Executive Secretary's Summary of Decisions
2018 Fall Meeting

The Pacific Salmon Commission held its 2018 Fall Meeting from October 15-18, 2018 at the Listel Hotel (Vancouver, BC), and discussed a number of topics (see attached agenda).

The Commission AGREED:

1. The minutes from the 33rd annual meeting in February 2018 are approved.
2. The 2017 post-season reports are adopted as final, including revisions provided during summer 2018.
3. The United States will consider the October 2, 2018 letter from Canada providing updates on determining status reference points and associated exploitation rate caps for Canadian southern coho management units. This Commission will revisit this issue at the January 2019 post-season meeting.
4. The work plans from Panels and Committees are approved with the following notations:
    a. The Fraser River Panel should submit a Chapter 4 negotiating schedule as soon as possible, endeavoring to finish negotiations by February 2019 and no later than March 2019.
    b. Panels and Committees should examine the proposed new versions of Chapters 1, 2, 3, 5, and 6 for implementation tasks and timelines that affect them. For those affected, the Commission expects to receive implementation plans from the respective Panels/Committees by the end of the January 2019 post-season meeting.
    c. Panels and Committees should submit to the Secretariat any plans to hold meetings in November 2019 by the end of the February 2019 annual meeting.
    d. Going forward, work plans should cover the period from October through November of the following year. That will allow the Secretariat time to reserve meeting space, and the Secretariat will remind Panels and Committees of this change when requesting future work plans.
5. The guidance for the Northern Panel to launch reviews specified in the revised Chapter 2 (regarding Nass and Skeena sockeye escapement goals and District 4 pink salmon management) is accepted, and will be forwarded to the Northern Panel.
6. The CTC Functions and Operations Group (CTC FOG) is terminated as it has completed its tasks, and the Commission will send a memo to the CTC documenting the CTC FOG's work.
7. The verbal report from the Chinook Interface Group (CIG) is accepted with the following notations:
    a. The Parties will exchange lists of attendees for an expanded AWG meeting to be held Nov. 5-9, 2018.

b. The CIG can finalize the questionnaire for management entities regarding readiness to implement the CYER metric, with a view to getting responses by January 7, 2019.

c. At the January 2019 post-season meeting, the CIG will hear reports from the Parties regarding Okanagan Chinook conservation and the prosecution of U.S. fisheries in the Columbia River.

8. A bilateral committee comprised of Commissioners Anderson, Farlinger, and Turner plus Mr. Bowhay, Ms. Chang, Mr. Field, and Ms. Vandetta will finalize logistics of the "management entities meeting" planned for the 2019 annual meeting in Portland, OR.

ATTENDANCE

PACIFIC SALMON COMMISSION
FALL MEETING
OCTOBER 15-18, 2018
THE LISTEL HOTEL
VANCOUVER, BRITISH COLUMBIA

COMMISSIONERS

UNITED STATES	CANADA
B. Turner (Chair)	R. Reid (Vice Chair)
P. Anderson	S. Farlinger
W.R. Allen	J. McCulloch
W. Auger	M. Ned
R. Klumph	B. Riddell
M. Oatman	P. Sprout
C. Swanton	

Draft Agenda - Fall Meeting
October 15-19, 2018
Vancouver, B.C.

1. Adoption of Agenda
2. Executive Secretary's Report

Action Items Pending

3. Approval of minutes: February 2018
4. Executive Secretary's update on all "special issue" committees
    a. Fraser Strategic Review Committee
    b. CTC Function and Operations Group
5. Update on Annex IV amendment approval status
6. Adoption of final 2017 post-season reports
7. Fraser Strategic Review Committee: interim report (as agreed January 2018)
8. Chinook issues
    a. Status of phase 2 model recalibration
    b. Status of CYER implementation readiness
    c. Discussion Paper on Hatchery Add-Ons and TAE's
9. Update on coho status reference points and exploitation rate caps

Panels and Committees

10. Presentation of annual work plans
11. Instructions to Panels and Committees

Other Business

12. Chapter 4 (Fraser River) negotiating schedule
13. Planning for the management entities meeting (to be held February 2019)
14. Public comments as needed
15. Approval of officers for 2018/19

Attachment two

2018 Run status of Fraser sockeye salmon

Date: Oct. 12, 2018

Week of: Oct. 7 - Oct. 13, 2018	Sockeye				
	Management Group				Total
	E.Stuart	E.Summer	Summer	Late	Fraser
Mission passage (incldes Pitt, Alouette, Coquitlam)	121,400	1,128,300	2,066,500	2,318,300	5,634,500
Catch downstream of Mission	1,800	651,800	2,006,500	2,300,800	4,960,900
Accounted Run To Date	123,200	1,780,100	4,073,000	4,619,100	10,595,400
Catch upstream of Mission	6,800	147,100	315,900	356,200	826,000
Total Catch (all fisheries)	8,500	798,900	2,322,500	2,657,000	5,786,900
Run size adopted in-season [1]	**125,000**	**1,800,000**	**4,100,000**	**4,700,000**	**10,725,000**
Run size forecasted pre-season	84,000	2,155,000	4,344,000	7,398,000	13,981,000
Area 20 timing adopted in-season	**4/Jul**	**6/Aug**	**10/Aug**	**17/Aug**	**13/Aug**
Area 20 timing expected pre-season	2/Jul	8/Aug	11/Aug	17/Aug	14/Aug
Johnstone Str. Diversion Rate				Annual average to date	33%
				Preseason forecast of annual rate:	63%

1 Run sizes are usually not adopted until after the peak of the run has passed through marine test fishery areas in Juan de Fuca and Johnstone Straits.

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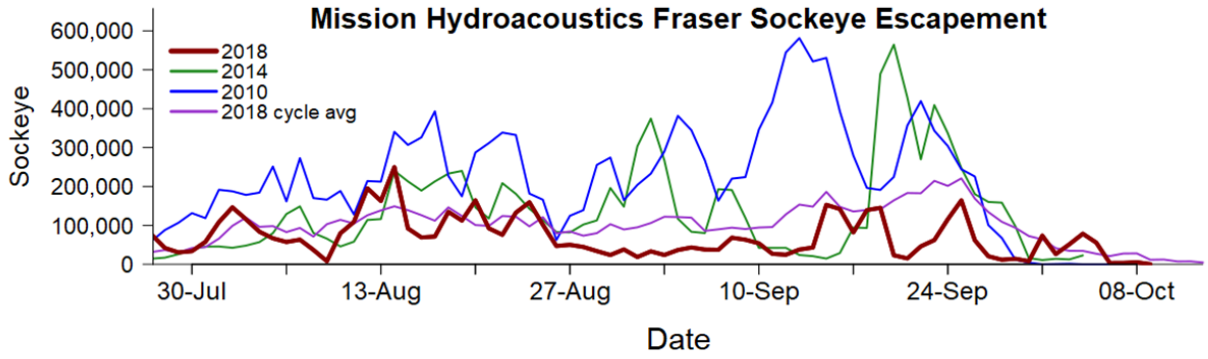

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2017 POST SEASON REPORT UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON TREATY

Report Submitted to the Pacific Salmon Commission

By the United States Section

December 29, 2017

TABLE OF CONTENTS

POST SEASON REPORT

I. PRELIMINARY 2017 SOUTHEAST ALASKA FISHERIES

NORTHERN BOUNDARY AREA FISHERIES

District 104 Purse Seine Fishery

The 2009 Pacific Salmon Treaty (PST) Agreement calls for abundance based management of the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye salmon prior to Alaska Department of Fish and Game (ADFG) statistical week 31 (referred to as the treaty period). The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual in-river escapement, whichever is less.

The District 104 purse seine fishery opens by regulation on the first Sunday in July. In 2017, the first potential opening was July 2 (week 27), but due to Skeena River sockeye salmon concerns ADF&G kept the fishery closed for the first two weeks of the season. The pre-week 31 fishing plan for District 104 was based on the preseason Canadian Department of Fisheries and Oceans (DFO) forecast returns of approximately 1,049,000 Nass and Skeena sockeye salmon. In the 2017 Treaty period (Alaska statistical weeks 27-30), 12,036 sockeye salmon were harvested during 10-hour openings in Week 29 and 30 (Table 1). A total of 24 purse seine vessels fished at some time in the district during the Treaty period. In past years 60% to 80% of Treaty-period sockeye salmon have been of Nass and Skeena origin, therefore we would anticipate between 7,200 and 9,600 Nass and Skeena sockeye may have been harvested in the District 104 purse seine fishery during the 2017 Treaty period. The final number of Nass and Skeena sockeye salmon harvested, and the actual harvest by stock, will not be available until harvest, escapement, and stock composition estimates are finalized for the year.

In 2017, a total of 2,107,243 pink salmon, 98,024 sockeye salmon, 52,472 chum salmon, 17,810 coho salmon, and 1,090 Chinook salmon were harvested in the District 104 purse seine fishery (Table 1). The number of days that the fishery was open and the number of boats fishing were both well below the 1985-2016 average (Figure 1 and 2). Chinook salmon harvests were below average in weeks where retention was allowed, and the harvest of 1,090 fish was 16% of the 1985-2016 average (Figure 3). Sockeye salmon harvests were below average all season (Figure 4) and the treaty period (week 28-30) harvest of 12,036 was only 12% of the 1985–2016 average. The total sockeye salmon harvest of 98,024 was 20% of the 1985–2016 average of 480,000 fish. Harvests of coho salmon were also well below average throughout the season (Figures 5) and the overall harvest of 17,810 was only 15% of the long-term average. The overall pink salmon

harvest of 2,107,243 was only 25% of the long-term average (Figure 6) and the chum salmon harvest of 52,472 was only 17% of the long-term average (Figure 7).

Since the Pacific Salmon Treaty was signed in 1985, the number of hours open, boats fishing and boat-days fished in the pre-Week 31 annex period in District 104 are down 56%, 62% and 85% respectively compared to the averages in the pre-treaty 1980-1984 period (Table 2). The total pre-week 31 Treaty-period sockeye salmon harvest is also down 48%. The seine fleet moves freely between districts as various species are harvested, so seining opportunities elsewhere affect the effort and catch in District 104.

Table 1.–Catch and effort in the Alaska District 104 purse seine fishery, 2017.

Week/ Opening	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
29	7/16	14	7,492	1,822	59,588	7,878	20	10
30	7/23	176	4,544	1,106	21,393	3,585	10	10
31	7/31	575	12,313	1,616	88,162	4,255	22	15
31B	8/4	315	7,036	986	89,041	2,906	25	15
32	8/8	4	7,343	1,048	182,439	3,583	18	15
32B	8/12	6	8,926	1,226	219,537	3,647	20	15
33	8/16	0	9,662	804	272,805	4,304	16	39
34	8/20	0	10,223	1,215	352,143	6,541	31	39
34B	8/24	0	9,802	817	308,774	4,563	28	39
35	8/28	0	9,140	2,064	259,215	4,886	27	39
35B	9/1	0	10,042	3,646	191,242	4,967	16	39
36	9/5	0	1,501	1,460	62,904	1,357	11	15
							Permits Fished	
Weeks 28-30		190	12,036	2,928	80,981	11,463	24	20
Weeks 31-36		900	85,988	14,882	2,026,262	41,009	59	270
Total		1,090	98,024	17,810	2,107,243	52,472	62	290

Table 2.–Fishing opportunity, effort, and sockeye salmon harvest prior to week 31 in the District 104 purse seine fishery, 1980–2017.

Year	Hours Fished	Individual Permits Fished	Days Fished (1d=15hrs)	Approximate Boat-Days	Sockeye Harvest	Sockeye Catch per Boat-Day
1980	207	244	13.8	2,877	266,273	93
1981	132	212	8.8	1,108	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	170,306	141
1984	132	174	8.8	805	103,319	128
1985	84	141	5.6	502	100,590	200
1986	108	194	7.2	968	91,320	94
1987	90	134	6	457	72,385	158
1988	108	210	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,643	561
1993	45	171	3	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	56	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	50	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,554	215
2003	52	40	3.5	97	84,742	875
2004	107	24	7.1	102	30,758	302
2005	68	38	4.5	93	35,690	382
2006	95	39	6.3	117	89,615	766
2007	50	68	3.3	136	112,135	824
2008	33	17	2.2	22	6,262	281
2009	72	38	4.8	95	15,971	168
2010	55	21	3.7	39	4,617	118
2011	84	29	5.6	77	25,280	329
2012	75	30	5.0	93	18,300	196
2013	46	36	3.1	59	13,102	222
2014	60	101	4	260	115,015	442
2015	70	39	4.7	100	43,873	439
2016	60	106	3.8	332	110,346	332
2017	20	24	1.3	20	12,036	602
Avg. 80-84	139	225	9	1,487	187,647	136
Avg. 85-17	62	86	4	230	97,618	471
% Change	-56%	-62%	-56%	-85%	-48%	248%

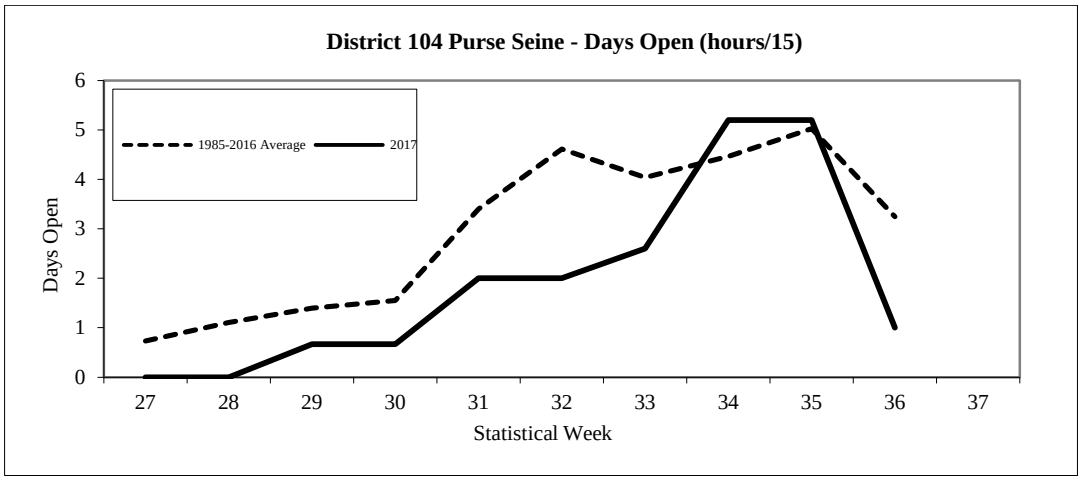


Figure 1.–Days open by week in the District 104 purse seine fishery, 2017.

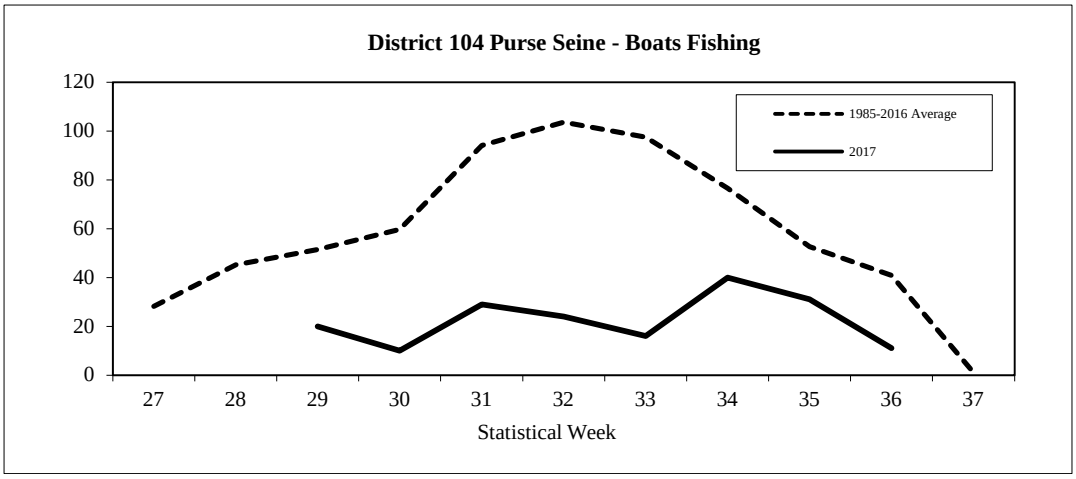


Figure 2.–Number of boats fishing by week in the District 104 purse seine fishery, 2017.

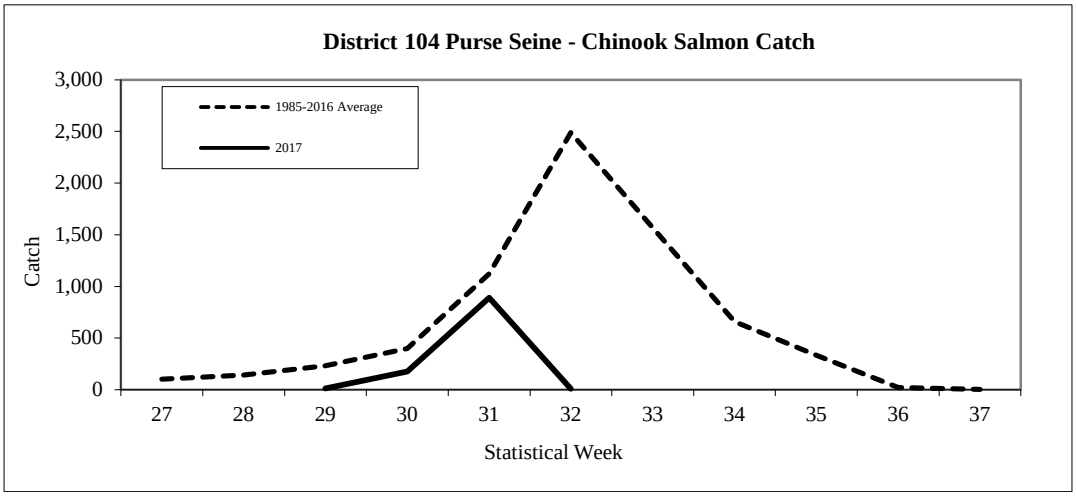


Figure 3.–Chinook salmon harvest by week in the District 104 purse seine fishery, 2017.

