128	N Proportion Expanded #	32 0.865 111	0 0.000 0	3 0.081 10	2 0.054 7	5 0.135 17	37 1.000 128
36	5-Sep	605	N Proportion Expanded #	28 0.800 484	0 0.000 0	3 0.086 52	4 0.114 69	7 0.200 121	35 1.000 605
37	12-Sep	163	N Proportion Expanded #	24 0.774 126	0 0.000 0	0 0.000 0	7 0.226 37	7 0.226 37	31 1.000 163
	Total	6,153	Expanded # Proportion	1,396 0.227	0 0.000	3,220 0.523	1,537 0.250	4,757 0.773	6,153

Table 3: Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan enhanced) sampled in the lower Stikine River commercial fishery, 2020.

		31		42		52		53		62		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M
Prop. by age	N	1	0	64	74	164	96	1	2	0	1	245	184
	Proportion	0.002	0.000	0.159	0.184	0.407	0.238	0.002	0.005	0.000	0.002	0.571	0.429
		0.002		0.342		0.645		0.007		0.002			
Fork Length	Count	1		64	74	164	96	1	2		1	245	184
	Average	520		526	529	588	616	520	528	615	572	578	
	Std. Dev.			18.15	34.26	20.32	23.20		17.68		34.34	51.27	
	Maximum	520		580	595	650	680	520	540	615	650	680	
	Minimum	520		470	455	540	545	520	515	615	470	455	
Mid-Eye Fork Length	Count	1		64	74	164	96	1	2		1	245	184
	Average	485		486	484	543	562	485	480	560	528	528	
	Std. Dev.			16.47	31.52	18.74	20.77		21.21		31.34	46.18	
	Maximum	485		530	540	590	620	485	495	560	590	620	
	Minimum	485		440	420	495	495	485	465	560	440	420	
Post-Orbital Hypural Length	Count	1		64	74	164	96	1	2		1	245	184
	Average	420		427	428	478	496	430	428	500	465	466	
	Std. Dev.			17.62	29.42	18.15	19.96		17.68		29.06	41.53	
	Maximum	420		475	480	520	555	430	440	500	520	555	
	Minimum	420		385	355	430	435	430	415	500	385	355	

* : Includes unaged samples.

Table 4: Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan wild) sampled in the lower Stikine River commercial fishery, 2020.

		42		52		53		62		63		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M
Prop. by age	N	31	0	125	0	26	0	1	0	9	0	201	0
	Proportion	0.161	0.000	0.651	0.000	0.135	0.000	0.005	0.000	0.047	0.000	1.000	0.000
		0.161		0.651		0.135		0.005		0.047			
Fork Length	Count	31		125		26		1		9		201	
	Average	525		590		544		610		590		573	
	Std. Dev.	21.60		20.32		26.63				17.68		34.10	
	Maximum	565		640		590		610		630		640	
	Minimum	450		545		475		610		570		450	
Mid-Eye Fork Length	Count	31		125		26		1		9		201	
	Average	486		545		503		565		546		530	
	Std. Dev.	21.12		19.12		23.23				15.90		31.49	
	Maximum	520		595		545		565		580		595	
	Minimum	405		505		445		565		525		405	
Post-Orbital Hypural Length	Count	31		125		26		1		9		201	
	Average	427		481		445		490		480		467	
	Std. Dev.	20.12		19.36		20.22				12.99		28.87	
	Maximum	455		530		475		490		510		530	
	Minimum	345		435		390		490		465		345	

* : Includes unaged samples.

Table 5: Summary of age (GR), sex, and length characteristics of sockeye salmon (mainstem) sampled in the lower Stikine River commercial fishery, 2020.

