Stikine River Fishery Sampling and Stock Assessment 2017

Final Report
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Executive Summary

The Northern Endowment Fund (NEF) awarded Fisheries and Oceans Canada (DFO) with funding to assist with biological sampling of Chinook (*Oncorhynchus tshawytscha*), sockeye (*Oncorhynchus nerka*) and coho (*Oncorhynchus kisutch*) salmon from the Stikine River Canadian commercial and assessment fisheries between mid-June and mid-September 2017.

A total of 922 Chinook (312 – large, 610 – jack) were captured incidentally in the directed commercial sockeye fishery of which 594 were sampled for age, sex and length. In addition , 24 Chinook salmon that were caught and released live were inspected for marks; eight heads collected for coded wire tag (CWT) analysis, and 7 spaghetti tags were recovered to inform a concurrent mark-recapture run size estimation project. A total of 32,849 sockeye were caught during the directed sockeye commercial fishery; 2,488 (8%) were sampled for age, sex, and length, with 1,597 otolith samples collected for stock composition analysis.

A total of 4,983 coho were caught in the directed commercial fishery; 477 (10%) were sampled for age, sex, length and adipose clips. An additional 2,611 coho were inspected for adipose clips. Twelve heads were collected for CWT analysis.

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

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1.0 Introduction

The commercial and assessment fisheries on the Canadian portion of the Stikine River occur from approximately the Porcupine River confluence downstream to the Canada/ US border, including approximately 10 km up the Iskut River (Figure 1). Chinook (*Oncorhynchus tshawytscha*), sockeye (*Oncorhynchus nerka*) and coho (*Oncorhynchus kisutch*) salmon are targeted.

For this project, Fisheries and Oceans Canada (DFO) aquatic science technicians and Tahltan First Nation (TFN) fisheries technicians are based from a permanent DFO camp on the north side of the Stikine River just below the Iskut River confluence. The main duties of the technicians are daily collection of samples, recording of individual fish sample data, relaying of commercial catch information to fisheries managers, public posting of fisheries notices for commercial fishery openings, weekly coordination of shipping otolith samples to Wrangell, Alaska, and camp upkeep/ maintenance.

Chinook Fishery Sampling

The Chinook commercial fishery is typically prosecuted in statistical weeks 19-25, although the very weak run in 2017 precluded a directed Chinook fishery from occurring. During directed fisheries for other salmon species (sockeye and coho), fishers were encouraged to release all large Chinook caught incidentally that were likely to survive. Cooperation with this Chinook conservation measure was high. The only Chinook sampled were those that were captured incidentally in the directed commercial sockeye openings and the sockeye test fishery.

The 2018 joint Canada/U.S. Chinook mark/ recapture project occurred near Kakwan Point downriver off the Canadian fishery and below the Canada/ US border from early May to early July. This project had a target goal of applying 445 spaghetti tags (marks) to large Chinook salmon by drift net for the purpose of estimating the inriver run size. The sampling and observation of Chinook salmon marked with spaghetti tags from the test and commercial fisheries assisted in determining drainage wide estimate of Stikine River large Chinook salmon.

Sockeye Fishery Sampling

A sockeye salmon test fishery has been conducted annually on the Stikine River since 1986 and typically occurs between statistical weeks 25 and 35. The sockeye catch target for this fishery is 1,800 fish. The sockeye test fishery provides in-season information to fishery managers regarding sockeye abundance and stock composition at times when the commercial fishery is not open.

The sockeye commercial fishery typically occurs between statistical weeks 25 and 34, although in 2017 the opening was delayed into statistical week 26 due to concerns over low Chinook salmon abundance and associated incidental interception.

All sockeye salmon captured in the test fishery and a subset of the commercial sockeye fishery catch of Chinook, sockeye, and coho salmon are sampled. Chinook are sampled for age, length, sex, observed for spaghetti tag presence/ absence, observation for adipose clip presence/ absence (CWT), and GSI. Sockeye are sampled for age, length, sex, egg diameter,

otoliths, and GSI. Coho are sampled for age, length, sex, and observation for adipose clip presence / absence (CWT).

Coho Fishery Sampling

The coho commercial fishery has been conducted annually since 1979, and has generally occurs in statistical weeks 35-37. The Stikine River does not have a robust escapement assessment program in place, so CWT recoveries in the fisheries provide a coarse escapement estimate.

A subset of Chinook and sockeye, and coho salmon caught in the coho commercial fishery are sampled. The Chinook are sampled for age, length, sex, observed for spaghetti tag presence/ absence, observed for adipose clip presence/ absence (CWT), and GSI. The sockeye are sample for otoliths, age, length, sex, egg diameter, and GSI. The coho catch are sampled for age, length, sex, and observation for adipose clip presence / absence (CWT).