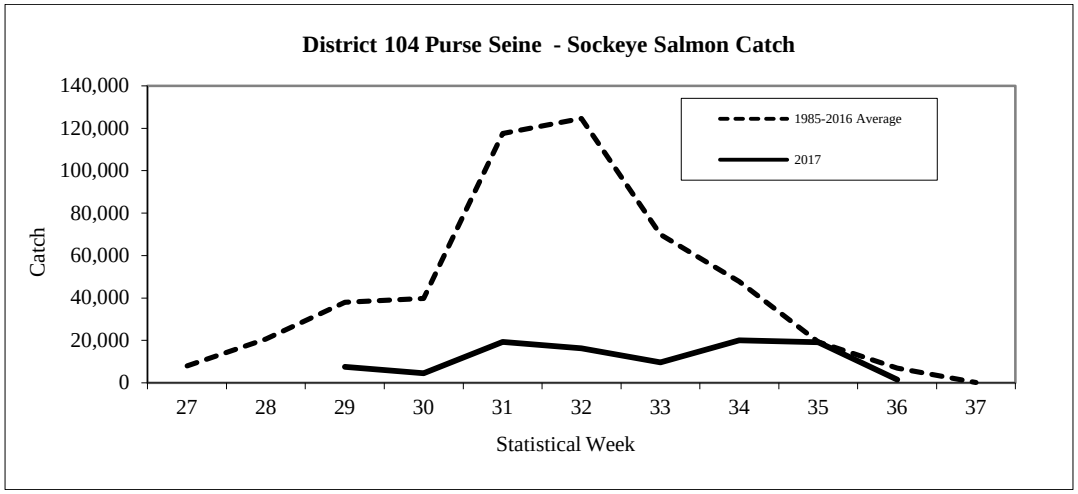


Figure 4.–Sockeye salmon harvest by week in the District 104 purse seine fishery, 2017.

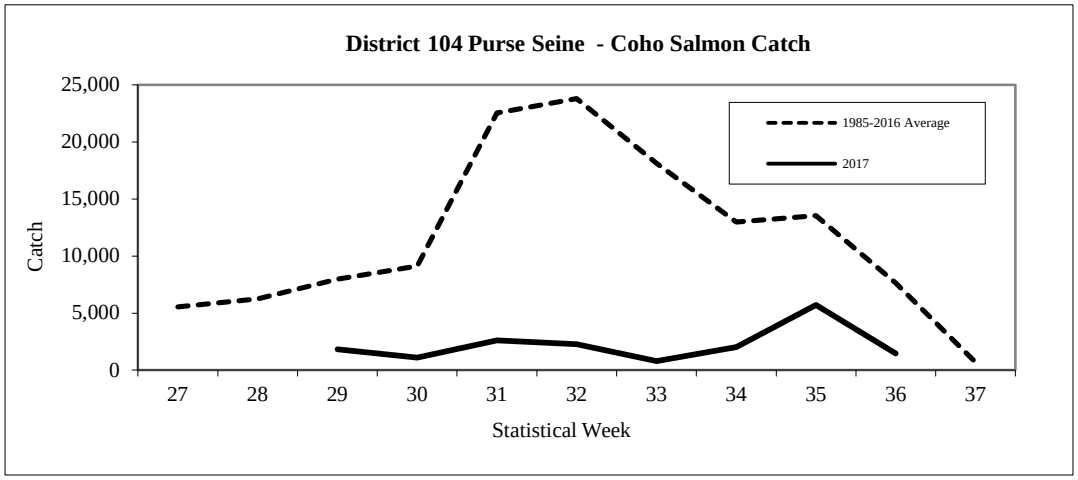


Figure 5.–Coho salmon harvest by week in the District 104 purse seine fishery, 2017.

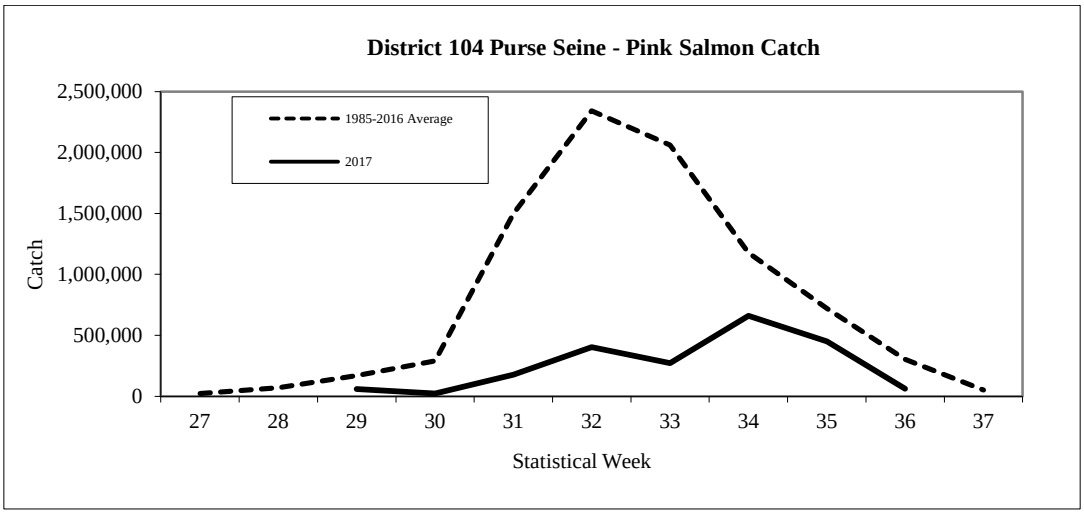


Figure 6.–Pink salmon harvest by week in the District 104 purse seine fishery, 2017.

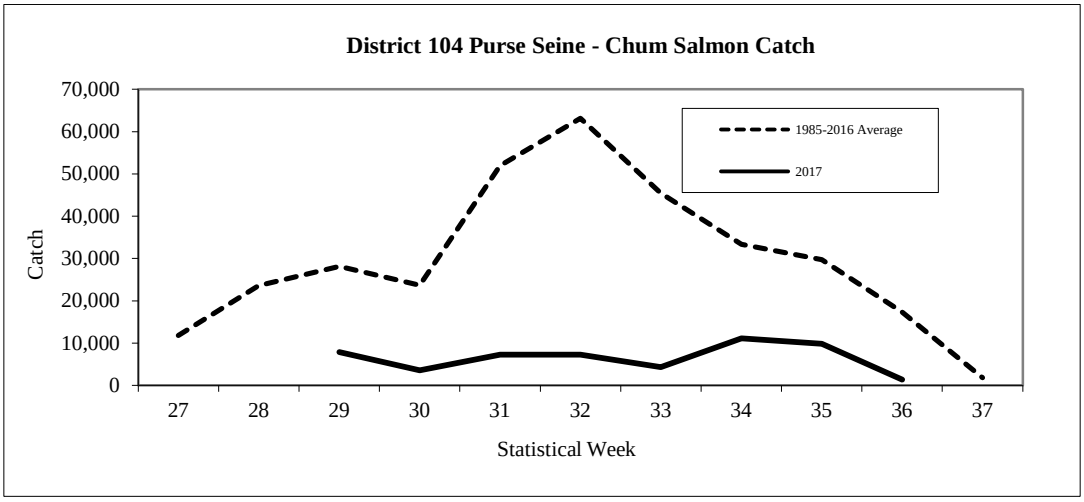


Figure 7.–Chum salmon harvest by week in the District 104 purse seine fishery, 2017.

District 101 Drift Gillnet Fishery

The 2009 PST agreement calls for abundance based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass River sockeye run. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200,000 or the actual in-river escapement, whichever is less. The return of Nass sockeye salmon was forecast at 454,000 in 2017 which, minus an escapement goal of 200,000, would result in an AAH of about 254,000. Using this forecast, the 2017 allowable harvest in the District 101 drift gillnet fishery was approximately 35,100 Nass River sockeye salmon.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June, which was June 18 in 2017. During the early weeks of the fishery, management is based on the run strength

of Alaska wild stock chum and sockeye salmon and on the run strength of Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the District 101 Pink Salmon Management Plan begins the third Sunday in July and sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time. Beginning in Week 36 (September 3) management was based on the strength of wild stock fall chum and coho salmon.

The District 101 drift gillnet fishery opened Sunday June 18 (week 25) in 2017. The number of days the fishery was open was near average all season (Figure 8), but the number of boats fishing during weekly openings was below average throughout the season (Figure 9). The total number of individual boats fishing during the season was 73, which was 66% of the 1985-2016 average of 110 boats. A total of 25,073 sockeye salmon were harvested, which was only 21% of the 1985-2016 average of 117,456 fish and was the lowest harvest since the inception of the Pacific Salmon Treaty (Tables 3 and 4). Harvests of sockeye salmon were well below treaty period averages throughout the season (Figure 10). The cumulative sockeye salmon harvest prior to the initiation of the PSMP in Week 30 was 13,887 fish, or about 55% of the season's total sockeye salmon harvest. The final number of Nass River sockeye harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2017 season. In past years approximately 65% of the District 101 gillnet sockeye harvest has been of Nass River origin, therefore we would anticipate that approximately 16,300 Nass River sockeye may have been harvested in the District 101 gillnet fishery in 2017.

Coho salmon harvests were below average for most weeks of the season and the total harvest of 33,853 fish was 68% of the treaty period average (Figure 11). Pink salmon harvests were near or below average all season and the total harvest of 223,439 fish was 44% of average (Figure 12). Chum salmon harvests were near or below average in most weeks of the fishery and the total harvest of 223,394 fish was 73% of average (Figure 13). Chinook salmon harvests were near average throughout the season (Figure 14).

Table 3.–Weekly harvest and effort in the Alaska District 101 commercial drift gillnet fishery, 2017.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
25	6/18	388	4,926	225	24	13,663	43	96
26	6/25	426	1,613	536	1,799	41,654	53	96
27	7/2	336	2,891	738	18,916	56,873	48	96

28	7/9	188	2,375	1,219	27,898	35,958	49	96
29	7/16	178	2,082	3,540	19,380	20,882	48	96
30	7/23	50	1,857	1,109	16,308	12,204	37	96
31	7/30	49	3,302	1,059	29,617	12,057	39	96
32	8/6	20	2,457	975	30,063	4,696	36	96
33	8/13	4	1,011	663	30,428	4,502	26	96
34	8/20	5	1,035	953	25,948	5,677	33	120
35	8/27	6	1,079	2,927	18,351	5,451	36	96
36	9/3		292	5,275	4,179	3,987	34	96
37	9/10	12	85	7,569	361	3,456	39	96
38	9/17	2	65	5,095	163	1,070	30	96
39	9/18		3	1,970	4	264	18	96
Total		1,664	25,073	33,853	223,439	222,394	73	1,464
1985-2016 Avg.		1,474	117,456	49,480	510,123	304,026	110	1,368

Table 4.–Sockeye salmon harvest in the Alaska District 101 gillnet fishery, 1985 to 2017, and comparison of harvest and effort (boats, hours, and boat-hours) between weeks 26 and 35 when sockeye salmon are most abundant in this district.

	Total	Catch and Effort between Weeks 26-35			
Year	Sockeye Harvest	Sockeye Harvest	Individual Permits Fished	Total Hours Open	Boat-Hours[1]
1985	173,100	159,021	155	1,032	106,209
1986	145,699	143,286	201	960	109,490
1987	107,503	106,638	178	615	64,104
1988	116,115	115,888	192	756	93,072
1989	144,936	130,024	178	1,023	117,465
1990	85,691	78,131	159	840	70,421
1991	131,492	123,508	136	984	80,064
1992	244,649	243,878	118	1,080	94,159
1993	394,098	390,299	149	1,032	102,814
1994	100,377	98,725	144	984	74,408
1995	164,294	151,131	140	1,008	82,512
1996	212,403	175,569	130	1,104	86,108
1997	169,474	152,662	138	1,008	81,672
1998	160,506	159,307	124	1,044	87,358
1999	160,028	158,268	118	1,032	80,424
2000	94,651	94,399	95	912	49,488
2001	80,041	62,129	76	1,020	46,874
2002	120,353	106,360	76	1,008	42,528
2003	105,263	96,921	71	1,104	44,008
2004	142,357	141,395	61	1,104	42,400
2005	79,725	75,875	70	1,104	40,864
2006	62,770	53,048	48	840	28,265
2007	66,822	50,642	56	1,032	33,713
2008	34,113	30,672	54	936	31,961

2009	69,859	69,325	65	1,080	43,432
2010	62,680	61,987	68	1,008	45,135
2011	88,618	87,744	87	840	47,627
2012	62,506	40,518	85	1,008	43,695
2013	54,575	45,413	92	1,104	59,437
2014	55,828	49,722	73	1,095	44,551
2015	28,155	27,365	71	912	35,946
2016	39,912	38,078	71	1,008	44,640
2017	25,073	19,702	68	984	39,672
Average 1985-2015	117,456	109,935	109	988	64,214

[1]Boat-hours equals the sum of all weekly estimates of boat-hours: boats fished multiplied by open hours. Boat-hours does not equal individual permits fished multiplied by total open hours.

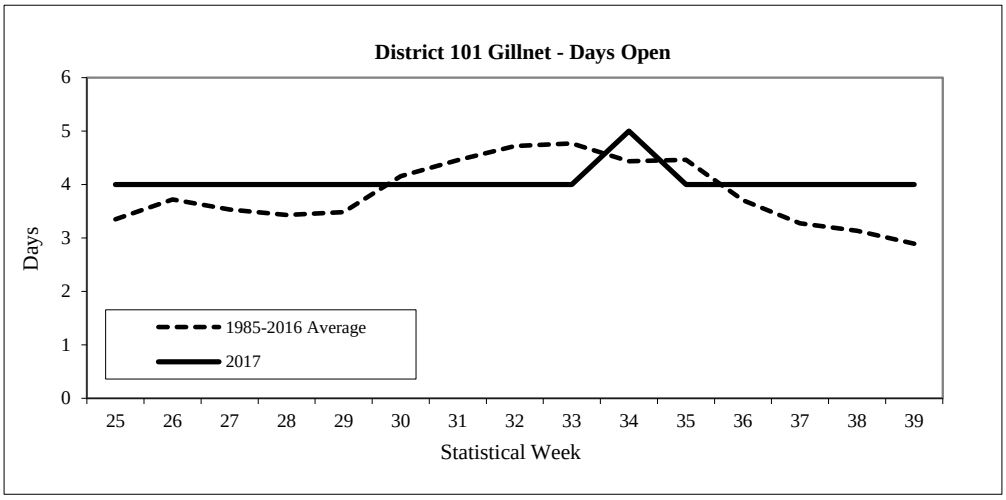


Figure 8.–Days open by week in the District 101 drift gillnet fishery, 2017.

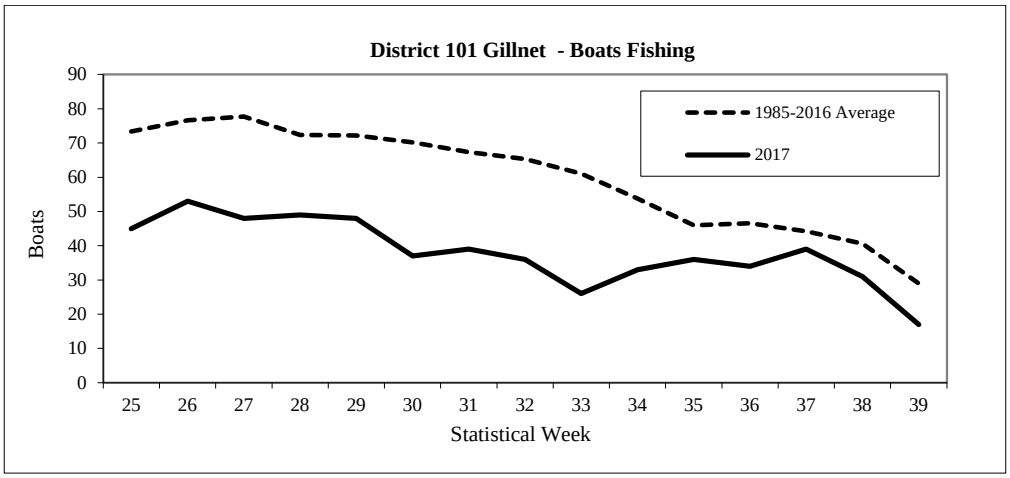


Figure 9.–Number of boats fishing by week in the District 101 drift gillnet fishery, 2017.

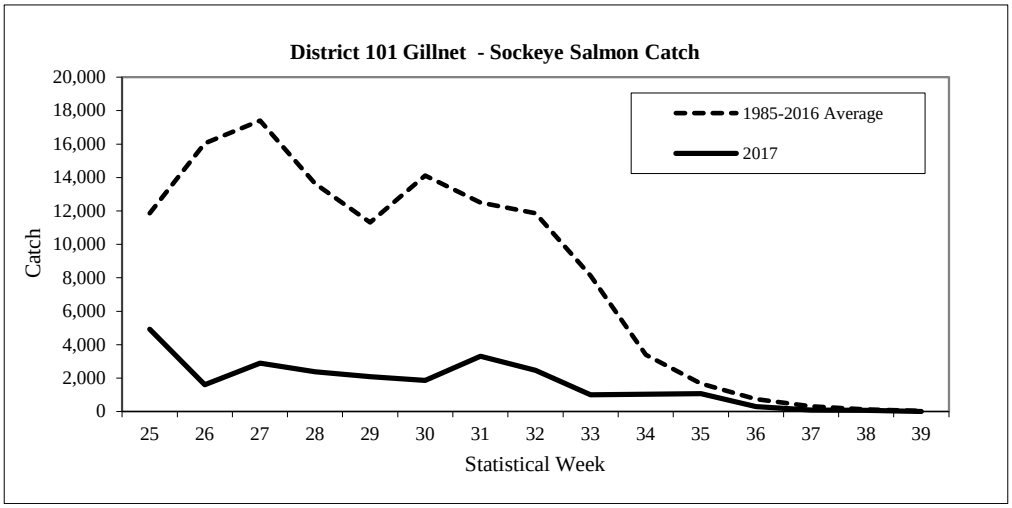


Figure 10.–Sockeye salmon harvest by week in the District 101 drift gillnet fishery, 2017.