		31		41		42		51		52		53		62		63		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Prop. by age	N	4	0	16	0	46	0	3	0	79	0	8	0	2	0	6	0	197	0
	Proportion	0.024	0.000	0.098	0.000	0.280	0.000	0.018	0.000	0.482	0.000	0.049	0.000	0.012	0.000	0.037	0.000	1.000	0.000
Fork Length	Count	4		16		46		3		79		8		2		6		197	
	Average	577		579		533		611		593		549		633		591		575	
	Std. Dev.	51.76		24.64		20.55		15.82		24.49		24.27		31.82		13.93		35.89	
	Maximum	635		630		580		625		655		575		655		605		670	
	Minimum	510		525		490		594		535		510		610		575		490	
Mid-Eye Fork Length	Count	4		16		46		3		79		8		2		6		197	
	Average	530		535		491		563		545		510		583		545		529	
	Std. Dev.	46.01		20.62		18.15		14.73		22.80		22.99		31.82		14.95		32.28	
	Maximum	580		575		535		580		600		540		605		560		617	
	Minimum	470		490		455		554		490		475		560		525		455	
Post-Orbital Hypural Length	Count	4		16		46		3		79		8		2		6		197	
	Average	456		465		426		485		475		438		513		477		461	
	Std. Dev.	35.68		19.49		19.84		5.00		24.35		18.11		38.89		16.02		31.01	
	Maximum	500		510		470		490		530		465		540		490		543	
	Minimum	415		430		390		480		410		410		485		455		390	

* : Includes unaged samples.

Assessment Fishery

The assessment fishery operated between statistical weeks 26 and 34. A total of 1,487 sockeye salmon were sampled from the assessment fishery harvest of 1,495. A full suite of biological samples were obtained from 1,114 fish, and only lengths and egg diameters were obtained from 373 fish. Egg diameters for in-season stock identification (Tahltan/Mainstem) were recorded from 780 fish in statistical weeks 27 through 24.

Within each statistical week, the samples collected in-season can be expanded to the total sockeye harvest from the assessment fishery post-season to provide an estimate of stock composition and age structure of the run within each statistical week and for the run as a whole. Based on assessment fishery samples, preliminary analyses suggest that the run was 32 % mainstem fish, 48 % Tahltan enhanced fish and 20 % Tahltan wild fish (Table 7). Scale analyses suggest that fish were mostly 5.2, particularly for Tahltan-origin fish. For example, Tahltan enhanced fish were 5.2 (77%) and 4.2 (23%) (Table 8), and Tahltan wild fish were 5.2 (73%) and 4.2 (13%) (Table 9). Mainstem origin fish were 5.2 (55%), 4.1 (13%), and 4.2 (12%) (Table 10).

Table 6: Summary of weekly sockeye salmon proportions and catch by stock in the lower Stikine River sockeye assessment fishery, 2020.

Statistical Week	Week Ending	Weekly Catch		Mainstem	Tuya Enhanced	Tahltan Enhanced	Tahltan Wild	All Tahltan	Total
26	27-Jun	0	N Proportion Expanded #						
27	4-Jul	91	N Proportion Expanded #	1 0.015 1	0 0.000 0	51 0.750 68	16 0.235 21	67 0.985 90	68 1.000 91
28	11-Jul	308	N Proportion Expanded #	7 0.043 13	0 0.000 0	112 0.683 210	45 0.274 85	157 0.957 295	164 1.000 308
29	18-Jul	86	N Proportion Expanded #	6 0.103 9	0 0.000 0	34 0.586 50	18 0.310 27	52 0.897 77	58 1.000 86
30	25-Jul	247	N Proportion Expanded #	35 0.250 62	0 0.000 0	70 0.500 124	35 0.250 62	105 0.750 185	140 1.000 247
31	1-Aug	348	N Proportion Expanded #	84 0.464 162	0 0.000 0	66 0.365 127	31 0.171 60	97 0.536 186	181 1.000 348
32	8-Aug	272	N Proportion Expanded #	62 0.456 124	0 0.000 0	58 0.426 116	16 0.118 32	74 0.544 148	136 1.000 272
33	15-Aug	101	N Proportion Expanded #	37 0.685 69	0 0.000 0	11 0.204 21	6 0.111 11	17 0.315 32	54 1.000 101
34	22-Aug	42	N Proportion Expanded #	18 0.857 36	0 0.000 0	2 0.095 4	1 0.048 2	3 0.143 6	21 1.000 42
	Total	1,495	Expanded # Proportion	476 0.318	0 0.000	720 0.482	299 0.200	1,019 0.682	1,495

Table 7: Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan enhanced) sampled in the lower Stikine River assessment fishery, 2020.