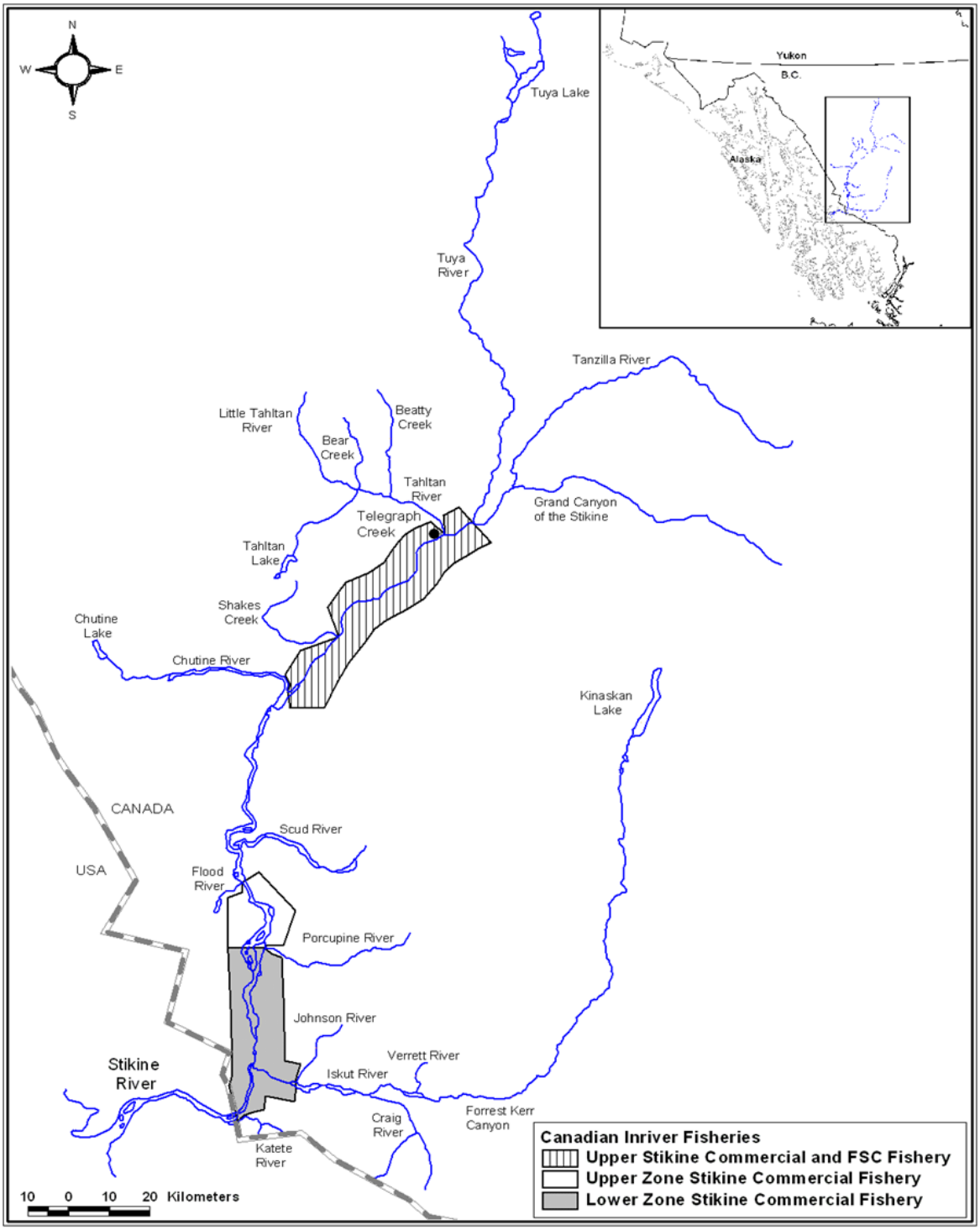

Figure 1 – The Stikine River drainage and major tributaries showing Canadian fishing areas.

2.0 Methods

Two Fisheries Technicians; one from TFN fisheries and one from DFO performed Stikine River fishery sampling duties from approximately mid-June to mid-September 2017.

The sockeye test fishery project in 2017 was awarded to Myles Sampson and carried out by Russell Sampson. All catches from the test fishery were taken to a landing station located just downriver from the DFO field camp. All test fishery sampling occurred at this landing station.

All salmon captured in the sockeye test fishery are subjected to full biological sampling. Chinook salmon are sampled for age (5 scales), length (to the nearest mm; determine large or jack), sex (observation of sexual dimorphic traits), observed for spaghetti tag presence/ absence, observed for adipose clip presence/ absence ((CWT); collect head), and GSI tissue collected (axillary appendage – up to 200 per week). The target sample size of sockeye salmon was 400 per week (200 otolith samples and 200 no otolith samples) while each fish was sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual organs), egg diameter (to the nearest mm of 10 individual eggs lined up in a row – determination of Tahltan/ Tuya or mainstem origin), otoliths (200 per week; determination of Tahltan/ Tuya - enhanced/ wild ratio), and GSI tissue collected (axillary appendage – up to 200 per week). Coho were sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual dimorphic traits), and observed for adipose clip presence / absence ((CWT); collect head).

The Chinook, sockeye, and coho commercial catch samples were collected from Great Glacier Salmon Ltd. commercial fishers catch a the Great Glacier Salmon landing station (located upriver from the DFO field camp).

A subset of Chinook, sockeye, and coho salmon caught in the sockeye commercial fishery were subject to biological sampling. The target sample size of Chinook salmon was 200 per week with each fish sampled for age (5 scales), length (to the nearest mm; determine large or jack), sex (observation of sexual dimorphic traits), observed for spaghetti tag presence/ absence, observed (a minimum of 50% of catch) for adipose clip presence/ absence ((CWT); collect head), and GSI tissue collected (axillary appendage – up to 200 per week). The sockeye sample goal was 400 per week (200 otolith samples and 200 no otolith samples) and were sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual organs), egg diameter (up to 150 samples per week; to the nearest mm of 10 individual eggs lined up in a row – to determine Tahltan/ Tuya or mainstem stock), otoliths (200 per week; to determine Tahltan/ Tuya - enhanced/ wild ratio), and GSI tissues samples collected (axillary appendage – up to 200 per week). All coho salmon captured were sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual dimorphic traits), and observed for adipose clip presence / absence ((CWT); collect head).

The coho commercial fishery catch is sampled for Chinook, sockeye, and coho salmon. Chinook were sampled for age (5 scales), length (to the nearest mm; determine large or jack), sex (observation of sexual dimorphic traits), observed for spaghetti tag presence/ absence, observed for adipose clip presence/ absence ((CWT); collect head), and GSI tissue samples

collected. The sockeye are sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual organs), egg diameter (to the nearest mm of 10 individual eggs lined up in a row – determination of Tahltan/ Tuya or mainstem origin), otoliths (determination of Tahltan/ Tuya - enhanced/ wild ratio), and genetic stock information (GSI) (axillary appendage). Coho are sampled for age (2 scales), length (to the nearest mm), sex (observation of sexual dimorphic traits), and observation for adipose clip presence / absence ((CWT); collect head).