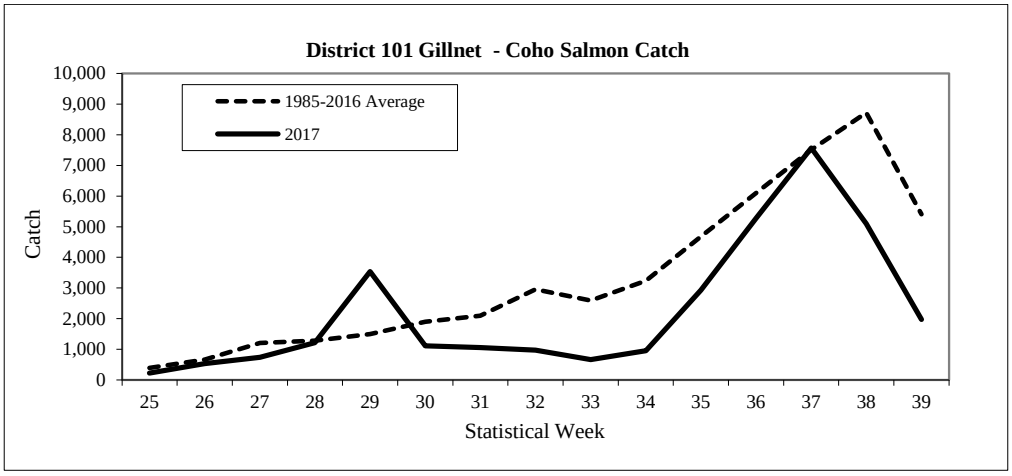


Figure 11.–Coho salmon harvest by week in the District 101 drift gillnet fishery, 2017.

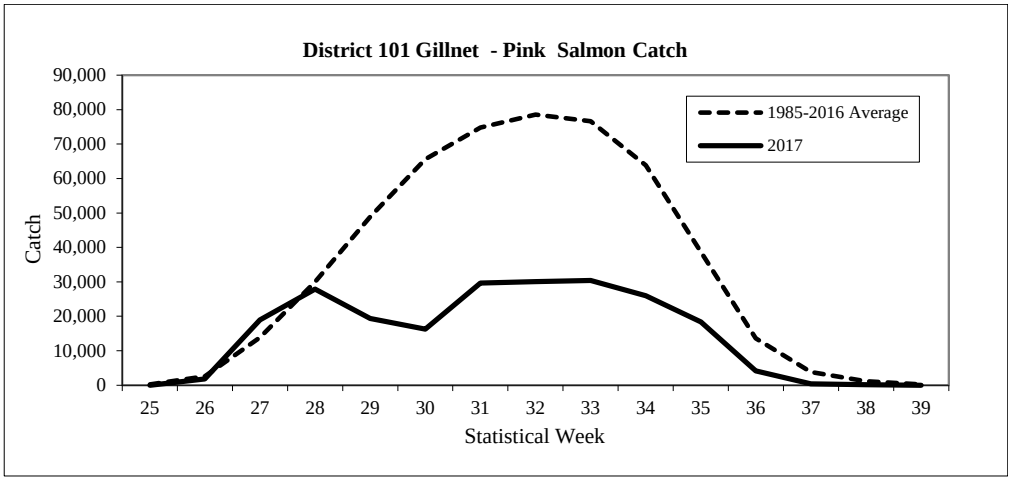


Figure 12.–Pink salmon harvest by week in the District 101 drift gillnet fishery, 2017.

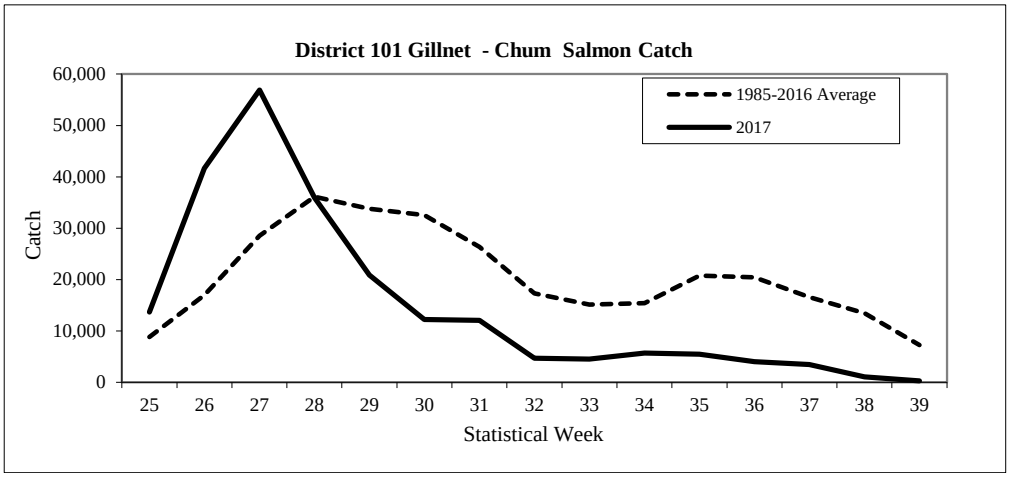


Figure 13.–Chum salmon harvest by week in the District 101 drift gillnet fishery, 2017.

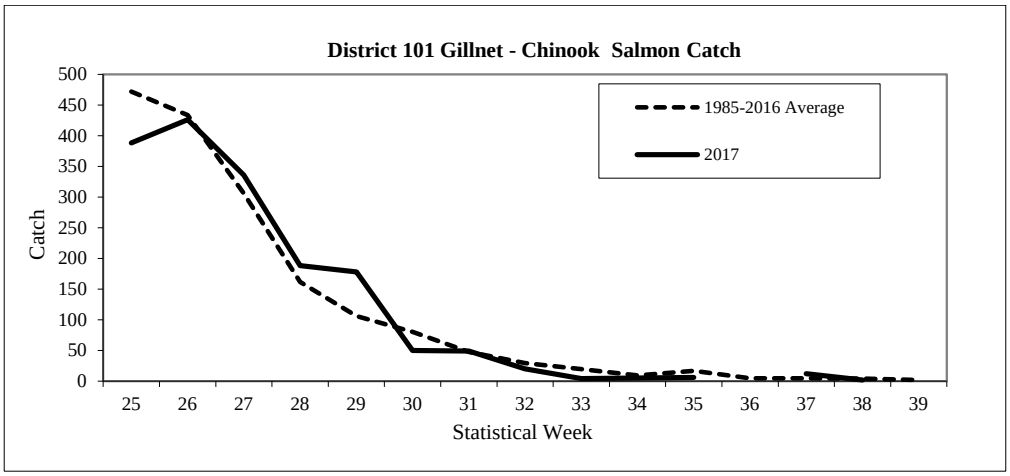


Figure 14.–Chinook salmon harvest by week in the District 101 drift gillnet fishery, 2017.

Pink, Sockeye, and Chum Salmon Escapements

Escapements of pink salmon were generally strong throughout Southeast Alaska. The total 2017 Southeast Alaska pink salmon escapement index of 13.88 million index fish ranked 14th since 1960. Biological escapement goals were met in all three subregions of Southeast Alaska in 2017 (Table 5). On a finer scale, escapements met or exceeded management targets for all 15 districts in the region and for 40 of the 46 pink salmon stock groups in Southeast Alaska. The Southern Southeast Subregion includes all of the area from Sumner Strait south to Dixon Entrance (Districts 101–108). The escapement index value of 6.39 million was within the escapement goal range of 3.0 to 8.0 million index fish. The pink salmon harvest of 9.4 million in the Southern Southeast Subregion was 41% of the recent 10-year average. The overall Southeast Alaska pink salmon harvest of 34.0 million fish was approximately 88% of the 2008–2017 average of 38.8 million.

Table 5.–Southeast Alaska 2017 pink salmon escapement indices and biological escapement goals by subregion (in millions).

Subregion	2017 Pink Salmon Index	Biological Escapement Goal	
		Lower Bound	Upper Bound
Southern Southeast	6.39	3.0	8.0
Northern Southeast Inside	4.65	2.5	6.0
Northern Southeast Outside	2.84	0.75	2.50
Total	13.88		

Sockeye salmon returns throughout Southeast Alaska were mixed in 2017, and escapement targets were met for 8 of the 12 sockeye salmon systems with formal escapement goals. The Hugh Smith Lake adult sockeye salmon escapement was 14,800, which was within the optimal escapement goal range of 8,000 to 18,000 adult sockeye salmon. Based on the expanded peak foot survey count, the escapement of sockeye salmon into McDonald Lake was estimated to be 24,000 fish, which was far below the sustainable escapement goal range of 55,000 to 120,000.

For summer-run chum salmon, lower bound sustainable escapement goals were met for two of the three subregions in Southeast Alaska. In Southeast Alaska, runs are broken into summer and fall runs. The Southern Southeast summer-run chum salmon stock group is composed of an aggregate of 15 summer-run chum salmon streams on the inner islands and mainland of southern Southeast Alaska, from Sumner Strait south to Dixon entrance, with a sustainable escapement goal of 62,000 index spawners (based on the aggregate peak survey to all 15 streams). Summer chum salmon escapements were average at most index streams in southern Southeast Alaska, and the index of 84,000 in 2017 was above goal (Figure 15).

Cholmondeley Sound is the only area in southern Southeast Alaska with a formal escapement goal for fall chum salmon. Fall chum salmon runs are monitored in Cholmondeley Sound through aerial surveys at Disappearance and Lagoon creeks. The escapement index of 52,000 was just above the upper bound of the sustainable escapement goal range of 30,000 to 48,000 index spawners (based on the aggregate peak survey to both streams; Figure 16).

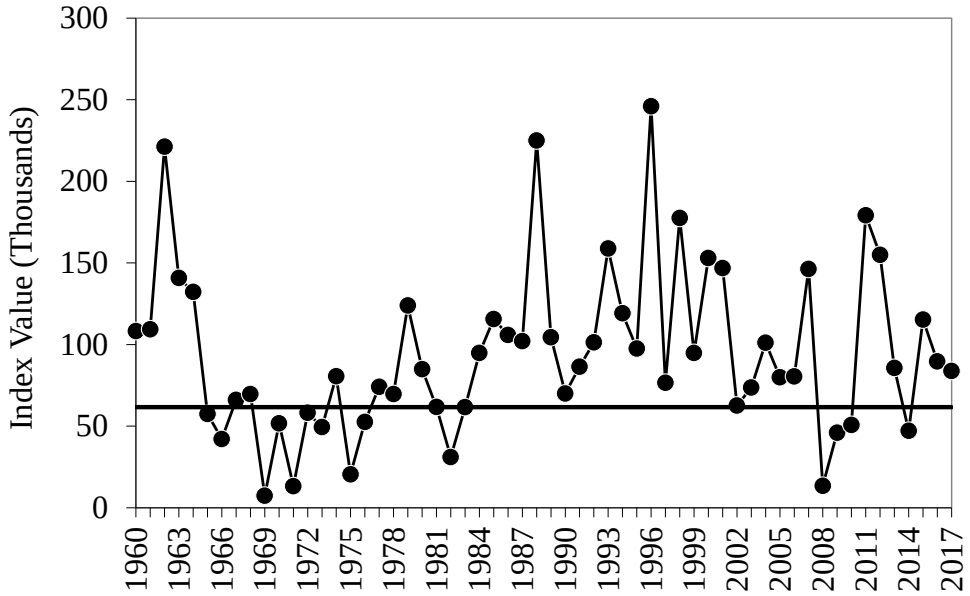


Figure 15.–Observed escapement index value by year (solid circles) and the sustainable escapement goal threshold of 62,000 index spawners (horizontal line) for wild summer-run chum salmon in the Southern Southeast Subregion, 1960–2017.

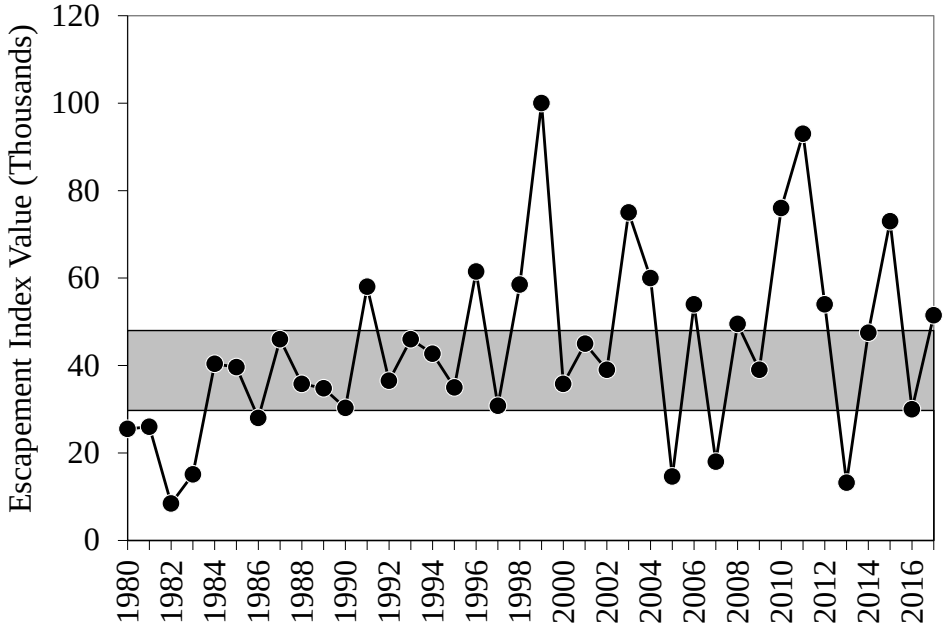


Figure 16.–Observed escapement index value by year (solid circles) and the sustainable escapement goal range of 30,000 to 48,000 index spawners (shaded area) for Cholmondeley Sound fall-run chum salmon, 1980–2017.

TRANSBOUNDARY AREA FISHERIES

Stikine River Area Fisheries

The initial 2017 preseason forecast for large Chinook salmon returning to the Stikine River was approximately 18,300 fish, which did not allow for directed Chinook salmon fisheries in District 108. The standard mark-recapture program was not run this year due to the low forecasted run and the desire by both countries to reduce mortality associated with the program. Inseason estimates produced by the Stikine Chinook Management Model (SCMM) indicated a run size less than 14,000 fish initially and less than 10,000 fish later in the season. More exact estimates of run size were not available due to low numbers of fish caught, thus creating very low confidence in model estimates. The post-season SCMM projected a terminal run of less than 10,000 fish and an escapement of well below the escapement goal range of 14,000 to 28,000 fish. The final run size estimate was not available by the time of publication.

The 2017 preseason forecast for sockeye salmon returning to the Stikine River was 185,000 fish, which was above the recent 10-year average of 168,000 fish. The 2017 forecast included approximately 58,000 wild Tahltan (31%), 45,000 enhanced Tahltan (28%), 24,000 enhanced Tuya (13%), and 51,000 mainstem (28%) sockeye salmon. Due to the near identical return timing of the Tahltan Lake and Tuya Lake stocks, any open fishing periods in District 108, and to a lesser extent in District 106, were determined by the inseason abundance estimate of the Tahltan Lake return. Typically, the Tahltan Lake and Tuya Lake sockeye salmon run timing peaks in statistical week 27 (June 26–July 2) through the Districts 106 and 108 fisheries. During an average Tahltan Lake run significant numbers of sockeye salmon could be present as early as statistical week 25 (June 12–18) and as late as statistical week 31 (July 24–30). The 2017 returns of local area sockeye salmon stocks were expected to be average.

Due to the poor performance of Chinook salmon stocks in SE Alaska, restrictions were implemented in the Districts 106 and 108 gillnet fisheries to conserve Chinook salmon. In District 106, a six-inch maximum mesh restriction was in place for the first two openings. In District 108, in addition to a one week delay of the initial opening; time, area, and mesh restrictions were also implemented through statistical week 28 (July 9–July 15). Estimated harvest of large Stikine River Chinook salmon by the District 108 drift gillnet fishery during the sockeye salmon directed fishery period (week's 26–29) was 18 fish based on GSI. The District 108 Spring Troll hatchery access fishery began May 1 and was restricted to one hatchery access area near Anita Bay. Open time was limited to four openings of two days each, then closed on May 24th. Commercial trolling remained closed in District 108 until the opening of the Summer Troll fishery on July 1st. U.S. harvest of large Stikine River Chinook salmon in all District 108 fisheries was estimated to be 193 fish; well below the U.S. base level catch (BLC) of 3,400 fish.

The District 106 drift gillnet sockeye salmon fishery opened Monday, June 18 (week 25) and the District 108 drift gillnet fishery opened Monday, June 25th (week 26). The initial opening in

District 106 was limited to two days. The following week, both districts were opened for three days and area was limited in District 108. For week's 27 and 28, area restrictions were relaxed in District 106, but continued in District 108 and fishing time peaked with four days in District 106 and five days in District 108 to harvest the surplus Tahltan River sockeye salmon. By week 29, it became apparent that sockeye salmon returning to the Stikine River were coming in below expectations and open time in District 108 was reduced by one day each week until week 31. Open time in District 106 also experienced weekly reductions starting in week 29 with weeks 30 and 31 being limited to two days for McDonald Lake sockeye conservation (Tables 6 and 7). The preliminary postseason assessment for Stikine River sockeye salmon was 103,400 fish and included 36,200 wild Tahltan (35%), 28,800 enhanced Tahltan (28%), 8,600 Tuya (8%), and 29,800 Mainstem (29%) fish.

Districts 106 and 108 were managed based on pink salmon abundance during the month of August. Three day openings occurred in weeks 32 through 34 and the final opening for pink salmon management was for two days in week 35 (Figures 17 and 24). In early September, management focus switched to coho salmon and the fisheries continued to be open for two days weekly through the remainder of the fisheries.