		42		52		62		Combined *	
		F	M	F	M	F	M	F	M
Prop. by age	N	40	49	192	103	1	0	242	162
	Proportion	0.104	0.127	0.499	0.268	0.003	0.000	0.599	0.401
		0.231		0.766		0.003			
Fork Length	Count	40	49	192	103	1	0	242	162
	Average	539	549	585	604	580		577	587
	Std. Dev.	22.15	28.88	19.80	26.15			26.80	36.80
	Maximum	590	595	640	677	580		640	677
	Minimum	500	462	520	535	580		500	462
Mid-Eye Fork Length	Count	40	49	192	103	1	0	242	162
	Average	497	500	540	549	535		533	534
	Std. Dev.	19.58	25.89	18.98	24.10			24.92	33.38
	Maximum	545	545	590	609	535		590	609
	Minimum	465	430	465	485	535		465	430
Post-Orbital Hypural Length	Count	40	49	192	103	1	0	242	162
	Average	435	439	475	482	465		468	468
	Std. Dev.	19.01	25.18	19.39	24.51			24.44	31.45
	Maximum	480	485	520	540	465		520	540
	Minimum	395	370	415	420	465		395	370

* : Includes unaged samples.

Table 8: Summary of age (GR), sex, and length characteristics in the sockeye salmon (Tahltan wild) sampled in the lower Stikine River assessment fishery, 2020.

		41		42		52		53		63		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M
Prop. by age	N	2	0	21	0	116	0	5	0	14	0	168	0
	Proportion	0.013	0.000	0.133	0.000	0.734	0.000	0.032	0.000	0.089	0.000	1.000	0.000
		0.013		0.133		0.734		0.032		0.089			
Fork Length	Count	2	0	21	0	116	0	5	0	14	0	168	0
	Average	590		543		588		535		598		581	
	Std. Dev.	14.14		27.73		20.82		15.00		20.25		27.62	
	Maximum	600		600		640		560		635		640	
	Minimum	580		505		515		520		560		505	
Mid-Eye Fork Length	Count	2	0	21	0	116	0	5	0	14	0	168	0
	Average	553		502		543		492		551		537	
	Std. Dev.	10.61		24.92		19.53		11.51		17.21		25.36	
	Maximum	560		555		590		510		580		590	
	Minimum	545		465		485		480		520		465	
Post-Orbital Hypural Length	Count	2	0	21	0	116	0	5	0	14	0	168	0
	Average	488		440		476		433		485		471	
	Std. Dev.	10.61		22.39		19.81		10.37		16.69		24.22	
	Maximum	495		490		520		445		510		520	
	Minimum	480		390		415		420		455		390	

* : Includes unaged samples.

Table 9: Summary of age (GR), sex, and length characteristics of sockeye salmon (Mainstem) sampled in the lower Stikine River assessment fishery, 2020.

		31		41		42		51		52		53		62		63		Combined*	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Prop. by age	N	2	0	21	0	18	0	2	0	86	0	13	0	5	0	10	0	250	0
	Proportion	0.013	0.000	0.134	0.000	0.115	0.000	0.013	0.000	0.548	0.000	0.083	0.000	0.032	0.000	0.064	0.000	1.000	0.000
Fork Length	Count	2		21		18		2		86		13		5		10		250	
	Average	570		598		548		612		592		547		616		597		586	
	Std. Dev.	77.78		16.26		25.26		16.26		21.29		30.08		13.87		19.52		29.95	
	Maximum	625		630		600		623		630		595		630		635		645	
	Minimum	515		570		500		600		510		500		595		565		500	
Mid-Eye Fork Length	Count	2		21		18		2		86		13		5		10		250	
	Average	525		550		503		563		544		505		568		550		539	
	Std. Dev.	70.71		15.55		23.44		17.68		20.04		26.46		18.45		17.06		27.54	
	Maximum	575		580		550		575		585		550		585		583		594	
	Minimum	475		520		455		550		465		460		540		522		455	
Post-Orbital Hypural Length	Count	2		21		18		2		86		13		5		10		250	
	Average	463		476		440		488		477		440		501		479		472	
	Std. Dev.	60.10		16.19		22.52		17.68		19.10		22.68		18.51		17.13		25.03	
	Maximum	505		505		490		500		520		480		525		505		525	
	Minimum	420		450		400		475		410		405		480		445		400	

* : Includes unaged samples.