Scale samples were sent to DFO's Sclerochronology Laboratory at the Pacific Biological Station in Nanaimo, B.C. for analysis. Results are stored within the DFO age database.

Otolith samples were delivered to ADF&G weekly in-season 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 the ADF&G lab in Juneau, Alaska for CWT extraction. CWT recovery data will be stored in the ADF&G coded wire tag website (mtalab.adfg.alaska.gov). Once this data set is verified, it will be forwarded to and inputted into the Regional Mark Processing Centre website (www.rmpc.org) and shared with Canada.

3.0 Results

Sockeye Test Fishery – Chinook salmon

A total of 31 Chinook salmon were sampled in the sockeye test fishery from 21 June to 22 July. No spaghetti tags were observed. One head was collected for CWT analysis which showed that the sample was a Chickamin River origin Chinook salmon. A total of 31 Chinook salmon GSI samples were collected from statistical weeks 25-29; analysis pending funding. Figures 2 and 3 below show the results for Chinook salmon jacks and large fish that were sampled in the sockeye test fishery for age, sex, and length characteristics.

Figure 2 – Summary of age (GR), sex, and length characteristics for Chinook salmon (jack) sampled in the lower Stikine River sockeye test fishery, 2017.

		32		42		52		Combined *	
		F	M	F	M	F	M	F	M
	N	0	5	0	10	0	3	1	23
	Proportion	0.000	0.278	0.000	0.556	0.000	0.167	0.042	0.958
Proportion by age		**0.278**		**0.556**		**0.167**			
Fork	Count		5		10		3	1	23
Length	Average		466		621		655	683	578
	Std. Dev.		33.43		62.11		68.74		89.24
	Maximum		510		718		715	683	718
	Minimum		430		515		580	683	430
Mid-eye	Count		5		10		3	1	23
Fork	Average		424		561		597	623	524
Length	Std. Dev.		28.96		53.82		64.11		80.10
	Maximum		460		648		650	623	650
	Minimum		393		475		526	623	393
Hypural	Count		5		10		3	1	23
Length	Average		374		497		523	551	462
	Std. Dev.		26.70		47.19		49.45		70.14
	Maximum		409		569		568	551	569
	Minimum		345		413		470	551	344

* includes unaged specimens

Figure 3 – Summary of age (GR), sex, and length characteristics for Chinook salmon (large) sampled in the lower Stikine River sockeye test fishery, 2017.

		52		Combined *	
		F	M	F	M
	N	4	1	5	2
	Proportion	0.800	0.200	0.714	0.286
Proportion by age		**1.000**			
Fork	Count	4	1	5	2
Length	Average	829	730	820	754
	Std. Dev.	71.31		65.06	33.94
	Maximum	917	730	917	778
	Minimum	743	730	743	730
Mid-eye	Count	4	1	5	2
Fork	Average	758	666	749	684
Length	Std. Dev.	64.89		59.48	24.77
	Maximum	836	666	836	701
	Minimum	678	666	678	666
Hypural	Count	4	1	5	2
Length	Average	665	579	657	602
	Std. Dev.	53.28		49.17	31.69
	Maximum	730	579	730	624
	Minimum	600	579	600	579

* includes unaged specimens

Sockeye Test Fishery – sockeye salmon

A total of 1,809 sockeye salmon were sampled in the sockeye test fishery from 21 June to 22 July. A total of 1,266 sockeye salmon GSI samples were collected from statistical weeks 25-32;

analysis pending funding. Figures 4, 5, 6 and 7 below provide the results for mainstem, Tahltan enhanced, Tahltan wild, and Tuya enhanced sockeye salmon that were sampled in the sockeye test fishery for age, sex, and length characteristics. A total of 831 egg diameters were recorded from statistical weeks 25-32. Table 1 summarizes egg diameter results.

Figure 4 – Summary of age (GR), sex, and length characteristics of sockeye salmon (mainstem) sampled in the lower Stikine River sockeye salmon test fishery, 2017.

		41		42		51		52		53		62		63		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	6	0	5	0	4	0	101	0	3	0	1	0	13	0	167	0
	Proportion	0.045	0.000	0.038	0.000	0.030	0.000	0.759	0.000	0.023	0.000	0.008	0.000	0.098	0.000	1.000	0.000
Proportion by age		0.045		0.038		0.030		0.759		0.023		0.008		0.098			
Fork	Count	6		5		4		101		3		1		13		167	
Length	Average	598		571		640		616		587		653		608		613	
	Std. Dev.	24.44		32.20		14.55		18.33		8.74				18.89		21.73	
	Maximum	636		618		655		666		597		653		638		666	
	Minimum	565		530		620		575		580		653		576		530	
Mid-Eye	Count	6		5		4		101		3		1		13		167	
Fork Length	Average	553		529		591		568		543		603		562		566	
	Std. Dev.	21.72		29.10		13.08		16.34		7.90				18.28		19.69	
	Maximum	585		571		604		603		552		603		589		604	
	Minimum	523		492		573		525		537		603		528		492	
Post-Orbital	Count	6		5		4		101		3		1		13		167	
Hypural Length	Average	486		462		516		499		474		515		493		496	
	Std. Dev.	19.61		26.83		10.69		15.69		10.18				14.28		18.09	
	Maximum	517		500		525		541		485		515		512		541	
	Minimum	460		425		504		465		465		515		468		425	

* : Includes unaged samples.

Figure 5 – Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan enhanced) sampled in the lower Stikine River sockeye salmon test fishery, 2017.