The number of permits participating in the District 106 fishery was near average in most weeks (Figure 18), and the seasonal number of permits fished was 99% of average (Table 6). The number of permits participating in the District 108 fishery was below average during the sockeye salmon fishery; the 122 permits fished was 88% of the average of 139 permits (Figure 25; Table 7).

During the 2017 season, 302,033 pink salmon, 45,005 sockeye salmon, 234,349 chum salmon, 49,382 coho salmon, and 1,521 Chinook salmon were harvested in the District 106 drift gillnet fishery (Table 6). Chinook salmon harvests were generally below average from late June through mid-July (Figure 19) and were comprised of 65% Alaska hatchery origin fish. Sockeye salmon harvests were below average all season (Figure 20), and the total sockeye salmon harvest of 45,005 fish was 51% of the recent 10-year average; 9,800 were estimated to be of Stikine River origin. Harvests of coho salmon were also below average throughout the fishery. The overall harvest of 49,382 coho salmon was 33% of the recent 10-year average of 148,819 fish (Figure 21). Pink salmon harvests were varied throughout the season (Figure 22), and the overall harvest of 302,033 fish was 105% of the recent 10-year average. Chum salmon harvests were well above average in the first five weeks of the fishery and were near average from late July through the end of the season. The overall harvest of 234,349 fish was 145% of average (Figure 23).

During the 2017 season, 49,027 pink salmon, 14,282 sockeye salmon, 177,119 chum salmon, 13,504 coho salmon, and 3,817 Chinook salmon were harvested in the District 108 drift gillnet

fishery (Table 7). The harvest of Chinook salmon was near average in all but the first week of the fishery and was comprised of 97% Alaska hatchery origin fish for the season (Figure 26). An estimated 193 Stikine River large Chinook salmon were harvested in District 108 from weeks 26 through 29 by subsistence, sport, troll, and drift gillnet fisheries. Sockeye salmon harvests were below average during the peak weeks of the season (Figure 27) and the total sockeye salmon harvest of 14,282 fish was only 37% of the recent 10-year average. An estimated 12,093 fish, or 85% of the harvest, were estimated to be Stikine River sockeye salmon. The overall coho salmon harvest of 13,504 fish was also well below the recent 10-year average of 29,496 fish (Table 7, Figure 28). Pink salmon harvests were near or above average most of the season and the overall harvest was 110% of the recent 10-year average (Figure 29). Chum salmon harvests were well above average during the first four weeks of the season and the overall harvest of 177,119 fish was 123% of the recent 10-year average (Figure 30).

Table 6.–Weekly salmon harvest in the Alaskan District 106 commercial drift gillnet fisheries, 2017.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	198	2,771	344	799	8,313	51	2	102
26	25-Jun	350	6,183	1,029	7,758	39,667	67	3	201
27	2-Jul	274	6,645	2,196	27,943	53,407	56	4	224
28	9-Jul	221	6,473	3,122	21,883	28,369	49	4	196
29	16-Jul	140	6,359	2,398	28,372	26,532	57	3	171
30	23-Jul	95	4,380	1,827	17,358	10,352	53	2	106
31	30-Jul	37	3,051	1,852	22,496	10,739	52	2	104
32	6-Aug	99	4,015	2,569	54,474	7,668	61	3	183
33	13-Aug	19	2,781	4,519	70,547	8,020	75	3	225
34	20-Aug	7	869	2,221	17,613	3,944	53	3	159
35	27-Aug	20	1,071	5,739	22,328	12,086	65	2	130
36	3-Sep	25	312	5,575	7,859	11,459	69	2	138
37	10-Sep	25	65	7,162	1,989	8,055	71	2	142
38	17-Sep	18	24	5,049	558	4,037	48	2	96
39	24-Sep	2	6	3,047	56	1,372	29	2	58
40	1-Oct			733		329	14	2	28

Total	1,521	45,005	49,382	302,033	234,349	149	41	2,263
2007-2016 Average	2,236	87,544	148,866	286,707	161,187	150	48	2,753
2017 as % of Average	68%	51%	33%	105%	145%	99%	85%	82%

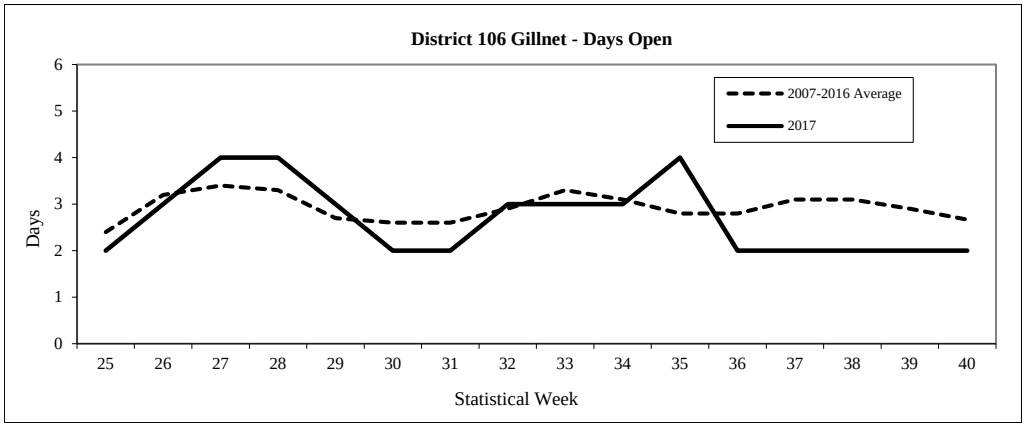


Figure 17.– Days open by week in the District 106 drift gillnet fishery, 2017.

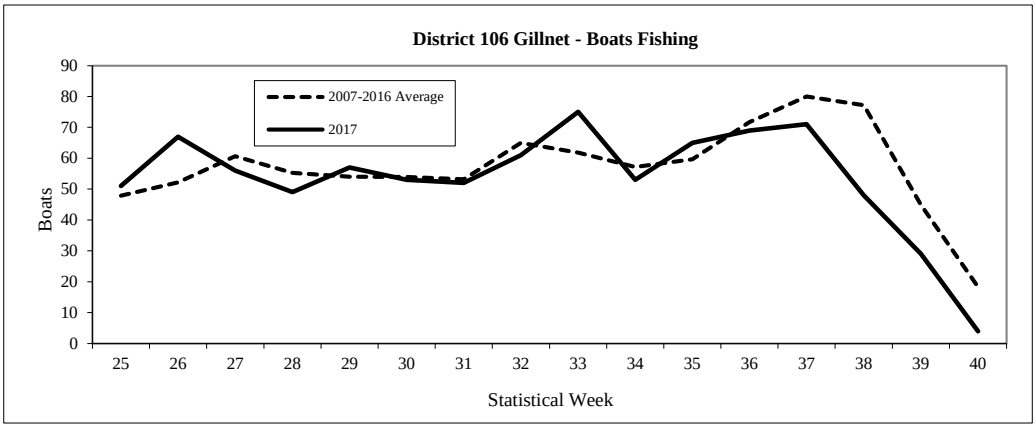


Figure 18.–Number of boats fishing by week in the District 106 drift gillnet fishery, 2017.

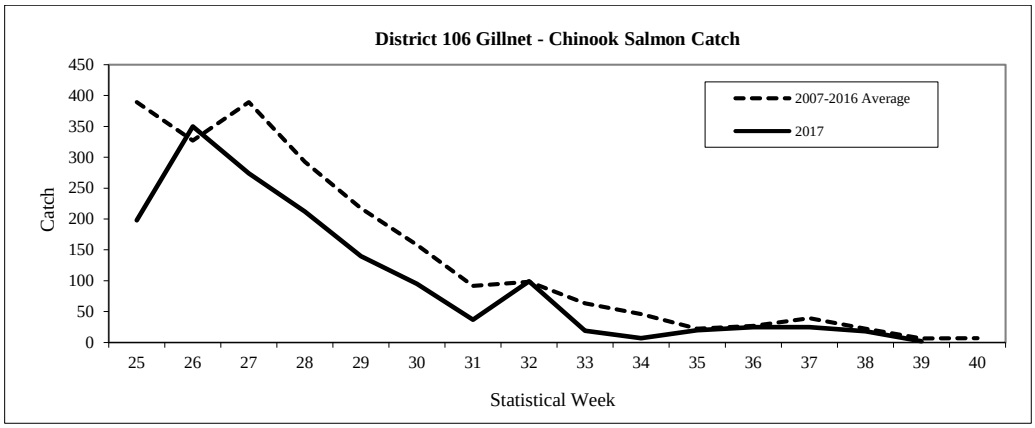


Figure 19.–Chinook salmon harvest by week in the District 106 drift gillnet fishery, 2017.

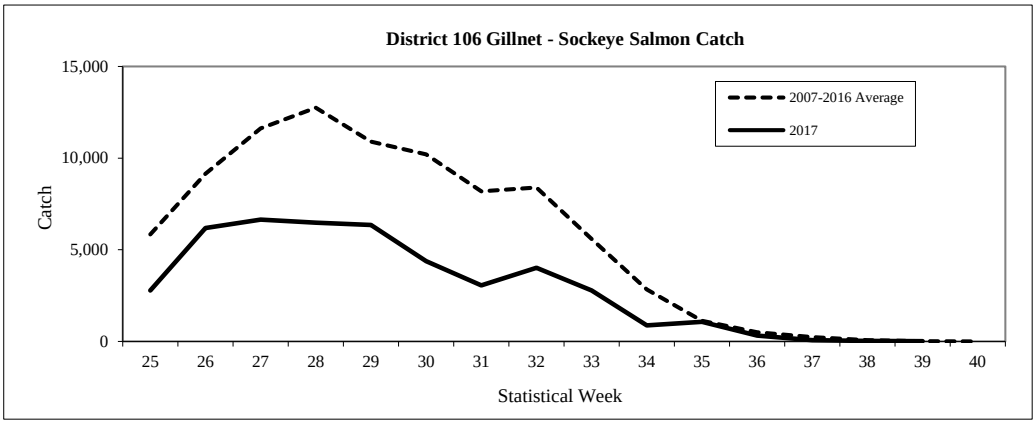


Figure 20.–Sockeye salmon harvest by week in the District 106 drift gillnet fishery, 2017.

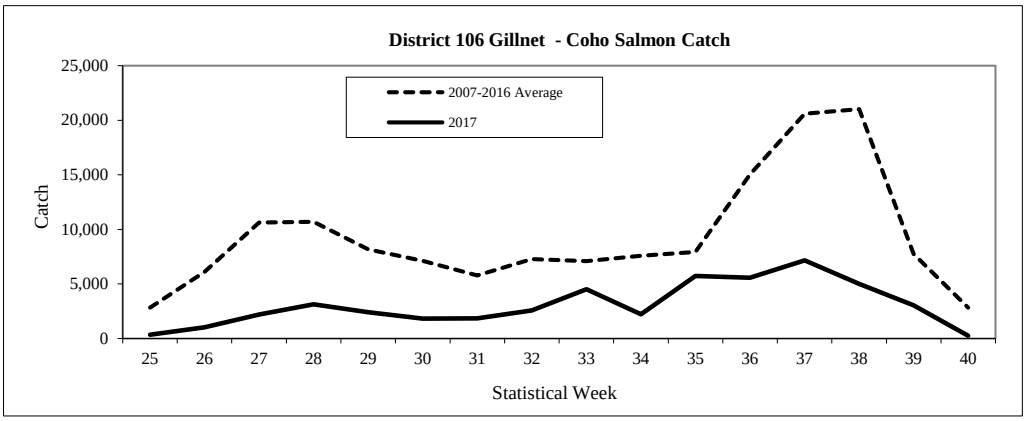


Figure 21.–Coho salmon harvest by week in the District 106 drift gillnet fishery, 2017.

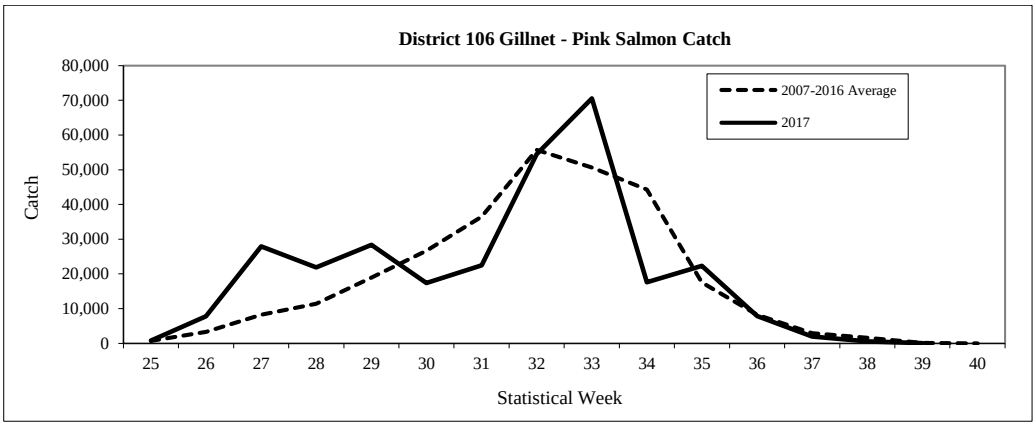


Figure 22.–Pink salmon harvest by week in the District 106 drift gillnet fishery, 2017.

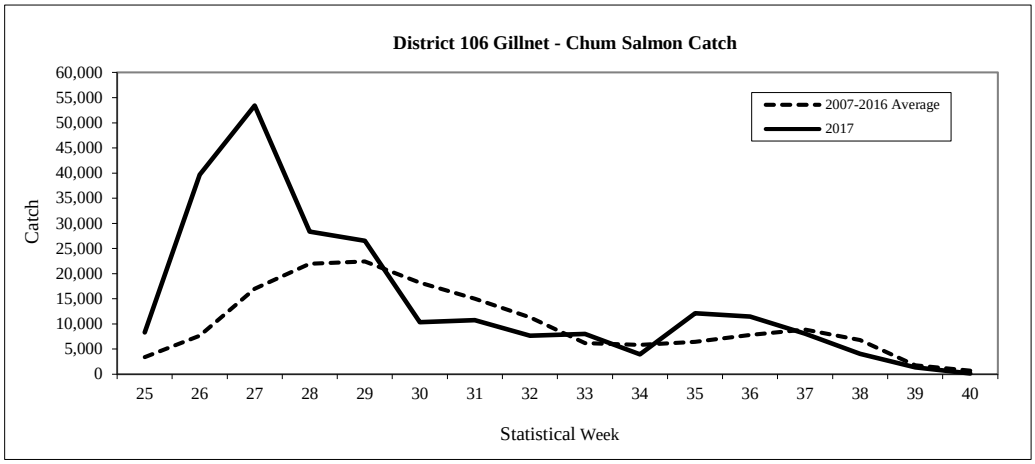


Figure 23.–Chum salmon harvest by week in the District 106 drift gillnet fishery, 2017.

Table 7.–Weekly salmon harvest and effort in the Alaskan District 108 traditional commercial drift gillnet fishery, 2017.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
26	25-Jun	314	1,283	50	86	5888	23	3	69
27	2-Jul	1,567	3,962	160	1,730	36,023	47	5	153
28	9-Jul	875	3,388	253	5,517	36,186	53	5	201

29	16-Jul	572	2,372	334	7,118	39,664	65	4	195
30	23-Jul	258	1,279	274	7,160	26,116	65	3	130
31	30-Jul	106	499	318	5,372	20,253	53	2	106
32	6-Aug	87	874	924	10,729	5,166	42	3	126
33	13-Aug	25	317	1,473	8,158	2,876	32	3	96
34	20-Aug	8	131	1,023	2,597	886	28	3	84
35	27-Aug		110	1,576	351	529	18	2	36
36	3-Sep	1	57	2,493	188	1,524	24	2	48
37	10-Sep	4	2	1,966	19	946	28	2	56
38	17-Sep		8	1,916	1	802	22	2	44
39	24-Sep			599	1	253	13	2	26
40	1-Oct			145		7	5	2	10
Total		3,817	14,282	13,504	49,027	177,119	122	43	1,380
2007-2016 Average		9,331	38,261	29,496	44,603	143,883	139	52	2,039
2017 as % of Average		41%	37%	46%	110%	123%	88%	83%	68%

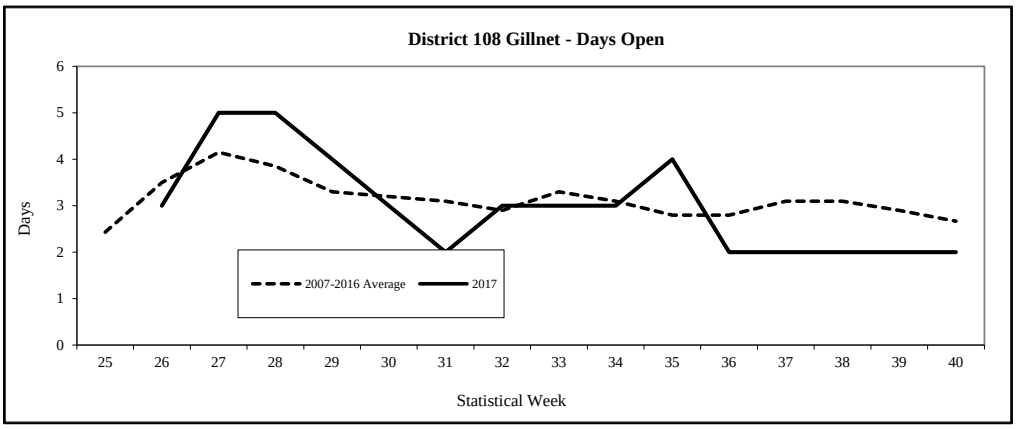


Figure 24.–Days open by week in the District 108 drift gillnet fishery, 2017.