Coho salmon

Commercial Fishery

A directed coho commercial fishery occurred during statistical weeks 35 through 37 (August 25 to September 13). A total of 500 coho salmon (~10 %) were sampled from the directed coho commercial fisheries catch of 5,098 fish (refer to Table 1). An additional 2,290 coho (45 %) were inspected for adipose clips only, and a total of 23 heads were collected for CWT analysis.

The Stikine River coho salmon scale analysis has a low priority at the DFO Sclerochronology lab and results are not expected until late March or early April 2021.

Coho Salmon in the sockeye assessment fishery

Although 111 coho salmon were sampled in the sockeye assessment fishery from statistical weeks 26 to 34, no adipose clips observed. Age results are not yet available from coho salmon sampled during the sockeye assessment fishery.

5.0 Budget Summary

The Northern Endowment Fund awarded \$87,481.00 to DFO for completion of this project. DFO spent \$86,437 of the amount awarded (Appendix 1). If the final report is acceptable to the Pacific Salmon Commission, DFO requests the remaining \$7,704 of the 10% holdback.

6.0 Conclusions

There were no directed Chinook commercial fisheries or assessment fisheries in 2020 due to conservation concerns. With the cooperation of commercial fishers, 18 spaghetti tags were collected and assisted in generating a mark-recapture estimate for the 2020 run and development of 2021 chinook salmon forecasts.

Weekly sample goals for the sockeye commercial fishery were generally met during the Tahltan management period. Weekly sample goals for the sockeye in the commercial fishery were not met for the

Mainstem origin stock as a result of reduced effort and harvest (there was no commercial fishery in statistical weeks 33 and 34). Samples were obtained for approximately 25 % of the commercial harvest. Assuming samples were representative of the run, preliminary results suggest the run was 23 % Mainstem fish, 52 % Tahltan enhanced fish, and 25 % Tahltan wild fish, and fish were predominantly age 5.2.

Nearly 100% of the harvest in the assessment fishery was sampled. Preliminary analyses suggest that, based on assessment fishery samples, the run was 32 % mainstem fish, 48 % Tahltan enhanced fish and 20 % Tahltan wild fish. Scale analyses suggest that fish were mostly 5.2, particularly for Tahltan-origin fish.

Although weekly samples goals were met for coho salmon, ageing analyses are pending. Analyses of the 23 coho heads collected for CWTs are now complete and results are posted in the online database (www.rmhc.org).

Although commercial fisheries were generally regarded as below average in 2021, the objectives of the project were met and data collected assisted in in-season fisheries management actions and post season stock assessment.

7.0 Acknowledgments

Mathieu Ducharme, Philippe Beaulieu, Brian Hyde, Kelsey Winters, and Johnny Sembsmoen completed field operations for DFO. Mark McFarland provided expediting support for DFO. Jody Mackenzie-Grieve and Johnny Sembsmoen provided DFO project oversight, coordination, and support. Colleen Claggett and Conie Rogan provided DFO administration support.

Air support was provided by Discovery Helicopters LTD and Alpine Aviation Yukon LTD.

The project would not have been successful without the participation of Stikine River commercial fishers including Great Glacier Salmon Ltd. and Stikine Salmon Ltd.