		42		52		53		62		63		64		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	11	10	149	163	1	2	1	6	2	1	0	1	183	202
	Proportion	0.032	0.029	0.429	0.470	0.003	0.006	0.003	0.017	0.006	0.003	0.000	0.003	0.475	0.525
Proportion by age		0.061		0.899		0.009		0.020		0.009		0.003			
Fork	Count	11	10	149	163	1	2	1	6	2	1		1	183	202
Length	Average	558	585	611	630	600	596	586	640	630	610		622	608	627
	Std. Dev.	27.92	25.52	21.80	22.90		0.71		11.39	14.14				25.12	24.65
	Maximum	590	612	689	680	600	596	586	650	640	610		622	689	680
	Minimum	482	530	555	559	600	595	586	620	620	610		622	482	530
Mid-Eye	Count	11	10	149	163	1	2	1	6	2	1		1	183	202
Fork Length	Average	518	533	565	574	555	543	538	582	582	556		568	562	571
	Std. Dev.	26.18	22.75	19.88	20.82		0.61		9.65	12.78				22.72	22.19
	Maximum	546	557	635	625	555	543	538	590	591	556		568	635	625
	Minimum	445	486	514	511	555	543	538	565	573	556		568	445	486
Post-Orbital	Count	11	10	149	163	1	2	1	6	2	1		1	183	202
Hypural Length	Average	455	470	497	507	488	477	477	514	520	485		500	494	504
	Std. Dev.	23.22	21.04	18.24	19.12		3.03		8.91	7.07				20.76	20.46
	Maximum	480	488	560	550	488	479	477	522	525	485		500	560	550
	Minimum	393	425	455	450	488	475	477	498	515	485		500	393	425

* : Includes unaged samples.

Figure 6 – Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan wild) sampled in the lower Stikine River sockeye salmon test fishery, 2017.

		42		52		53		62		63		64		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	3	0	183	0	5	0	6	0	35	0	2	0	261	0
	Proportion	0.013	0.000	0.782	0.000	0.021	0.000	0.026	0.000	0.150	0.000	0.009	0.000	1.000	0.000
Proportion by age		0.013		0.782		0.021		0.026		0.150		0.009			
Fork	Count	3		183		5		6		35		2		261	
Length	Average	551		609		576		623		611		576		608	
	Std. Dev.	26.89		20.23		35.66		16.18		22.53		12.73		22.42	
	Maximum	568		670		609		647		650		585		670	
	Minimum	520		520		534		600		567		567		520	
Mid-Eye	Count	3		183		5		6		35		2		261	
Fork Length	Average	510		563		534		575		566		533		562	
	Std. Dev.	24.30		18.71		33.00		15.01		21.28		12.17		20.68	
	Maximum	526		620		562		600		600		541		620	
	Minimum	482		477		495		555		525		524		477	
Post-Orbital	Count	3		183		5		6		35		2		261	
Hypural Length	Average	449		496		471		507		498		471		496	
	Std. Dev.	22.38		17.92		30.74		11.10		18.43		13.33		19.29	
	Maximum	464		545		496		526		530		480		545	
	Minimum	423		423		435		495		460		461		423	

* : Includes unaged samples.

Figure 7 – Summary of age (GR), sex, and length characteristics of sockeye salmon (Tuya enhanced) sampled in the lower Stikine River sockeye salmon test fishery, 2017.

		42		52		53		62		63		64		74		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	6	2	15	19	7	3	0	1	8	12	6	2	1	0	49	44
	Proportion	0.073	0.024	0.183	0.232	0.085	0.037	0.000	0.012	0.098	0.146	0.073	0.024	0.012	0.000	0.527	0.473
Proportion by age		0.098		0.415		0.122		0.012		0.244		0.098		0.012			
Fork	Count	6	2	15	19	7	3		1	8	12	6	2	1		49	44
Length	Average	569	523	615	628	604	559		643	617	637	588	618	610		600	619
	Std. Dev.	13.31	81.32	15.57	21.50	44.59	71.28			16.45	25.93	22.06	24.75			27.90	40.97
	Maximum	585	580	642	659	682	615		643	640	675	611	635	610		682	675
	Minimum	550	465	585	588	553	479		643	585	609	560	600	610		550	465
Mid-Eye	Count	6	2	15	19	7	3		1	8	12	6	2	1		49	44
Fork Length	Average	526	477	568	572	558	513		584	570	580	543	562	560		554	565
	Std. Dev.	11.88	73.97	16.28	19.54	40.69	63.68			14.17	24.34	22.41	21.47			25.86	36.83
	Maximum	545	530	600	603	629	565		584	595	620	570	577	560		629	620
	Minimum	510	425	541	537	512	442		584	554	555	515	547	560		510	425
Post-Orbital	Count	6	2	15	19	7	3		1	8	12	6	2	1		49	44
Hypural Length	Average	462	423	499	505	494	450		500	502	510	479	496	496		489	498
	Std. Dev.	12.30	66.46	11.90	16.32	39.88	56.19			13.73	21.84	17.28	19.51			23.08	31.88
	Maximum	476	470	520	528	554	494		500	520	542	497	510	496		554	542
	Minimum	442	376	475	475	445	387		500	476	483	456	482	496		442	376

* : Includes unaged samples.

Table 1 – Summary of egg diameter sample results by statistical week for the Stikine River sockeye test fishery, 2017.

Test Fishery - Egg diameter stock identification			
Stat. Wk.	**Mainstem**	**Tahltan/ Tuya**	**Total**
25	4	152	156
26	4	63	67
27	12	172	184
28	27	143	170
29	56	72	128
30	17	26	43
31	30	27	57
32	17	9	26
	167	664	831

Table 2 – Preliminary summary of weekly sockeye salmon stock proportions and harvest by stock in the Canadian test fishery, 2017.