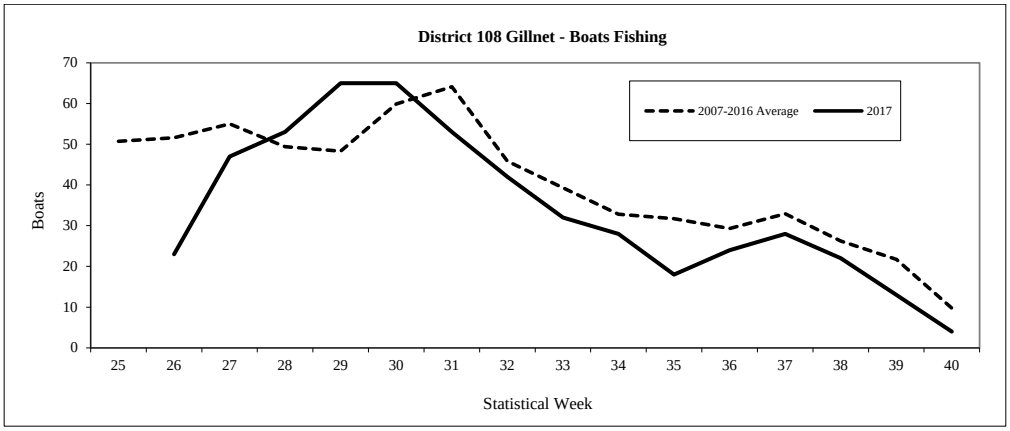


Figure 25.–Number of boats fishing by week in the District 108 drift gillnet fishery, 2017.

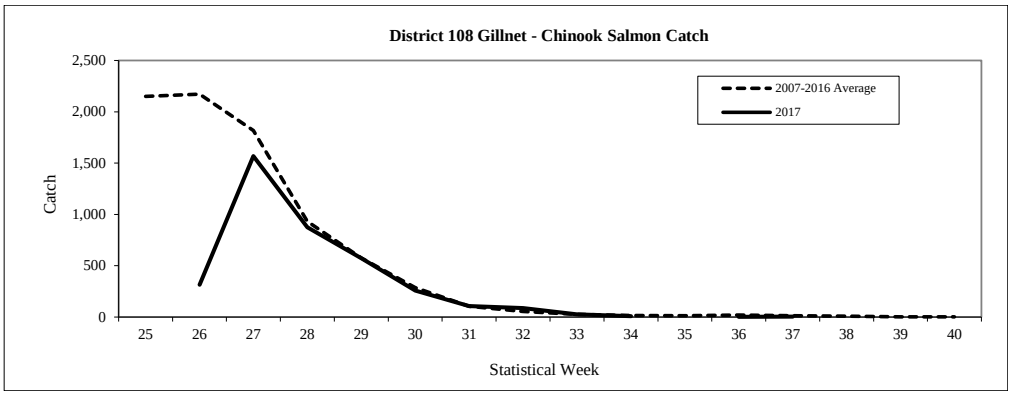


Figure 26.–Chinook salmon harvest by week in the District 108 drift gillnet fishery, 2017.

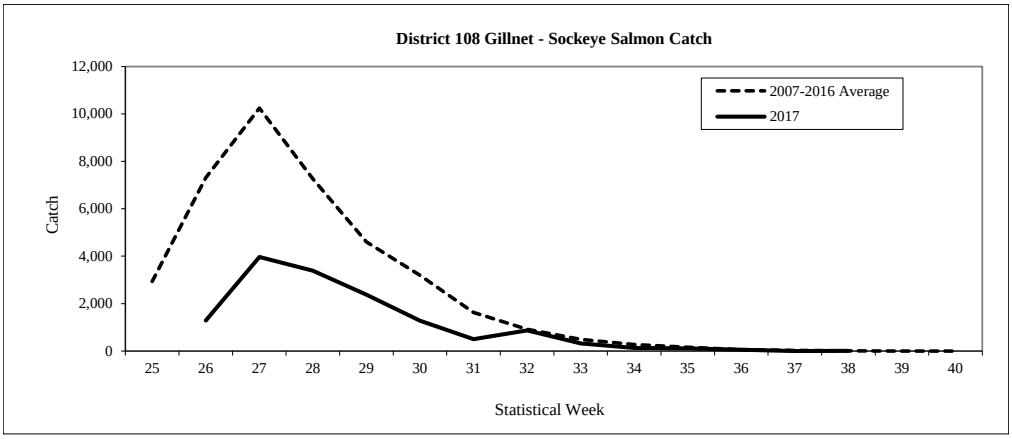


Figure 27.–Sockeye salmon harvest by week in the District 108 drift gillnet fishery, 2017.

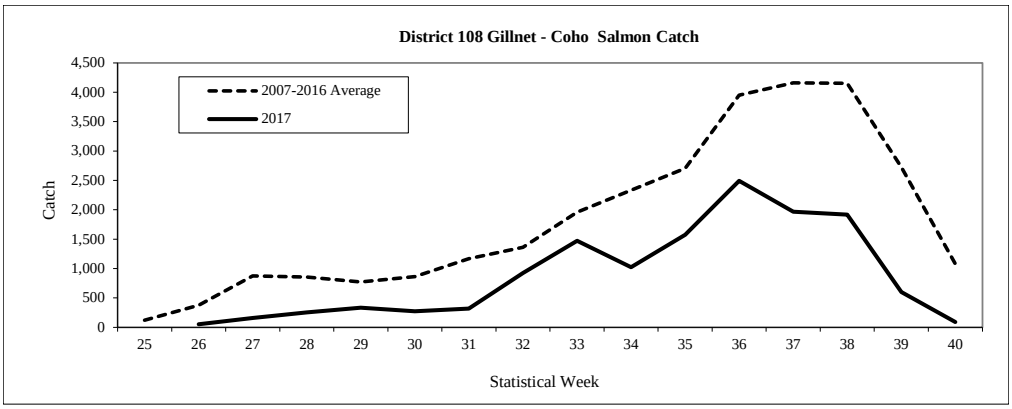


Figure 28.–Coho salmon harvest by week in the District 108 drift gillnet fishery, 2017.

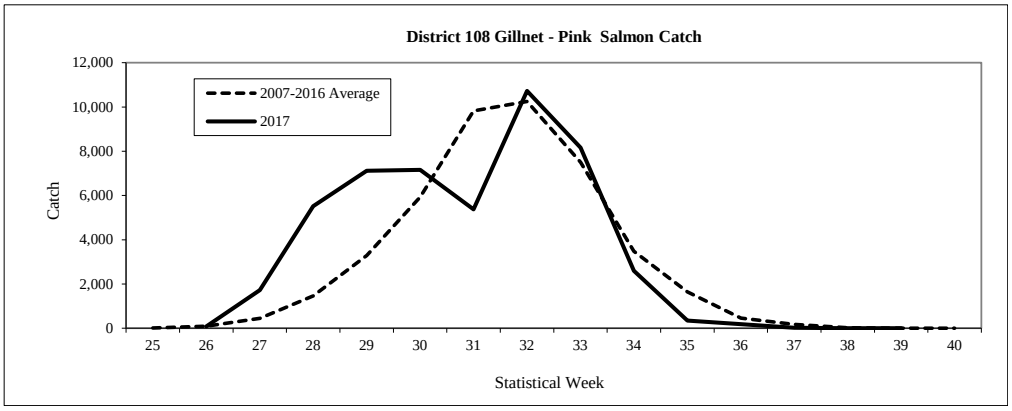


Figure 29.–Pink salmon harvest by week in the District 108 drift gillnet fishery, 2017.

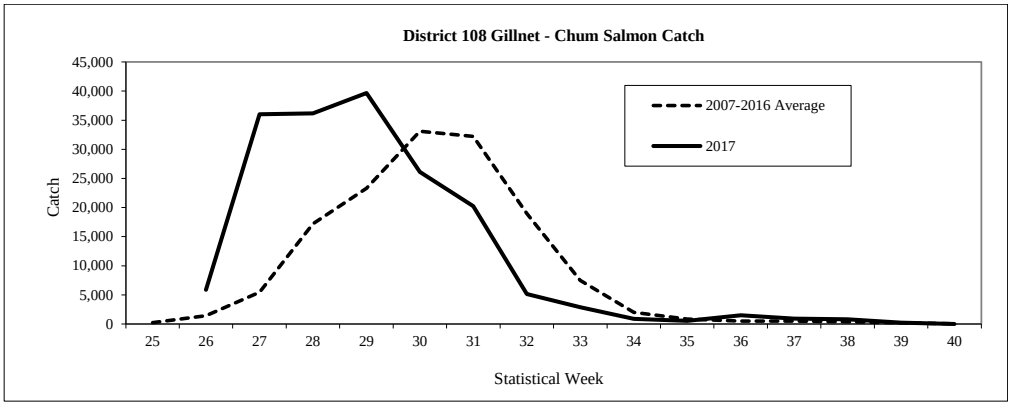


Figure 30.–Chum salmon harvest by week in the District 108 drift gillnet fishery, 2017.

Taku River Area Fisheries

The traditional drift gillnet fishery in District 111 targets salmon stocks bound for the trans-boundary Taku River. This fishery is managed for Chinook salmon from week 18 to week 24 when there are sufficient fish surplus to escapement to provide for a fishery. From week 25 to week 33 the fishery is managed for Taku River sockeye salmon, and from week 34 to week 42

for Taku River coho salmon. Also harvested in this fishery are salmon bound for Stephens Passage and Port Snettisham streams as well as enhanced Chinook, sockeye, coho and chum salmon from Douglas Island Pink and Chum, Inc. (DIPAC) hatchery releases. The traditional fishery does not include harvests from the Speel Arm Special Harvest Area (SHA) inside Port Snettisham.

The escapement goal range for Taku River large Chinook salmon is 19,000 to 36,000 fish with a point goal of 25,500 fish. In years of high abundance, directed Chinook salmon fisheries can be implemented to harvest runs in excess of escapement needs. The 2017 preseason terminal run forecast for the Taku River of 13,300 large Chinook salmon did not allow for any directed Chinook salmon fisheries in District 111 and significant restrictions in time, area, and gear were implemented in the first couple directed sockeye salmon openings (weeks 25 and 26) to minimize Chinook salmon harvest.

The spawning objective range for Taku River sockeye salmon is 71,000 to 80,000 fish, with a point goal of 75,000 fish. The 2017 Taku River sockeye salmon forecast was for an above average 198,000 wild fish, based on the average of Canadian stock-recruit and sibling forecasts. DIPAC forecast 236,000 enhanced sockeye salmon returning through District 111 waters to Port Snettisham.

An escapement goal range of 50,000 to 90,000 Taku River coho salmon with a point goal of 70,000 fish was adopted in early 2015. The U.S. management intent in 2017 was to pass a minimum of 75,000 coho salmon above the border, providing for escapement and a 5,000 fish Canadian assessment fishery. The preseason forecast was for an above average inriver run of 117,000 coho salmon in the Taku River, and DIPAC forecast a return of 50,000 enhanced coho salmon from releases in Gastineau Channel. For 2017, DIPAC forecast returns totaling 775,000 enhanced chum salmon to Gastineau Channel and Limestone Inlet, which was below the recent average.

The traditional drift gillnet fishery in District 111 began on Sunday, June 18, 2017 (week 25). The initial drift gillnet opening of the season in District 111 was for two days, with a significant area restriction intended to minimize harvest of Taku River Chinook salmon abundance. Effort for the opening was 18 boats, which was well below the ten-year average of 34 boats. The sockeye salmon harvest was approximately half of the recent ten-year average, but the chum salmon harvest of 4,511 fish was above the recent ten-year average (Figures 34 and 37). A total of 239 Chinook salmon were harvested, which was well below average for the week (Figure 33).

From late June through early August (weeks 26–31) effort in the District 111 drift gillnet fishery was generally above average, with a peak of 136 boats fishing in week 28 (Figure 32). Harvests of sockeye salmon were below average through mid-July, but then improved to above average in late July and early August, and after a two week lull remained above average through week 37 (Figure 34). Weekly chum salmon catches were well above average and approximately 874,000 fish were harvested from late June to mid-August (Figure 37). The vast majority of the summer-run chum salmon harvest in District 111 consists of DIPAC hatchery fish returning to release sites in Gastineau Channel and Limestone Inlet. Chinook salmon harvests generally were below average through the tail end of the run and few fish were caught after mid-July (Figure 33). Pink salmon harvests were well above average through early August (Figure 36).

From late August through late September (weeks 33–38), overall effort in the fishery was near or below average in most weeks and the fishery was open for fewer days of fishing weekly as the season progressed (Figure 31 and 32). Harvests of coho salmon were well below average from mid-August to late September (Figure 35). Pink salmon harvests were near average during August (Figure 36). Chum salmon harvests were also near the recent ten-year average from week 32 through 38 (Figure 37).

A number of Chinook salmon stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of mature wild fish is believed to be the Taku River. Non-retention of Chinook salmon in District 111, 115, and parts of District 112, from April 15 through June 14, resulted in minimal harvest of wild fish in the sport fishery. The final, GSI-based District 111 harvest estimates of Taku River large Chinook salmon during the accounting period was 143 fish in the drift gillnet fishery, 34 in the sport fishery, and an estimated 15 in the personal use fishery, for a total of 192 fish. Harvests of Taku River large Chinook salmon in these fisheries from week 29 onwards were minimal and resulted in a total harvest well below the U.S. base level catch of 3,500 fish. The preliminary escapement estimate of Taku River large Chinook salmon is 7,000 fish, which was well below the escapement goal range.

The 2017 traditional District 111 sockeye salmon harvest of 113,614 fish was 110% of the recent ten-year average. Peak catches of sockeye salmon occurred in weeks 30 and 31 (late July–early August; Figure 34). The Speel Arm SHA was not opened this season due to low escapement numbers of Speel Lake sockeye salmon. The lower bound of the Speel Lake sustainable escapement goal range of 4,000 to 9,000 fish was not reached with 3,435 fish counted through the weir through September 20. DIPAC sockeye salmon returning to the Snettisham Hatchery contributed a minimum of 36,000 fish to the traditional District 111 harvest. The preliminary escapement estimate of Taku River sockeye salmon is 108,000 fish, which was above the escapement goal range.

The 2017 traditional District 111 coho salmon harvest of 15,988 fish was 43% of the recent ten-year average (Figure 35). Approximately 67% of the coho salmon were harvested in Taku Inlet, which was below the ten-year average of 81%, and 33% were harvested from Stephens Passage and Port Snettisham. Coho salmon stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries. This was the third year of full production for DIPAC's revitalized enhanced coho salmon program. DIPAC enhanced coho salmon first appeared in the District 111 harvest in week 34, but comprised minimal proportions of the harvest each remaining week of the fishery. DIPAC enhanced coho salmon contributed 4% of the 2017 District 111 traditional drift gillnet harvest. The final escapement estimate of Taku River coho salmon is 57,900 fish, which was near the lower end of the escapement goal range of 50,000 to 90,000 fish.

The 2017 District 111 traditional pink salmon harvest of 230,195 fish was 165% of the ten-year average (Figure 36). The 2017 pink salmon escapement to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island is used as an index of escapement. The 2017 Canyon Island pink salmon fish wheel catch of 18,520 fish (not including new 3rd fish wheel catch) was 135% of the 1997-2015 odd-year average.

The 2017 District 111 traditional fishery chum salmon harvest of 885,661 fish was 149% of the recent ten-year average, and was comprised almost entirely of summer run fish (Figure 37). This was the second highest chum salmon harvest on record in District 111. The summer chum salmon run continues through mid-August (week 33) and is comprised mostly of domestic hatchery fish and small numbers of wild stocks. Chum salmon returning to DIPAC release sites in Gastineau Channel and Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 53% of the District 111 chum harvest was taken in Taku Inlet, and 47% in Stephens Passage. The harvest of 4,467 fall-run chum salmon (i.e. chum salmon caught after week 33) was 125% of the recent ten-year average. Most of these fall-run chum salmon are probably wild fish of Taku and Whiting River origin. Chum salmon escapement numbers to the Taku River are unknown; however, the numbers of fall chum passing through the fish wheels at Canyon Island is used as an index of escapement. The Canyon Island fish wheel project ceased operations on September 30, 2017, and the index of 236 chum salmon (not including new 3rd fish wheel catch) was very close to the recent 10-year average.

Table 8.–Weekly salmon harvest in the Alaskan District 111 traditional commercial drift gillnet fishery, 2017[a].

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	239	1,078	3	3	4,511	18	2	36
26	25-Jun	187	2,055	6	204	43,673	33	3	96
27	2-Jul	240	2,898	122	7,046	191,706	80	4	320
28	9-Jul	111	6,229	162	32,234	255,059	136	4	544
29	16-Jul	98	16,439	287	80,614	184,938	120	4	480
30	23-Jul	84	24,888	1,275	35,257	124,068	126	4	504
31	30-Jul	94	25,464	1,932	30,607	53,693	120	4	480
32	6-Aug	17	10,617	2,831	19,674	16,438	96	3	288
33	14-Aug	2	7,800	1,182	16,322	7,108	61	4	244
34	20-Aug	3	9,391	1,910	7,406	2,854	56	3	168
35	27-Aug	0	5,436	3,007	780	953	43	3	129
36	3-Sep	2	1,049	1,901	47	480	27	2	54
37	10-Sep	3	249	711	1	76	15	2	30
38	17-Sep	0	21	659	0	104	8	1	8
Total		1,080	113,614	15,988	230,195	885,661	201	43	3,381
2007–2016 Average		1,471	103,046	37,233	139,622	594,462	188	53	2,959
2017 as % of Average		73%	110%	43%	165%	149%	107%	81%	114%

[a] The 2017 District 111 drift gillnet harvest and effort, as well as the 2007-2016 averages, are for the directed sockeye and coho salmon portions of the fishery only. There was no directed fishery for Chinook salmon in District 111 in 2017 due to a low Taku River preseason abundance forecast.