Appendix 1 - Budget Summary

Name of Project and PSC#:									
Stikine River Canadian Fishery Sampling & Stock Assessment (NF 2020-I-15)									
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		
Manager	Salary	\$ 1,500.00	\$ 1,500.00						
	Benefits	\$ 405.00	\$ 405.00		\$ -				
Biologist	Salary	\$ 7,395.00	\$ 7,395.00						
(EG 5 & EG-4)	Benefits	\$ 1,996.65	\$ 1,996.65		\$ -				
Technician	Salary	\$ 22,275.00	\$ 22,275.00						
	Benefits	\$ 6,014.25	\$ 6,014.25		\$ -				
	Total Expended	\$ 39,585.90	\$ 39,585.90	\$ -	\$ -	\$ -	\$ -		
Subcontractors & Consultants									
Contract		Contract Amount Expended	Inkind	PSC funding (expenses)	Approved Budget	Total PSC Funded Expenditure	Variance		
Air Charters		\$ 27,741.92		\$ 27,741.92	21,000				
Boat Charters		\$ 8,040.00		\$ 8,040.00	10,500				
TFN Technician		\$ 25,523.59		\$ 25,523.59	27,621				
Otolith delivery		\$ 354.47		\$ 354.47	1,500				
		\$ -							
	Total Expended	\$ 61,659.98	\$ -	\$ 61,659.98	\$ 60,621.00	\$ 61,659.98	\$ (1,038.98)		
			\$ 39,585.90		Total \$ 60,621.00	\$ 61,659.98	\$ (1,038.98)		
Site / Project Costs									
Item		Amount Expended	Inkind	PSC funding (expenses)	Approved Budget	Total PSC Funded Expenditure	Variance		
Travel		\$ 4,012.64		\$ 4,012.64	\$ 4,800.00				
Small Tools & Equipment		\$ 1,600.02		\$ 1,600.02	\$ 1,500.00				
Site Supplies & Materials		\$ 3,888.17		\$ 3,888.17	\$ 4,400.00				
Equipment Rental		\$ -							
Work & Safety Gear		\$ 448.41		\$ 448.41	\$ 800.00				
Repairs & Maintenance		\$ 4,316.20		\$ 4,316.20	\$ 4,000.00				
Permits		\$ 6,992.45		\$ 6,992.45	\$ 7,000.00				
Other costs		\$ 2,967.61		\$ 2,967.61	\$ 3,000.00				
	Total Expended	\$ 24,225.50	\$ -	\$ 24,225.50	\$ 25,500.00			\$ 24,225.50	\$ 1,274.50
			\$ -		\$ 25,500.00			\$ 24,225.50	\$ 1,274.50
Training Costs									
Item		Amount Expended	Inkind	PSC funding (expenses)	Approved Budget	Total PSC Funded Expenditure	Variance		
Health & Safety training		\$ 1,200.00	\$ 1,200.00						
		\$ -							
	Total Expended	\$ 1,200.00	\$ 1,200.00	\$ -	\$ -	\$ -	\$ -		
			\$ 1,200.00		\$ -	\$ -	\$ -		

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	\$ 300.00	300					
Telephone & long Distance	\$ 551.52		551.52	1,360			
Photocopies & printing	\$ -						
Indirect/overhead costs	\$ 800.00	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	\$ 1,651.52	\$ 1,100.00	\$ 551.52	\$ 1,360.00	\$ 551.52	\$ 808.48	
		\$ 1,100.00		\$ 1,360.00	\$ 551.52	\$ 808.48	

Capital Costs / Assets (Value > \$250.00)							
Item	Amount Expended	Inkind	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	\$ 39,585.90	\$ 60,621.00	\$ 61,659.98	\$ (1,038.98)
Site / Project Costs	\$ -	\$ 25,500.00	\$ 24,225.50	\$ 1,274.50
Training	\$ 1,200.00	\$ -	\$ -	\$ -
Overhead / Indirect Costs	\$ 1,100.00	\$ 1,360.00	\$ 551.52	\$ 808.48
Capital Costs / Assets	\$ -	\$ -	\$ -	\$ -
TOTAL		\$ 87,481.00	\$ 86,437.00	\$ 1,044.00

PSC Project Funding Grant Advance Amount Received	\$ (78,733.00)	(funds rec enter as negative)
PSC Project Funding Grant Amount Remaining to be Paid	\$ (7,704.00)	(positive refundable to PSC)
Difference Between Grant Amount and Project Expenditures	\$ -	7,704

Fisheries and Oceans Canada - PSC Project Budget Financial Report

Name of Project and PSC#:

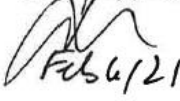
Stikine River Canadian Fishery Sampling & Stock Assessment (NF 2020-I-15)

Justification if Variance

Project Manager Name

Jody M. Munn

Project Manager Signature



Date

Feb 6/21

DFO Responsibility Center Manager Name

Bill Doughty

DFO Responsibility Center Manager Signature



Date

Feb 5/21