Statistical Week	Week Ending	Weekly Catch		Mainstem	Tuya Enhanced	Tahltan Enhanced	Tahltan Wild	All Tahltan	Total
25	1-Jul	293	N	4	20	102	85	187	211
			Proportion	0.019	0.095	0.483	0.403	0.886	1.000
			Expanded #	**6**	**28**	**142**	**118**	**260**	**293**
269	8-Jul	134	N	4	9	54	27	81	94
			Proportion	0.043	0.096	0.574	0.287	0.862	1.000
			Expanded #	**6**	**13**	**77**	**38**	**115**	**134**
27	15-Jul	500	N	12	17	66	47	113	142
			Proportion	0.085	0.120	0.465	0.331	0.796	1.000
			Expanded #	**42**	**60**	**232**	**165**	**398**	**500**
28	22-Jul	359	N	27	20	58	42	100	147
			Proportion	0.184	0.136	0.395	0.286	0.680	1.000
			Expanded #	**66**	**49**	**142**	**103**	**244**	**359**
29	29-Jul	281	N	56	9	39	33	72	137
			Proportion	0.409	0.066	0.285	0.241	0.526	1.000
			Expanded #	**115**	**18**	**80**	**68**	**148**	**281**
30	5-Aug	121	N	17	7	29	15	44	68
			Proportion	0.250	0.103	0.426	0.221	0.647	1.000
			Expanded #	**30**	**12**	**52**	**27**	**78**	**121**
31	12-Aug	142	N	30	7	30	12	42	79
			Proportion	0.380	0.089	0.380	0.152	0.532	1.000
			Expanded #	**54**	**13**	**54**	**22**	**75**	**142**
32	19-Aug	78	N	17	4	7	0	7	28
			Proportion	0.607	0.143	0.250	0.000	0.250	1.000
			Expanded #	**47**	**11**	**20**	**0**	**20**	**78**
		1,908 Total	**Expanded #**	**366**	**204**	**798**	**541**	**1,338**	**1,908**
			Proportion	0.192	0.107	0.418	0.283	0.701	

Sockeye Test Fishery – coho salmon

A total of 9 coho salmon were sampled in the sockeye test fishery from 21 June to 22 July. Coho scale analysis has a low priority at the scale lab and results are not expected until late March – early April 2018; thus a summary figure for age, sex, and length characteristics cannot be generated for this report.

Commercial Fishery – Chinook salmon

A total of 594 Chinook salmon captured incidentally were sampled in the commercial fisheries from 27 June to 21 August. Seven spaghetti tags were observed. Eight heads were collected for CWT analysis which showed that 4 were of Stikine River origin, 1 was of Unuk River origin, 1 was of Keta River origin, 1 was of Chickamin River origin, and 1 had no release information available. A total of 587 Chinook salmon GSI samples were collected from statistical weeks 26-34; analysis pending funding. Figures 8 and 9 below show the results for Chinook salmon jack and large that was sampled in the commercial fishery for age, sex, and length characteristics.

Figure 8 – Summary of age (GR), sex, and length characteristics of Chinook salmon (jack) sampled in the lower Stikine River commercial fishery, 2017.

		32		41		42		43		52		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M
	N	0	139	1	0	21	131	0	2	15	15	50	353
	Proportion	0.000	0.429	0.003	0.000	0.065	0.404	0.000	0.006	0.046	0.046	0.124	0.876
Proportion by age		**0.429**		**0.003**		**0.469**		**0.006**		**0.093**			
Fork	Count		139	1		21	131		2	15	15	50	353
Length	Average		436	715		621	568		492	668	648	640	510
	Std. Dev.		35.53			45.55	60.85		51.62	50.58	79.40	52.63	89.43
	Maximum		565	715		722	700		528	722	710	722	710
	Minimum		355	715		550	420		455	562	435	525	315
Mid-eye	Count		139	1		21	131		2	15	15	50	353
Fork	Average		398	648		565	515		451	609	585	583	464
Length	Std. Dev.		31.51			41.47	54.28		43.84	46.94	69.99	48.53	79.37
	Maximum		512	648		658	632		482	658	641	658	641
	Minimum		320	648		501	384		420	512	397	479	291
Hypural	Count		139	1		21	131		2	15	15	50	353
Length	Average		351	579		505	455		395	541	515	520	409
	Std. Dev.		28.22			35.35	47.65		39.94	40.21	61.50	41.13	70.14
	Maximum		460	579		580	556		423	590	564	590	564
	Minimum		289	579		445	343		366	460	351	433	250

* includes unaged specimens

Figure 9 – Summary of age (GR), sex, and length characteristics of Chinook salmon (large) sampled in the lower Stikine River commercial fishery, 2017.

		41		42		52		62		Combined *	
		F	M	F	M	F	M	F	M	F	M
	N	3	0	2	0	62	29	44	9	146	45
	Proportion	0.020	0.000	0.013	0.000	0.416	0.195	0.295	0.060	0.764	0.236
Proportion by age		**0.020**		**0.013**		**0.611**		**0.356**			
Fork	Count	3		2		62	29	44	9	146	45
Length	Average	797		801		789	807	840	937	810	850
	Std. Dev.	60.32		50.91		47.59	59.44	49.66	53.36	52.41	87.04
	Maximum	864		837		920	958	983	1020	983	1084
	Minimum	747		765		715	727	732	840	715	727
Mid-eye	Count	3		2		62	29	44	9	146	45
Fork	Average	727		729		720	728	766	841	738	765
Length	Std. Dev.	55.06		44.14		43.31	52.83	44.38	46.96	47.29	76.20
	Maximum	788		760		839	860	880	915	880	972
	Minimum	681		698		659	666	667	756	659	666
Hypural	Count	3		2		62	29	44	9	146	45
Length	Average	643		639		635	638	675	739	651	671
	Std. Dev.	50.08		47.55		36.09	45.07	38.45	42.35	40.64	67.22
	Maximum	700		672		725	740	784	804	784	853
	Minimum	605		605		579	577	592	664	579	577

* includes unaged specimens

Commercial Fishery – sockeye salmon

A total of 2,488 sockeye salmon were sampled in the commercial fisheries from 27 June to 6 September of which 1,597 were from the otolith sample group and 891 were from the no-otolith sample group. A total of 1,586 sockeye salmon GSI samples were collected from statistical weeks 26-35; analysis pending funding. Figures 10, 11, 12 and 13 below show the results for mainstem, Tahltan enhanced, Tahltan wild, and Tuya enhanced sockeye salmon that were sampled in the commercial fishery for age, sex, and length characteristics. A total of 1,263 egg diameters were recorded from statistical weeks 26-36. Table 2 summarizes egg diameter results.