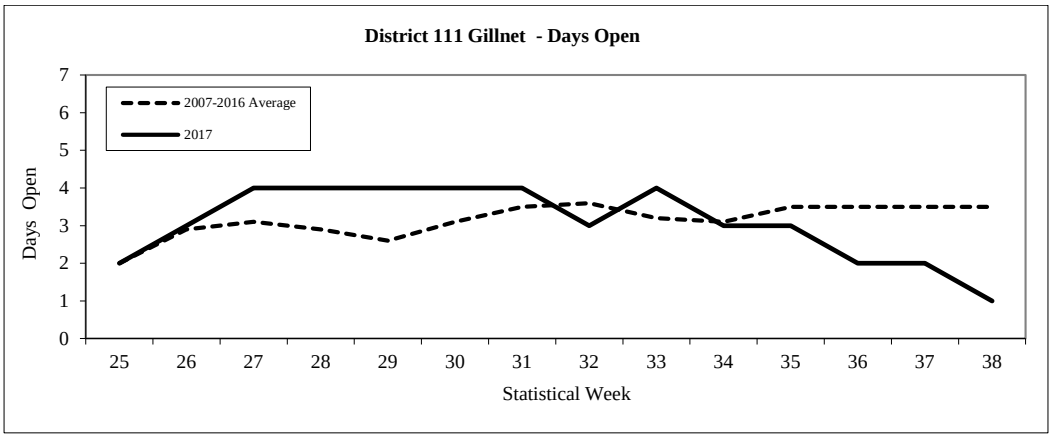


Figure 31.–Days open by week in the District 111 drift gillnet fishery, 2017.

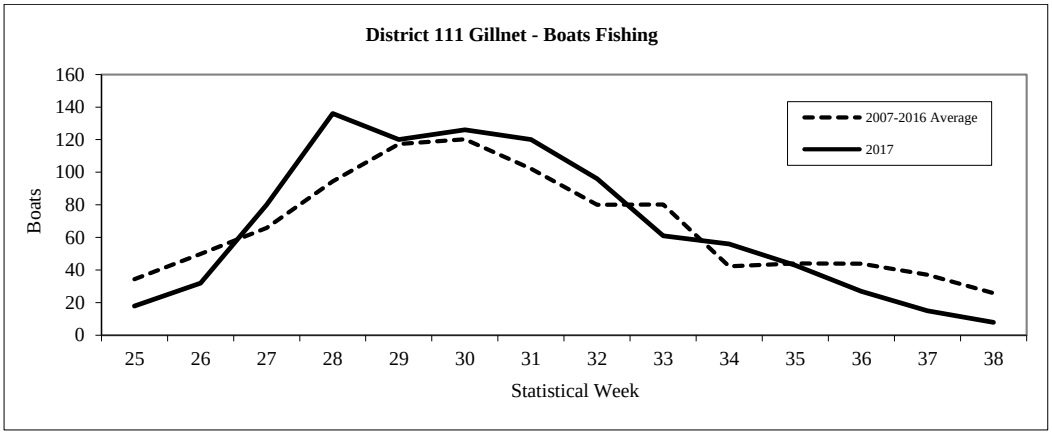


Figure 32.–Number of boats fishing by week in the District 111 drift gillnet fishery, 2017.

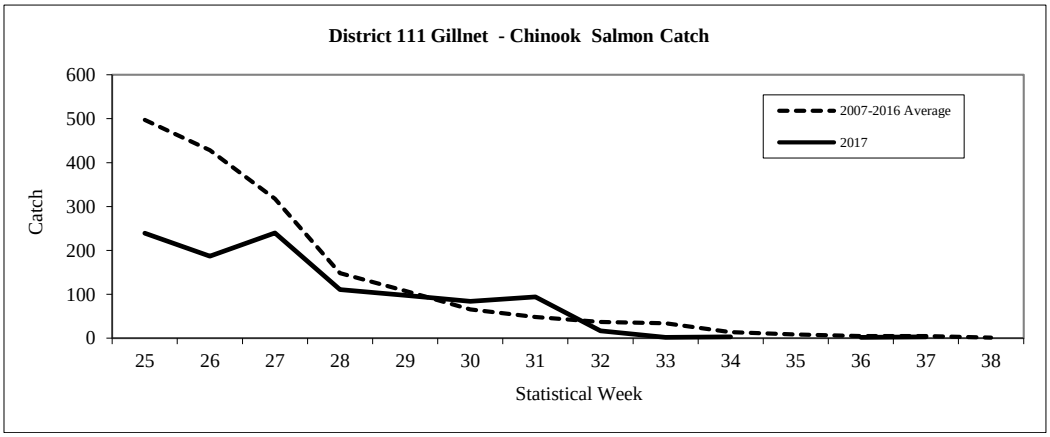


Figure 33.–Chinook salmon harvest by week in the District 111 drift gillnet fishery, 2017.

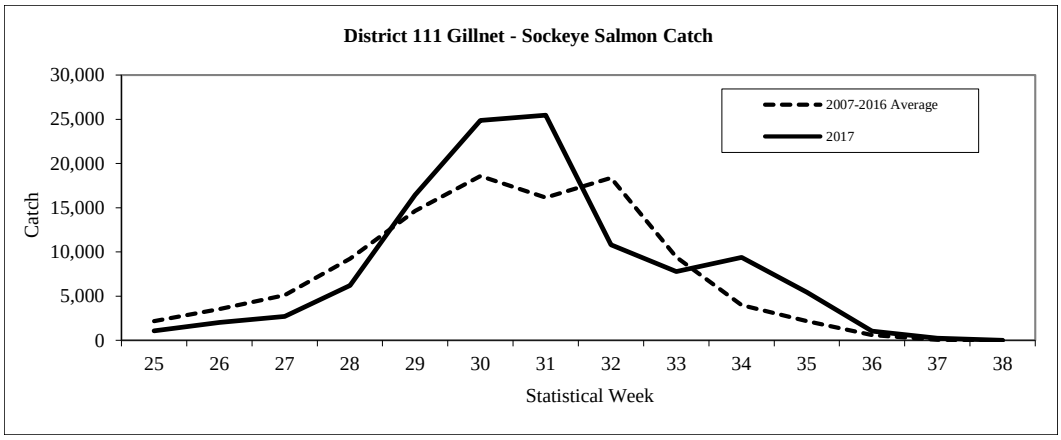


Figure 34.–Sockeye salmon harvest by week in the District 111 drift gillnet fishery, 2017.

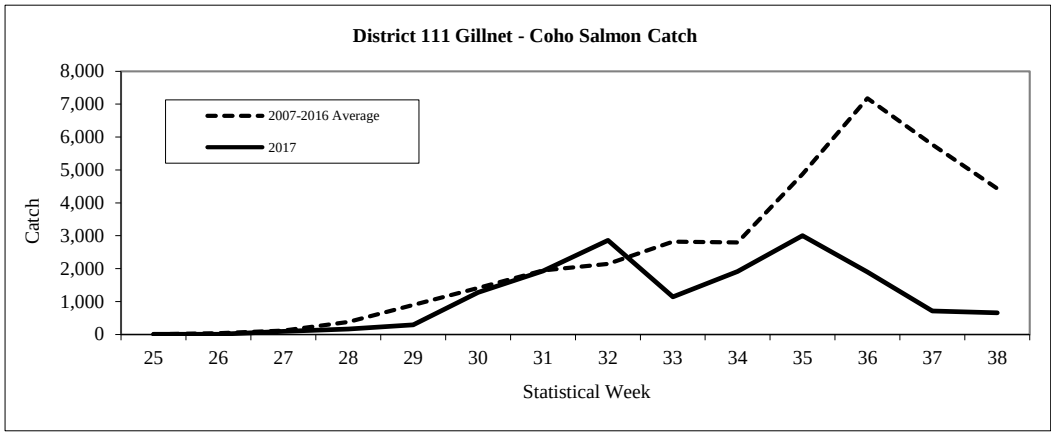


Figure 35.–Coho salmon harvest by week in the District 111 drift gillnet fishery, 2017.

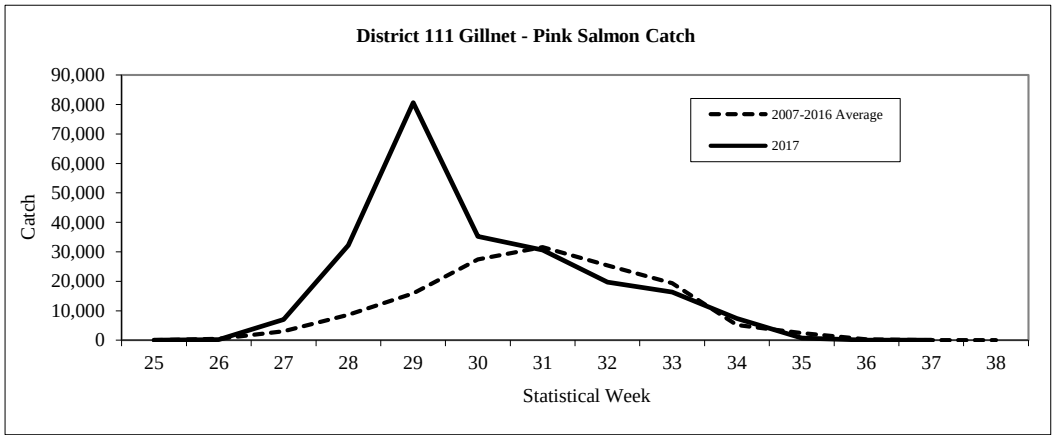


Figure 36.–Pink salmon harvest by week in the District 111 drift gillnet fishery, 2017.

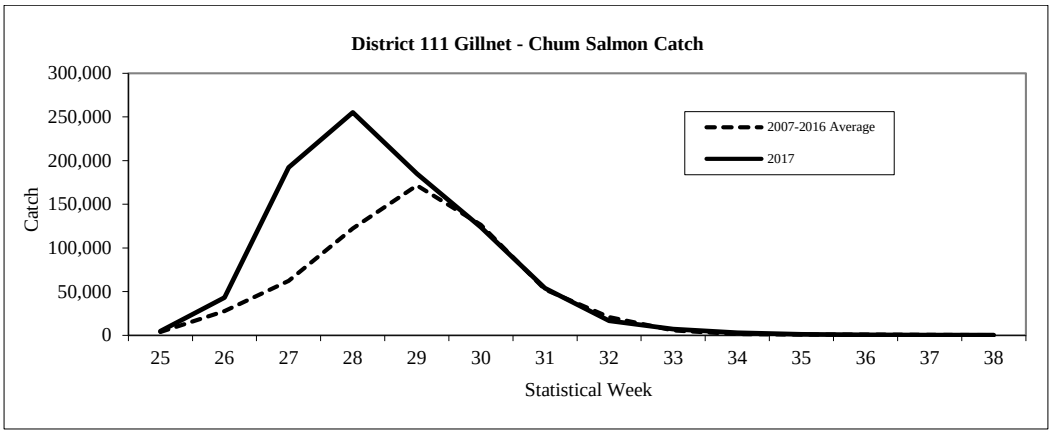


Figure 37.–Chum salmon harvest by week in the District 111 drift gillnet fishery, 2017.

Transboundary River Joint Enhancement

The transport of sockeye salmon fry from the Snettisham Hatchery facility back to the Canadian lakes was complete on June 20, 2017. Approximately 4.55 million fry were released in Tahltan, Tatsamenie, and Trapper lakes in Canada. The overall green egg to fry survival for brood year (BY) 2016 releases was 62% (Table 9). After transporting BY16 fry back to their respective lakes, all TBR modules, incubators, and short-term fry rearing containers were broken down, cleaned, and disinfected prior to setting up to receive green eggs from BY17 egg-takes.

Brood year 2017 egg-takes were initiated on September 1st at Tahltan Lake, September 14th at Tatsamenie Lake, and September 1st at Trapper Lake. An estimated total of 6.0 million green eggs were collected from the three donor lakes. Tahltan Lake egg-takes were completed on September 21st, and an estimated 3.7 million eggs in 9 egg lots were taken. Due to poor weather conditions, the receipt of three lots of Tahltan eggs was delayed by one day. Tatsamenie Lake egg-takes were completed on October 1st and 2.0 million eggs were collected in 4 lots. Trapper Lake egg-takes occurred on September 1st and September 9th, and an estimated 296,500 green eggs were collected. Adult sockeye salmon tissues were collected on the spawning grounds by contractors for DFO and shipped to the ADF&G Juneau Fish Pathology laboratory via Snettisham Hatchery as per treaty agreement.

Table 9.–Summary of numbers and survival rates of brood year 2016 sockeye salmon fry released May and June 2017. Fish were raised at Snettisham Hatchery as part of the Transboundary River Salmon Enhancement Project.

Brood stock	Release site	Number of trips	Survival rate to eyed stage	Survival rate to release	Number released
Tahltan	Tahltan Lk	7	75.7%	59.1%	3,136,400

Tatsamenie	Upper Tats Lk	2	71.1%	65.0%	1,018,700
Tatsamenie	Upper Tats Lk, Extended Rearing	2	90.8%	88.8%	183,000
Trapper	Trapper Lk	1	85.4%		211,800
	Average/Totals	12	75.5%	78.2%	4,549,900

During the 2017 season, the ADF&G Thermal Mark Lab processed 19,266 sockeye salmon otoliths collected by ADF&G and DFO staff as part of the U.S./Canada fry-planting evaluation program. These collections came from commercial and test fisheries in both U.S. and Canadian waters on the Taku and Stikine Rivers over a 13-week period. The laboratory provided estimates on hatchery contributions for 93 distinct sample collections. Estimates of the percentage of hatchery fish contributed to commercial fishery catches were provided to ADF&G and DFO fishery managers 24 to 48 hours after samples arrived at the lab.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty calls for the development and implementation of cooperative abundance-based management plans and programs for Alsek River Chinook and sockeye salmon. Escapement goals are in place for Chinook and sockeye salmon stocks spawning at the Klukshu River, a tributary that flows into the Tatshenshini River, approximately 80 km northeast of its junction with the Alsek River. The principal escapement-monitoring tool for Chinook, sockeye, and coho salmon stocks on the Alsek River is the Klukshu River weir, operated by Fisheries and Oceans Canada in cooperation with the Champagne-Aishihik First Nation since 1976. In 2013, Canadian and U.S. biologists adopted a new biological escapement goal range of 7,500 to 11,000 sockeye salmon through the Klukshu River weir. The current biological escapement goal range for Klukshu River Chinook salmon, adopted in February 2013, is a range of 800 to 1,200 fish.

The Department of Fish and Game manages the Alsek River commercial set gillnet fishery to achieve the agreed upon escapement goal ranges. Time and area openings are adjusted by monitoring fishery performance data and comparing it to historical CPUE. The duration of weekly fishing periods is based on fishery performance data (CPUE) and Klukshu River weir data. Historically, gillnets have often been restricted to a maximum mesh size of 6 inches through July 1 to minimize Chinook salmon harvest. The mesh restriction was lifted in 2013 and 2014, but was reintroduced in 2015 and implemented in 2016 and 2017.

Preseason expectations were for below average Chinook salmon runs and above average sockeye salmon runs in 2017. The overall Alsek drainage sockeye salmon run was expected to be

approximately 74,000 fish, which would have been above the recent ten-year average of 64,000 fish. The outlook for 2017 was based on a predicted run of 17,000 Klukshu River sockeye salmon, derived from the latest Klukshu River stock-recruitment data, a Klukshu River contribution rate of 23% to the total run (based on mark-recapture results; 2000-04), and run size estimates using GSI (2005-06, 2011). Principal contributing brood years for the 2017 return were 2012 and 2013. The Klukshu River escapement in 2012 was approximately 17,200 sockeye salmon, which was above the ten-year average of 14,200 fish. The sockeye salmon escapement in 2013 was 3,800, which was well below average. Based on the primary brood year escapements, the outlook for Klukshu River Chinook salmon in 2017 was for a return of 1,400 fish; slightly below the ten-year average of 1,500 fish.

The 2017 Alsek River set gillnet fishery opened Sunday June 4 (week 23). The total number of individual permits fishing during the season was 13, which was below the 2007–2016 average. The commercial fishery was opened for a total of 47 days which was just above the ten-year average of 45 days. The overall effort in boat-days was 61% of average due to low or no effort in many weeks late in the season (Table 10). Harvests of Chinook salmon through late June were below the recent ten-year average (Table 10). Harvests of sockeye salmon were below average in all weeks of the fishery and the total harvest of 4,883 fish was 32% of the 2007–2016 average of 15,457 fish (Table 10). There was little effort after early August. In the past several years there has been reduced fishing effort during coho salmon season due to economic struggles and lack of pilots to transport fish to town. In 2017, only 114 coho salmon were harvested (Table 10).

The Klukshu River weir count of 3,889 sockeye salmon was below the lower bound of the 7,500 to 11,000 fish escapement goal range. The count of 1,087 early run sockeye salmon (count through August 15) and the late run count of 2,802 were both below average. The 448 Chinook salmon counted through the Klukshu River weir fell below the established goal range of 800 to 1,200 Chinook salmon.

Table 10.–Weekly fishing effort and salmon harvest for Alsek River, 2017.

Statistical Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
23	4-Jun	45	269	0	0	0	11	1	11
24	11-Jun	29	284	0	0	0	11	1	11
25	18-Jun	35	635	0	0	0	11	1	11
26	25-Jun	15	927	0	0	0	10	1	10
27	2-Jul	2	734	0	0	0	9	1	9
28	9-Jul	1	309	0	0	0	9	1	9
29	16-Jul	0	337	0	0	0	10	1	10
30	23-Jul	0	389	0	0	0	6	2	12
31	30-Aug	0	866	0	0	0	5	2	10
32-33[a]	6-Aug	0	111	0	0	0	4	4	8
34-42[ab]	20-Aug	0	22	114	0	0	3	32	13
Total		127	4,883	114	0	0	13	47	114
2007-2016 Avg.		438	15,457	1,098	0	6	18	45	187
2017 as % of Avg.		29%	32%	10%		0%	72%	104%	61%

[a] Includes weeks with fewer than three permits, confidential information so data combined in catch table.

[b] Weeks 35, 38-42 opened to fishing but not fished.