Figure 10 – Summary of age (GR), sex, and length characteristics of sockeye salmon (mainstem) sampled in the lower Stikine River commercial fishery, 2017.

		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
	N	1	0	42	0	15	0	3	0	283	0	4	0	8	0	8	0	428	0
	Proportion	0.003	0.000	0.115	0.000	0.041	0.000	0.008	0.000	0.777	0.000	0.011	0.000	0.022	0.000	0.022	0.000	1.000	0.000
Proportion by age		0.003		0.115		0.041		0.008		0.777		0.011		0.022		0.022			
Fork	Count	1		42		15		3		283		4		8		8		428	
Length	Average	570		606		566		628		601		568		623		607		601	
	Std. Dev.			21.96		21.74		6.11		20.84		14.86		20.34		29.25		23.59	
	Maximum	570		660		602		635		660		585		652		654		660	
	Minimum	570		570		537		623		523		553		602		563		517	
Mid-Eye	Count	1		42		15		3		283		4		8		8		428	
Fork Length	Average	528		560		521		579		554		526		573		561		554	
	Std. Dev.			20.11		19.63		4.04		18.94		13.43		18.95		26.74		21.57	
	Maximum	528		612		553		583		612		541		595		604		612	
	Minimum	528		528		495		575		485		512		550		521		475	
Post-Orbital	Count	1		42		15		3		283		4		8		8		428	
Hypural Length	Average	464		493		460		511		488		463		508		491		487	
	Std. Dev.			18.97		16.74		4.94		17.52		17.08		17.92		26.28		19.82	
	Maximum	464		536		489		516		536		485		530		531		536	
	Minimum	464		455		437		506		426		445		489		450		421	

* : Includes unaged samples.

Figure 11 – Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan enhanced) sampled in the lower Stikine River commercial fishery, 2017.

		42		52		62		63		Combined *	
		F	M	F	M	F	M	F	M	F	M
	N	20	5	228	76	1	1	7	0	290	92
	Proportion	0.059	0.015	0.675	0.225	0.003	0.003	0.021	0.000	0.759	0.241
Proportion by age		0.074		0.899		0.006		0.021			
Fork	Count	20	5	228	76	1	1	7		290	92
Length	Average	541	528	595	621	625	630	587		589	615
	Std. Dev.	15.52	28.20	20.05	24.77			27.26		25.11	32.92
	Maximum	570	555	650	683	625	630	605		650	683
	Minimum	515	485	540	505	625	630	530		510	485
Mid-Eye	Count	20	5	228	76	1	1	7		290	92
Fork Length	Average	502	484	549	566	575	573	541		544	561
	Std. Dev.	13.74	25.80	18.74	21.85			23.84		23.03	28.95
	Maximum	528	510	600	625	575	573	559		600	625
	Minimum	478	445	501	465	575	573	492		473	445
Post-Orbital	Count	20	5	228	76	1	1	7		290	92
Hypural Length	Average	440	429	484	500	508	505	474		479	495
	Std. Dev.	13.31	24.57	17.17	19.95			21.41		21.02	25.79
	Maximum	464	447	528	548	508	505	492		528	548
	Minimum	415	392	439	408	508	505	430		410	392

* : Includes unaged samples.

Figure 12 – Summary of age (GR), sex, and length characteristics of sockeye salmon (Tahltan wild) sampled in the lower Stikine River commercial fishery, 2017.

		41		42		52		53		63		64		74		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	1	0	14	0	298	0	5	0	78	0	3	0	1	0	441	0
	Proportion	0.003	0.000	0.035	0.000	0.745	0.000	0.013	0.000	0.195	0.000	0.008	0.000	0.003	0.000	1.000	0.000
Proportion by age		0.003		0.035		0.745		0.013		0.195		0.008		0.003			
Fork	Count	1		14		298		5		78		3		1		441	
Length	Average	560		543		592		552		597		551		622		590	
	Std. Dev.			28.69		22.33		14.15		22.76		20.65				25.37	
	Maximum	560		594		647		570		640		575		622		647	
	Minimum	560		490		485		533		539		537		622		485	
Mid-Eye	Count	1		14		298		5		78		3		1		441	
Fork Length	Average	519		503		547		511		552		510		575		545	
	Std. Dev.			25.89		20.75		13.06		20.16		17.42				23.19	
	Maximum	519		554		598		528		591		530		575		598	
	Minimum	519		455		451		494		500		498		575		451	
Post-Orbital	Count	1		14		298		5		78		3		1		441	
Hypural Length	Average	455		442		482		454		486		449		505		481	
	Std. Dev.			23.94		19.18		17.59		19.91		16.68				21.66	
	Maximum	455		483		526		480		525		468		505		526	
	Minimum	455		399		395		434		439		437		505		395	

* : Includes unaged samples.

Figure 13 –Summary of age (GR), sex, and length characteristics of sockeye salmon (Tuya enhanced) sampled in the lower Stikine River commercial fishery, 2017.

		42		52		53		62		63		64		75		Combined *	
		F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
	N	13	2	30	7	26	9	0	1	23	6	9	0	1	0	110	27
	Proportion	0.102	0.016	0.236	0.055	0.205	0.071	0.000	0.008	0.181	0.047	0.071	0.000	0.008	0.000	0.803	0.197
Proportion by age		0.118		0.291		0.276		0.008		0.228		0.071		0.008			
Fork	Count	13	2	30	7	26	9		1	23	6	9		1		110	27
Length	Average	558	533	601	626	555	589		625	619	649	576		567		583	608
	Std. Dev.	32.16	10.61	15.92	19.57	17.66	18.16			22.89	10.40	18.06				35.32	36.57
	Maximum	610	540	635	655	595	627		625	685	665	610		567		685	665
	Minimum	512	525	575	595	523	565		625	578	635	555		567		460	525
Mid-Eye	Count	13	2	30	7	26	9		1	23	6	9		1		110	27
Fork Length	Average	515	483	555	570	514	539		569	572	589	534		525		539	554
	Std. Dev.	28.71	2.20	16.43	16.67	16.10	15.67			21.27	9.02	17.91				32.84	32.32
	Maximum	564	485	588	595	550	570		569	632	603	564		525		632	603
	Minimum	467	482	520	543	485	517		569	535	577	510		525		428	482
Post-Orbital	Count	13	2	30	7	26	9		1	23	6	9		1		110	27
Hypural Length	Average	454	435	489	503	452	475		505	504	523	468		450		475	490
	Std. Dev.	27.37	0.10	14.42	15.99	16.32	12.22			18.42	11.24	14.58				29.32	28.47
	Maximum	496	435	516	525	485	504		505	556	535	495		450		556	535
	Minimum	417	435	465	478	426	463		505	470	505	450		450		375	435

* : Includes unaged samples.

Table 3 –Summary of egg diameter sample results by statistical week for the Stikine River commercial fishery, 2017.

Commercial Fishery - Egg diameter stock identification			
Stat. Wk.	**Mainstem**	**Tahltan/ Tuya**	**Total**
25			
26	8	120	128
27	5	122	127
28	12	138	150
29	36	116	152
30	47	111	158
31	64	83	147
32	50	52	102
33	35	27	62
34	51	37	88
35	57	20	77
36	63	9	72
	428	835	1263

Table 4 – Preliminary summary of weekly sockeye salmon stock proportions and harvest by stock in the Canadian commercial fishery, 2017.

Statistical Week	Week Ending	Weekly Catch		Mainstem	Tuya Enhanced	Tahltan Enhanced	Tahltan Wild	All Tahltan	Total
26	1-Jul	3,982	N	8	24	67	60	127	159
			Proportion	0.050	0.151	0.421	0.377	0.799	1.000
			Expanded #	**200**	**601**	**1,678**	**1,503**	**3,181**	**3,982**
27	8-Jul	5,767	N	5	27	59	65	124	156
			Proportion	0.032	0.173	0.378	0.417	0.795	1.000
			Expanded #	**185**	**998**	**2,181**	**2,403**	**4,584**	**5,767**
28	15-Jul	7,575	N	12	23	61	72	133	168
			Proportion	0.071	0.137	0.363	0.429	0.792	1.000
			Expanded #	**541**	**1,037**	**2,750**	**3,246**	**5,997**	**7,575**
29	22-Jul	6,137	N	36	24	52	57	109	169
			Proportion	0.213	0.142	0.308	0.337	0.645	1.000
			Expanded #	**1,307**	**872**	**1,888**	**2,070**	**3,958**	**6,137**
30	29-Jul	3,917	N	47	16	43	67	110	173
			Proportion	0.272	0.092	0.249	0.387	0.636	1.000
			Expanded #	**1,064**	**362**	**974**	**1,517**	**2,491**	**3,917**
31	5-Aug	2,455	N	64	9	38	46	84	157
			Proportion	0.408	0.057	0.242	0.293	0.535	1.000
			Expanded #	**1,001**	**141**	**594**	**719**	**1,314**	**2,455**
32	12-Aug	632	N	50	6	24	25	49	105
			Proportion	0.476	0.057	0.229	0.238	0.467	1.000
			Expanded #	**301**	**36**	**144**	**150**	**295**	**632**
33	19-Aug	696	N	35	0	10	17	27	62
			Proportion	0.565	0.000	0.161	0.274	0.435	1.000
			Expanded #	**393**	**0**	**112**	**191**	**303**	**696**
34	26-Aug	536	N	51	5	13	19	32	88
			Proportion	0.580	0.057	0.148	0.216	0.364	1.000
			Expanded #	**311**	**30**	**79**	**116**	**195**	**536**
35	2-Sep	857	N	57	3	9	10	19	79
			Proportion	0.722	0.038	0.114	0.127	0.241	1.000
			Expanded #	**618**	**33**	**98**	**108**	**206**	**857**
36	9-Sep	295	N	63	0	6	3	9	72
			Proportion	0.875	0.000	0.083	0.042	0.125	1.000
			Expanded #	**258**	**0**	**25**	**12**	**37**	**295**
		32,849 Total	**Expanded #**	**6,179**	**4,110**	**10,524**	**12,036**	**22,560**	**32,849**
			Proportion	0.188	0.125	0.320	0.366	0.687	1.000

Commercial Fishery – coho salmon

A total of 477 coho salmon were sampled in the commercial fisheries from 26 July to 6 September. The coho scale analysis has a low priority at the scale lab and results are not expected until late March – early April 2018; thus a summary figure for age, sex, and length characteristics cannot be generated for this report.

4.0 Budget Financial Summary

The Northern Endowment Fund allocation of $80,300 was fully expended. Submission of this report to the Pacific Salmon Commission is intended to satisfy the conditions for the release of

the 10% holdback of allocated funds ($8,030). A budget summary of expenditures can be referenced in Appendix 1.