SOUTHEAST ALASKA CHINOOK SALMON FISHERY

All Gear Harvest

The SEAK Chinook salmon fishery is managed to achieve the annual all-gear PST allowable catch associated with the preseason abundance index, which is generated by the PSC Chinook model each spring. The 2017 SEAK Chinook salmon management programs were configured around an abundance index (AI) of 1.27 for the 2017 fishing season. This equates to an all-gear PST allowable harvest limit of 209,700 Treaty Chinook salmon. This was the ninth year that the Annex IV, Chapter 3 provisions of the 2009 PST Agreement were implemented. Therefore, the harvest limit for SEAK reflects a 15% reduction in allowable catch (AC) from that allowed under the 1999 PST Agreement.

The preliminary total Chinook salmon harvest by all SEAK commercial fisheries was 154,640 fish, and the preliminary sport fish harvest was 56,368, for an all-gear harvest of 211,008 (Table 11). The preliminary all-gear PST harvest was 178,348 fish (Table 12).

Table 11.–Preliminary estimated all-gear Chinook salmon harvests in 2017**.**

Gear	Total Harvest	AK Hatchery Harvest	Wild Terminal Exclusion	Alaska Hatchery Addon	Treaty Harvest	Harvest Limit*	O/U*	% O/U*
Troll	129,596	8,613	0	6,179	123,417			
Sport	56,368	11,827	0	8,898	47,470			
Drift Gillnet	13,768	10,909	0	9,605	4,162			
Purse Seine	10,909	8,024	0	7,977	2,932			
Set Gillnet	367	0	0	0	367			
Total Net	25,044	18,933	0	17,582	7,462			
Total All Gear	***211,008***	***33,873***	***0***	***32,659***	***178,348***			

Note: Annette Island and terminal area harvests are included.

**Not available until 2018 model calibration is complete and postseason AI is generated.*

Table 12.–Chinook all-gear harvests in Southeast Alaska and deviation from the harvest ceiling limit (1987-1998) and postseason allowable catch (1999-2017). Harvests are in thousands.

Year	Total Harvest	Add-on and Exclusion Harvest	Target Treaty Harvest	Treaty Harvest	Deviation Number	Deviation Percent
1987	282.4	17.1	263.0	265.3	2.3	0.9%
1988	279.3	22.5	263.0	256.8	-6.2	-2.4%
1989	291.0	21.5	263.0	269.5	6.5	2.5%
1990	366.9	45.9	302.0	321.0	19.0	6.3%
1991	359.5	61.5	273.0	298.0	25.0	9.2%
1992	258.8	36.8	227.4	222.0	-5.4	-2.4%
1993	304.1	32.9	263.0	271.2	8.2	3.1%
1994	264.4	29.2	240.0	235.2	-4.8	-2.0%
1995	235.7	58.8		176.9		
1996	236.3	72.6		155.0		
1997	343.0	46.5		286.7		
1998	270.6	25.0	260.0	243.2	-16.8	-6.5%
1999	251.0	47.7	184.2	198.8	14.6	7.9%
2000	263.3	74.3	178.5	186.5	8.0	4.5%
2001	265.7	77.3	250.3	186.9	-63.4	-25.3%

2002	426.5	68.2	371.9	357.1	-14.8	-4.0%
2003	439.4	57.2	439.6	380.2	-59.4	-13.5%
2004	499.3	76.0	418.3	417.0	-1.3	-0.3%
2005	493.2	64.4	387.4	388.6	1.2	0.3%
2006	435.5	48.4	354.5	360.1	5.6	1.6%
2007	404.7	68.4	259.2	328.3	69.1	26.6%
2008	244.3	66.1	152.9	172.9	20.0	13.1%
2009	293.6	62.0	176.0	228.0	52.0	29.5%
2010	284.8	53.6	215.8	230.6	14.8	6.9%
2011	357.4	65.5	283.3	291.2	7.9	2.8%
2012	295.3	51.4	205.1	242.8	37.7	18.4%
2013	257.3	65.6	176.0	191.4	15.4	8.7%
2014	492.5	56.6	378.6	435.2	56.6	14.9%
2015	403.3	68.1	337.5	335.0	-2.5	-0.7%
2016	387.0	35.4	355.6	350.9	-4.7	-1.3%
2017[1]	211.0	32.7		178.3		

[1] Preliminary.

Troll Fishery

The accounting of treaty Chinook salmon harvested by trollers begins with the winter fishery and ends with the summer fishery. The winter troll fishery is managed for a guideline harvest level (GHL) of 45,000 non-Alaska hatchery-produced Chinook salmon, with a guideline harvest range of 43,000−47,000 non-Alaska hatchery-produced fish, plus the number of Alaska hatchery-produced Chinook salmon harvested during the winter fishery. The 2016–2017 winter troll fishery was open from October 11, 2016 through April 30, 2017 and harvested a total of 43,839 Chinook salmon. Of these, 2,908 (7%) were of Alaska hatchery origin, of which 2,023 counted toward the Alaska hatchery add-on, resulting in a treaty catch of 41,816 (Table 13).

The spring troll fisheries target Alaskan hatchery-produced Chinook salmon and are conducted along migration routes or close to hatchery release sites. Terminal area fisheries, which begin during the spring, occur directly in front of hatcheries or at remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of PST Chinook salmon is limited according to the percentage of the Alaskan hatchery fish taken in the fishery. Non-Alaska hatchery fish are counted towards the annual PST quota of Chinook salmon, while most of the Alaska hatchery fish are not.

In 2017, spring troll fisheries were conducted between May 1–28, and from June 15–30. With SEAK/TBR wild stocks in a period of reduced productivity and Alaska hatchery returns well below recent and long term averages, all spring troll fisheries closed from May 29 to June 14. A total of 34 spring areas and seven terminal area fisheries opened in 2017. The combined harvest for spring and terminal troll fisheries was 18,232 Chinook salmon, of which 3,750 (21%) were of Alaska hatchery origin and 2,795 counted toward the Alaska hatchery add-on.

The 2017 summer troll fishery included one Chinook salmon retention period, from July 1–4. Notwithstanding the remaining fish on the PST troll harvest limit, no second Chinook salmon retention period was conducted. This seasonal closure was implemented to protect the SEAK/TBR wild stocks that contribute to the late summer fishery that are in a period of low productivity. In addition to the first traditional summer retention period, an experimental mark-selective fishery was conducted from July 5–21 during a coho-directed fishery (2,680 Chinook retained). A total of 67,061 Chinook salmon were harvested in summer fisheries, of which 1,956 (3%) were of Alaskan hatchery origin and 1,361 counted toward the Alaska hatchery add-on. The resulting PST catch was 65,700 fish.

The total harvest for all troll fisheries in the 2017 accounting year was 129,596 Chinook salmon, of which 123,417 were PST harvest.

Table 13.–Preliminary 2017 troll fishery Chinook salmon harvest by season.

Gear/Fishery	Total Harvest	Alaska Hatchery Harvest	Alaska Hatchery Add-on	Terminal Exclusion Harvest	Total Term. Exclusion/ Alaska Hatchery Add-on	Treaty Harvest
Winter Troll	43,839	2,908	2,023	0	2,023	41,816
Spring Troll[a]	18,259	3,750	2,795	0	2,795	15,464
Summer Troll						
First Period[b]	64,382	1,812	1,260	0	1,260	63,122
Second Period	0	0	0	0	0	0
MSF[c]	2,680	144	100	0	100	2,580
Total Summer	67,062	1,956	1,361	0	1,361	65,701
Total Traditional Troll	129,160	8,613	6,179	0	6,179	122,981
Annette Is. Troll	436	0	0	0	0	436
Total Troll Harvest	**129,596**	**8,613**	**6,179**	**0**	**6,179**	**123,417**

[a] Spring troll harvest includes all terminal and Wild Terminal Exclusion harvests for year.

[b] Total summer harvest includes confiscated harvest for year.

[c] The mark-selective fishery occurred during the first Chinook Non-Retention coho-directed fishery.

Net Fisheries

A total of 13,768 Chinook salmon were harvested in the drift gillnet fisheries in 2017, of which 10,909 (79%) were of Alaska hatchery origin and 9,605 counted toward the Alaska hatchery add-on, resulting in a PST harvest of 4,162 fish (Table 11). A total of 10,909 Chinook salmon were harvested in the purse seine fisheries, of which 8,024 (74%) were of Alaska hatchery origin and 7,977 counted toward the Alaska hatchery add-on, resulting in a PST harvest of 2,932 fish. A total of 367 Chinook salmon were harvested in the set gillnet fisheries, none of which were of Alaska hatchery origin, resulting in a PST harvest of 367 fish (Table 11).

With the exception of directed gillnet harvests of Chinook salmon in SEAK terminal area regulatory Districts 108 and 111, as provided in the Transboundary River agreement (Chapter 1), harvests of Chinook salmon in the net fisheries are primarily incidental to the harvest of other species and only constituted a small fraction (<1.0%) of the total net harvest of all species.

Recreational Fisheries

The Southeast Alaska king salmon sport fishery is managed under provisions of the Southeast Alaska King Salmon Management Plan (5 AAC 47.055). This plan prescribes management measures based upon the preseason abundance index determined by the Chinook Technical Committee of the Pacific Salmon Commission. The preseason abundance index generated for the SEAK AABM fishery in 2017 was 1.27, resulting in a preseason sport allocation of 38,720 treaty Chinook salmon under the harvest management plan adopted by Alaska Board of Fisheries. Based on this preseason AI and the SEAK King Salmon Management Plan, a resident sport fish angler was allowed to use two rods from October through March, and the bag and possession limit was two king salmon 28 inches or greater in length. The nonresident annual harvest limit was three king salmon 28 inches or greater in length, with a daily bag and possession limit of one king salmon 28 inches or greater in length. The 2017 recreational fishery had an estimated preliminary total harvest of 56,368 Chinook salmon, of which 47,470 counted as treaty harvest. The final total and treaty harvest in the sport fishery for 2017 will be available in late fall of 2017.

SOUTHEAST ALASKA COHO SALMON FISHERIES

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for inseason conservation and information sharing for northern boundary coho salmon. In 2017, troll CPUE in Area 6 in the early weeks of the fishery averaged 81 coho/day, which was well above the highest boundary area conservation trigger of 22 coho/day. The mid-July projection of region-wide total commercial harvest of 2.64 million was greater than the 1.1 million trigger for an early region-wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The 2017 region-wide summer troll coho fishery began by regulation on June 1 and continued through the normal September 20. Selected coastal fishing areas along and near the outer coast were extended to trolling through September 30. The 2017 all-gear catch of coho salmon totaled 3.13 million fish, of which 2.76 million (88%) were taken in commercial fisheries (Table 14). The troll catch of 2.15 million fish was 40% above the 10-year average of 1.54 million fish and accounted for 78% of the commercial catch. The record troll proportion in the commercial catch, surpassing the previous record of 74% in 2006, resulted from a combination of substantially weaker returns in inside areas compared with the outer coast, minimal utilization of coho salmon by the Yakutat set gillnet fishery in more remote systems outside of the Situk-Arhklin Lagoon, and limited purse seine harvest as a consequence of weak pink salmon returns in much of southern Southeast. Power troll wild coho CPUEs were above the 20-year average from early-July through mid-August and below average for the rest of the season. The overall wild stock abundance (wild troll catch divided by an index of the troll exploitation rate) was estimated at 4.72 million fish, and was 18% above the 20-year average. The purse seine harvest of 276,600 fish was 11% below the 10-year average while the drift gillnet harvest of 189,600 fish was 50% below the 10-year average. The set gillnet harvest of 144,800 fish in the Yakutat area was 5% above the 10-year average, with 97% of the catch taken in the Situk-Ahrnklin Lagoon. A very

preliminary estimate of the Southeast Alaska sport catch (373,600) is 47% above the 10-year average (254,300 fish).

Wild production accounted for 2.31 million fish (84%) in the commercial catch compared with a recent 10-year average of 1.80 million fish (77% wild). The hatchery percentage of the commercial catch (16.1%) was the lowest since 2006. Of the estimated hatchery contribution of 448,700 fish, over 99% originated from facilities in Southeast Alaska, with facilities on or near the outer coast producing most of the return while inside hatchery returns generally suffered from poor marine survival.

Escapement counts and estimates were within or above goal in most cases. The total escapement of 1,266 coho salmon to Hugh Smith Lake was within the biological escapement goal (500-1,600 spawners) for the third consecutive year, after consistently exceeding the goal during the prior seven years. The estimated total run size of 2,318 adults was 44% below the long-term (1982–2016) average of 4,106 adults. Escapements were within respective goal ranges for five northern Southeast inside stocks (Auke Creek, Berners River, Chilkat River, Taku River, Montana Creek) while falling under goal for one stream (Peterson Creek). The combined peak count of 11,557 coho salmon in the 14 surveyed streams in the Ketchikan area was well-above the 1987–2016 average of 8,830 spawners, and the goal of 4,250–8,500 spawners. The combined peak count of spawners in five streams in the Sitka area (1,280 spawners) was below average (1,377 spawners), but above the escapement goal of 400–800 spawners.

Marine survival was well-below average (6.6% versus 12.6%) for the Hugh Smith Lake population southeast of Ketchikan, and was near a record low for the second consecutive year for northern inside systems, where smolt–adult survival averaged was 5.0% for Auke Creek (1980–2016 average = 18.7%) and 4.9% for the Berners River (1990–2016 average = 15.5%). Smolt production appeared to be high in wetland habitats, apparently in response to abundant precipitation in summer and fall of 2015 and a mild winter-spring period in 2015–2016. This helped offset poor marine survival in some mainland river systems. However, coho salmon returns appeared proportionately much stronger in outer coastal systems from southern Southeast to Yakutat, compared with inside area streams for the second consecutive year.

Preliminary all-fishery exploitation rate estimates were low to moderate for wild indicator stocks, at 41% for Auke Creek, 46% for Berners River, and 45% for Hugh Smith Lake. The all-fishery exploitation rate for the Hugh Smith Lake stock was well below the long-term average of 62%. The Alaska troll fishery exploitation rate on the Hugh Smith Lake stock (29%) was below the 25-year (1992–2016) average of 32%. Alaska troll fishery exploitation rates on northern inside stocks were estimated at 34% for Auke Creek and 28% for the Berners River compared with 25-year averages of 26% and 27%, respectively.

Table 14.–Coho salmon harvest in Southeast Alaska in 2017 by gear type (preliminary).

Gear Type	Harvest
Troll	2,149,100
Purse Seine	276,600
Drift Gillnet	189,600
Set Gillnet	140,800
Sport (marine and freshwater)	373,600
Total	3,129,700

II. PRELIMINARY 2017 CHINOOK AND COHO SALMON FISHERIES IN WASHINGTON AND OREGON

INTRODUCTION

This report describes the conduct of United States (U.S.) fisheries of interest to the Pacific Salmon Commission (PSC) that occurred during 2017 in the area north of Cape Falcon, Oregon and south of the U.S./Canada border. These fisheries were conducted under pre-season management plans that were consistent with Annex IV of the Pacific Salmon Treaty (PST 2008) including obligations defined within Chapter 3 for Chinook individual stock based management regimes (ISBM) and Chapter 5 for Southern Coho Management.

An overview of the Chinook (*Oncorhynchus tshawytscha*) and Coho (*Oncorhynchus kisutch*) salmon conservation challenges facing managers during the 2017 pre-season planning process in this region is provided in the following section. The conduct of major fisheries is described, and estimates of landed catch, where available, are compared to pre-season catch limits or expectations for Chinook (Table 15) and Coho (Table 16). For perspective, landed catches for those fisheries since 2012 are also presented. Where available, preliminary estimates of the number of Chinook or Coho salmon released by anglers in 2017 mark-selective fisheries are also presented (Table 17). All estimates for the 2017 fisheries are preliminary and subject to change. Estimates of spawning escapements and abundance of Coho and Chinook stocks are not available at this time.

PRE-SEASON PLANNING

Pre-season planning for southern U.S. fisheries of interest to the PSC is a coordinated activity involving Tribal, State and Federal management entities, with the involvement of conservation and fishing interests. The Pacific Fishery Management Council (PFMC) conducted a series of public meetings to consider options for ocean fishery season structures while the Tribes and States conducted government-to-government and public, open meetings throughout the region to develop and analyze alternative season structures for fisheries in the inside waters of the Columbia River, coastal Washington and Puget Sound. Participants in these various planning sessions evaluated the biological and socio-economic consequences of the alternative season structures for the outside (ocean) and inside (marine and freshwater) fisheries (Figure 38) including the anticipated impacts on U.S. southern origin stocks in fisheries conducted under the PST in Canada and Southeast Alaska. Agreement was reached on season structures expected to achieve conservation goals, domestic fishery objectives and legal obligations, including the PST, assuming fisheries are conducted as planned and pre-season abundance estimates are accurate.