5.0 Conclusion

The project objectives were met. Fisheries Technicians were able to successfully collect and record high quality samples and data. Weekly samples goals in both the test and commercial fisheries were met.

The public posting of fisheries notices for commercial openings and extensions were completed. The coordination of shipping otolith samples to Wrangel, Alaska on a weekly basis was carried out successfully. The communication of important daily/ weekly commercial/ test fishery catch information and results of fish sampling to fisheries managers was performed in a timely fashion.

The results from Chinook, sockeye, and coho samples provide critical information to fisheries managers on a daily/ weekly basis used to guide management actions relating to in-season stock conservation, escapement goal targets and harvest allocations for Stikine River salmon. The data are integral to stock assessment both in-season and post-season, including stock composition, abundance estimates, run reconstructions, productivity estimates, and exploitation of Stikine River salmon.

6.0 Acknowledgements

Cheri Frocklage – Tahltan Fisheries Co-ordinator

Kerry Carlick – Tahltan Fisheries Program Manager

Collin Ball – Tahltan Fisheries Technician

Mathieu DuCharme – Aquatic Science Technician (DFO)

Shawn McFarland - Aquatic Science Technician (DFO)

Shae Thomas - Aquatic Science Technician (DFO)

Russell Sampson – Sockeye Test Fishery Fisher

Great Glacier Salmon Ltd. – Commercial Fishers

Tsayta Air Ltd. – Air Charter

Atlin Air – Air Charter

Yukon Transboundary Rivers Area Administration and Expediting Staff

Appendix 1 - Budget Summary

Fisheries and Oceans Canada - PSC Project Budget Financial Report

Name of Project and PSC#:

STIKINE FISHERY SAMPLING & STOCK ASSESSMENT (NEF-2017-VHPC-XX)

EXPENDITURES

Labour

DFO Employee Salaries and Benefits

Position	Expenditures		Approved Budget	Total Expenditure	Variance
			$ -		
			$ -		
			$ -		
Total Expended	**$ -**	**Total Budget**	**$ -**	**$ -**	**$ -**

Subcontractors & Consultants

Contract	Contract Amount Expended		Approved Budget	Total Expenditure	Variance
Tahltan First Nation	$ 45,686.06		35,243		
Air Charter	$ 6,216.00		7,560		
Boat Charter	$ 3,673.32		11,340		
Otolith Delivery	$ 550.00		1,500		
Total Expended	**$ 56,125.38**	**Total Budget**	**$ 55,643.00**	**$ 56,125.38**	**$ (482.38)**
		Total Labour Summary	**$ 55,643.00**	**$ 56,125.38**	**$ (482.38)**

Site / Project Costs

Item	Amount Expended		Approved Budget	Total Expenditure	Variance
Travel	$ 5,864.16		$ 5,387.00		
Small Tools & Equipment	$ 1,046.64		$ 1,420.00		
Site Supplies & Materials	$ 9,394.45		$ 6,300.00		
Equipment Rental					
Work & Safety Gear	$ 670.48		$ 1,350.00		
Repairs & Maintenance	$ 3,471.81		$ 3,600.00		
Permits					
Other costs	$ 3,727.08		$ 2,700.00		
Total Expended	**$ 24,174.62**	**Total Budget**	**$ 20,757.00**	**$ 24,174.62**	**$ (3,417.62)**
		Total Site / Project Summary	**$ 20,757.00**	**$ 24,174.62**	**$ (3,417.62)**

Training Costs

Item	Amount Expended		Approved Budget	Total Expenditure	Variance
Name of course					
Total Expended	**$ -**	**Total Budget**	**$ -**	**$ -**	**$ -**
		Total Training Summary	**$ -**	**$ -**	**$ -**

Fisheries and Oceans Canada - PSC Project Budget Financial Report

Overhead / Indirect Costs

Item	Amount Expended		Approved Budget	Total Expenditure	Variance
Office space; including utilities, etc.					
Insurance					
Office supplies					
Telephone & long Distance			900		
Photocopies & printing					
Indirect/overhead costs			3,000		
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	**$ -**	**Total Budget**	**$ 3,900.00**	**$ -**	**$ 3,900.00**
		Total Overhead / Indirect Summary	**$ 3,900.00**	**$ -**	**$ 3,900.00**

Capital Costs / Assets (Value > $250.00)

Item	Amount Expended		Approved Budget	Total Expenditure	Variance
Total Expended	**$ -**	**Total Budget**	**$ -**	**$ -**	**$ -**
		Total Capital Cost / Asset Summary	**$ -**	**$ -**	**$ -**

Financial Report

Categories	Approved Budget (PSC Grant)	Project Expenditures	Variance
Labour	$ 55,643.00	$ 56,125.38	$ (482.38)
Site / Project Costs	$ 20,757.00	$ 24,174.62	$ (3,417.62)
Training	$ -	$ -	$ -
Overhead / Indirect Costs	$ 3,900.00	$ -	$ 3,900.00
Capital Costs / Assets	$ -	$ -	$ -
TOTAL	**$ 80,300.00**	**$ 80,300.00**	**$ -**

PST Project Funding Grant Advance Amount Received	**$ (72,270.00)**
PST Project Funding Grant Amount Remaining to be Paid	**$ (8,030.00)**
Difference Between Grant Amount and Project Expenditures	**$ -**

Project Manager Name	**Aaron Foos**	
Project Manager Signature	AF - digital signature	
Date	12-Mar-18	
DFO Responsibility Center Manager Name	**Bill Waugh**	
DFO Responsibility Center Manager Signature	BW - digital signature	
Date	12-Mar-18	

August 19/ 2017 – Lower Stikine Camp – Looking out over Stikine River

September 12/ 2017 – Great Glacier – Lower Stikine River Drainage