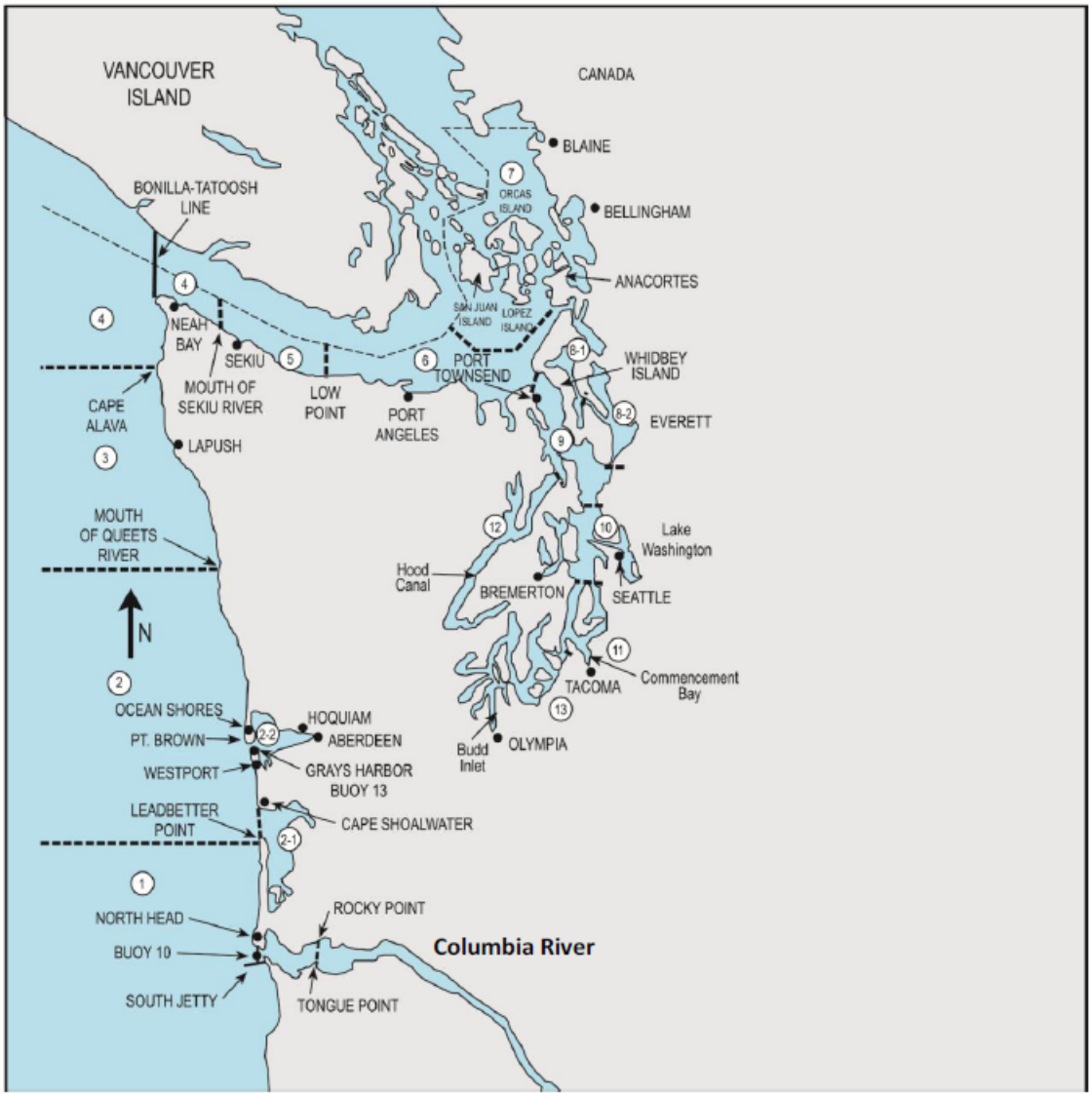


Figure 38. Map of Western Washington marine catch areas of the Washington coast (Areas 1 through 4) and Puget Sound (Areas 5 through 13) (WAC 220-22-030). Inside (Columbia River) fisheries reported in this document extend beyond the scope of this map.

Chinook Salmon Management

Under the 2008 Pacific Salmon Treaty Agreement, southern U.S. fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the non-ceiling index for aggregated Southern U.S. fisheries on Chinook stocks not achieving their management objectives to be no greater than 60% of the levels estimated for the 1979 – 1982 base period.

Conservation obligations associated with the U.S. Endangered Species Act (ESA) for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River have been more constraining to southern U.S. fisheries than PST obligations. Catch quotas for the 2017 U.S. ocean fisheries in the area north of Cape Falcon, Oregon, were defined by the

impact limits on ESA-listed lower Columbia River natural tule fall Chinook stocks, ESA-listed Puget Sound Chinook stocks, and the abundance of other healthy, harvestable Chinook salmon stocks contributing to fisheries in this area. Puget Sound fishing seasons were structured to provide fishing opportunity on healthy salmon species or stocks within the impact limits defined for ESA-listed Puget Sound Chinook.

Coho Salmon Management

During the pre-season fishery planning process of 2017, Canadian fishery managers informed the U.S. that the Interior Fraser management unit was again expected to be in the *low* categorical abundance status, and U.S. fisheries were constrained to ensure that the exploitation rate on this management unit did not exceed 10.0% as defined by the PST Southern Coho Management Plan. Of the U.S. natural spawning Coho management units (MUs) managed under the PST, the Skagit, Stillaguamish, and Queets Coho MUs were forecasted to be in *low* abundance status. The Strait of Juan de Fuca, Snohomish, and Grays Harbor natural Coho MUs were predicted to be in *moderate* status, while the Hood Canal, Quillayute, and Hoh MUs were forecasted to be in *abundant* status.

The impacts of planned Southern U.S. fisheries on natural Coho stocks, seasons, and catch limits were predicted using the Fisheries Regulation Assessment Model (FRAM). The total exploitation rate on the Interior Fraser Coho management unit was predicted to be 7.6% in Southern U.S. fisheries. Seasons and Coho quota levels for U.S. ocean fisheries were closed or severely constrained by the management objectives of Washington coastal and Puget Sound natural Coho and ESA-listed lower Columbia River natural Coho. Limits to fisheries in marine areas within northern Puget Sound and the Strait of Juan de Fuca were likewise constrained by management objectives reflecting very low forecasted returns for some Puget Sound natural Coho stocks.

NORTH OF CAPE FALCON OCEAN FISHERIES

Details regarding North of Cape Falcon ocean salmon fishing plans were reported in Preseason Report III, published by the Pacific Fishery Management Council in April 2017. https://www.pcouncil.org/salmon/stock-assessment-and-fishery-evaluation-safe-documents/preseason-reports/

Fisheries in this area are managed to meet conservation objectives for ESA-listed stocks, natural stocks and brood stock goals for hatchery stocks. Within these stock management objectives, ocean fishing seasons are defined that meet legal requirements of Tribal treaties and allocations between Non-Tribal troll and sport fisheries. Ocean fishery seasons are also constructed to ensure a balance of opportunity for harvest with the inside fisheries. Lower Columbia River hatchery Coho and Columbia River fall Chinook have historically been the major stocks contributing to catches of ocean fisheries in the North of Cape Falcon area.

Chinook and Coho salmon catch quotas were established for the 2017 ocean Tribal, Non-Tribal troll and sport fisheries. Ocean fishery quotas for Chinook salmon were defined by exploitation rate limits on several ESA-listed Puget Sound Chinook stocks as well as the total exploitation rate limit of 41% on ESA-listed lower Columbia River natural tule fall Chinook stocks in all

fisheries.

Non-Tribal Troll Fishery

Pre-season quota levels for the non-Tribal troll fisheries were 45,000 Chinook and 5,600 Coho with a clipped adipose fin, hereinafter referred to as marked. The preliminary estimate of non-Tribal harvest in the 2017 North of Falcon troll fishery is 35,500 Chinook (79% of the coast-wide quota) and 1,800 Coho (32% of the pre-season coast-wide non-Tribal troll quota; a transfer of 3,100 Coho from the troll to the sport fishery occurred in-season, resulting in a final troll Coho quota of 2,500). Trollers harvested 24,900 Chinook in the May 1 – June 30 fishery, and the remaining 10,600 Chinook were harvested in the summer all-species fishery between July 1 and September 19. All Coho were harvested during the summer all-species fishery.

Tribal Troll Fishery

The Tribal troll ocean fishery (also known as the Treaty troll fishery) quotas were defined by conservation concerns for ESA-listed Chinook and Coho stocks as well as very low forecasted returns of Washington coastal and Puget Sound Coho stocks. Specifically the Chinook quota was limited due to conservation concerns for the ESA-listed Lower Columbia River natural tule fall Chinook and Puget Sound ESA-listed Chinook. The Coho quota was based on concerns for Puget Sound Coho, Thompson River Coho, and ESA-listed lower Columbia River natural Coho.

The Tribal troll fishery was implemented in Ocean Areas 2, 3, 4 and 4B. The 2017 quotas were set at 40,000 Chinook and 12,500 Coho. The Chinook quota was split into two sub-quotas -- a 20,000 sub-quota for the May-June time period and a 20,000 sub-quota in the July-August-September timeframe during the all species troll fishery, which also incorporated the 12,500 Coho quota. The Chinook-directed fishery ran through all of May and closed on June 30, catching 3,285 of the 20,000 Chinook sub-quota, or 16.4%. The Tribal trollers made 116 landings during this fishery. The second half of the fishery opened on July 1 with the same Chinook sub-quota (20,000) as the first fishery. The second fishery sub-quota was subsequently updated to 36,720, due rolling over the remaining sub-quota from the first Chinook-directed fishery. The second fishery closed on September 15, taking 93.4% of the Chinook sub-quota. The total salmon harvest for the 2017 Tribal troll fishery was 24,385 Chinook (61%) and 13,215 Coho (106%). In addition, the fishery caught 184 Pink salmon (no quota was set). The Tribes made a total of 757 landings during the ocean Tribal troll season.

Ocean Sport Fisheries

Pre-season quotas for the Washington coastal sport fishery (Ocean Areas 1 through 4) were 45,000 Chinook and 42,000 marked Coho. Preliminary total catch estimates for the ocean sport fisheries north of Cape Falcon were 21,900 Chinook (49% of the coast-wide quota) and 42,300 Coho (1% over the pre-season coast-wide sport quota; a transfer of 3,100 Coho from the troll to the sport fishery occurred in-season, resulting in a final sport Coho quota of 45,100). A description of the season structure and catches by management area follows.

Columbia Ocean Area (including Oregon)

All-species salmon sport fishing opened in Ocean Area 1 (Columbia Ocean Area) on June 24 with a pre-season quota of 21,000 marked Coho and a guideline of 13,200 Chinook. Following in-season transfers from the non-Tribal troll fishery and from other ocean sport areas to modify the area Coho quota to 22,527, the fishery closed upon attainment of the Coho quota on August 22. The catch estimates for Area 1 were 7,500 Chinook (57% of the guideline) and 21,300 Coho (1% over the pre-season quota). The Chinook minimum size limit was 24 inches and the Coho minimum size limit was 16 inches with a sub-area closure in the Columbia Control Zone.

Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 1 Coho mark-selective sport fishery, June 24 – August 22, 2017.

Coho retained	Coho released	Total encounters	Mark %
21,300	17,900	39,200	55%

Westport, Washington

Ocean Area 2 (Westport, WA) opened for all-species salmon sport fishing on July 1 with a pre-season quota of 15,540 marked Coho and a guideline of 21,400 Chinook. Following in-season transfers from the non-Tribal troll fishery to modify the area Coho quota to 17,113, the fishery closed upon attainment of the Coho quota on August 22. The catch estimates for Area 2 were 6,600 Chinook (31% of the guideline) and 15,700 Coho (1% over the pre-season quota). The Chinook minimum size limit was 24 inches and the Coho minimum size limit was 16 inches with a sub-area closure in the Grays Harbor Control Zone beginning August 14.

Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 2 Coho non-retention sport fishery, July 1 – August 22, 2017.

Coho retained	Coho released	Total encounters	Mark %
15,700	15,900	31,600	52%

La Push, Washington

Ocean Area 3 (La Push, WA) opened for all-species salmon sport fishing on June 24 with a pre-season quota of 1,090 marked Coho and a guideline of 2,500 Chinook. Following in-season transfers from other ocean sport areas to modify the area Coho quota to 1,490, the fishery closed on its automatic closure date, September 4. The catch estimates for Area 3 were 500 Chinook (20% of the guideline) and 1,700 Coho (56% over the pre-season quota). The Chinook minimum size limit was 24 inches and the Coho minimum size limit was 16 inches.

Preliminary estimates of Coho encounters (retained and released) and mark rate in the Area 3 Coho non-retention sport fishery, June 24 – September 4, 2017.

Coho retained	Coho released	Total encounters	Mark %

1,700	2,200	3,900	46%

Neah Bay, Washington

Ocean Area 4 (Neah Bay, WA) opened for all-species salmon sport fishing on June 24 with a pre-season quota of 4,370 marked Coho and a guideline of 7,900 Chinook. Following in-season transfers to other ocean sport areas to modify the area Coho quota to 3,970, the fishery closed on its automatic closure date, September 4. The catch estimates for Area 4 were 7,300 Chinook (92% of the guideline) and 3,500 Coho (80% of the pre-season quota). The Chinook minimum size limit was 24 inches and the Coho minimum size limit was 16 inches.

Preliminary estimates of Coho encounters (retained and released), in the Area 4 Coho non-retention sport fishery, June 24 – September 4, 2017.			
Coho retained	Coho released	Total encounters	Mark %
3,500	6,400	9,900	54%

NORTH OF CAPE FALCON INSIDE FISHERIES

WASHINGTON COASTAL RIVER FISHERIES

North Washington Coastal Rivers

Net and sport fisheries targeting salmon in northern Washington coastal rivers were implemented based upon pre-season, Tribal-State agreements and subject to in-season adjustments. The 2017 north coastal rivers net harvest (all by Tribal fisheries that are non-selective) includes catch from the Sooes, Quillayute system, Hoh, Queets, and Quinault Rivers. The 2017 commercial Tribal net fisheries in north coastal rivers harvested an estimated 12,100 Chinook salmon and 55,400 Coho salmon through November 15, 2017.

Recreational fisheries for Chinook and coho were conducted during 2017 in the Quillayute, Hoh and Queets River systems, and included mark-selective fisheries targeting hatchery summer Chinook and hatchery summer and fall Coho salmon. Harvest or impact estimates for these fisheries are unavailable at this time.

Grays Harbor, Washington

Harvest numbers reported for Grays Harbor, Washington include catch from both the Humptulips and Chehalis Rivers through November 15, 2017. The non-selective Tribal net fisheries in Grays Harbor, and including fisheries in the Humptulips and Chehalis Rivers, harvested an estimated 3,600 Chinook salmon and 10,100 Coho salmon. The non-Tribal commercial fishery in the northern portion of Grays Harbor near the Humptulips River (Area 2C) was non-selective and harvested 15 Chinook and 43 Coho. There were 15 Chinook salmon (mark-selective) and 1,274 Coho harvested in the Non-Tribal commercial gillnet fishery in Areas 2A and 2D. Sport fisheries conducted in the Chehalis and Humptulips Rivers included mark-selective components for Chinook and Coho salmon. Harvest data for these fisheries are not available at this time.

COLUMBIA RIVER FISHERIES

Treaty and non-Treaty net and sport salmon fisheries in 2017 occurred during the winter/spring (January – June 15), summer (June 16 – July) and fall (August – October) periods. All fisheries were constrained by impacts on ESA listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA listed upper Columbia River spring Chinook, Snake River

spring/summer Chinook and wild winter steelhead. Fall fisheries were mainly constrained by impacts to upriver summer steelhead (hatchery and wild) but especially by ESA listed B-Index steelhead which are primarily part of the Snake River steelhead distinct population segment (DPS). Impacts on Snake River wild fall Chinook, wild lower Columbia River tule fall Chinook and wild lower Columbia River Coho Salmon can be a constraint to fall season fisheries, but did not limit Columbia River fall fisheries in 2017.

Columbia River salmon fisheries are developed and regulated to meet conservation standards. Fisheries are managed to operate within the impact limits set for ESA listed stocks, meet the objectives for healthy Columbia River natural stocks, and ensure brood stock needs are met for hatchery salmon. Mainstem Columbia River fisheries are also developed and managed to remain within the requirements of the 2008 – 2017 *US v. Oregon* Management Agreement (MA) which include Tribal/Non-Tribal sharing agreements. A new MA for 2018-2027 has been finalized and adopted. All 2017 data is preliminary and subject to minor changes. This section includes harvest from Columbia River fisheries that are considered to be of interest to the PSC; therefore the data may not match other reports that include total harvest.

Winter-Spring Fisheries

Non-Tribal Net

The mainstem Winter/Spring commercial fishery has operated under mark-selective fishery regulations since 2002. As a result of recent guidance from the Oregon and Washington Fish and Wildlife commissions, no winter/spring non-treaty commercial salmon seasons occurred in the mainstem Columbia River in 2017. Commercial fisheries during the winter-spring timeframe did occur in off-channel areas (Select Areas) in the Columbia River estuary and Wanapum tribal fisheries upstream of Priest Rapids Dam, but are not reported in this document.

Sport

Mainstem Columbia River mark-selective sport fisheries began in 2001. For 2017, the area below Bonneville Dam was open January 1 – April 10, April 13-17, and April 20-23 for hatchery Chinook retention. Catch estimates include 9,047 hatchery adult spring Chinook (943 non-adipose fin clipped released). The area from Bonneville Dam upstream to McNary Dam was open March 16 – May 5. Catch estimates for this area totaled 15 hatchery adult spring Chinook (27 non-adipose fin clipped released). The Snake River fishery structure included three specific catch areas open on a days-per-week rotation. The fishery opened in late April and continued into mid-May. Catch in the Snake River fishery totaled 65 hatchery adult spring Chinook and 8 non-adipose fin clipped released. Fisheries upstream of Bonneville Dam were constrained due to a lower than projected upriver spring Chinook run. Fisheries also occurred in tributaries but are not reported in this document.

Adult Spring Chinook Handle in the 2017 Winter/Spring Sport Mark-Selective Fishery.					
System	Area	Chinook Kept	Chinook Released	Total Handle	% Kept
Columbia River	Below BON (LCR)	9,047	943	9,990	91%
Columbia River	BON to WA-OR S/L	15	27	42	36%
Snake River	Washington Waters	65	8	73	89%

Treaty

Treaty mainstem winter/spring fisheries occurred from January 1 through June 15. Treaty mainstem fisheries are not mark-selective. Treaty fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Some additional harvest occurs just downstream of Bonneville Dam in platform and hook-and-line fisheries. Spring season fisheries may include three fishery sectors, a ceremonial permit gillnet fishery, a platform and hook-and-line fishery and a commercial gillnet fishery (winter and periodically in the spring after ceremonial needs have been met). The platform and hook-and-line fishery was open for subistence throughout the winter/spring period (opened February 1). Commercial sales did not occur in 2017 Treaty fisheries during the spring management period. Harvest estimates from the combined ceremonial and subsistence fisheries totaled 8,109 upriver spring Chinook, which includes harvest from below Bonneville Dam. Treaty harvest in tributaries is not included in this report.

Summer Fisheries

Non-Treaty Net

As a result of recent guidance from the Oregon and Washington Fish and Wildlife commissions, non-treaty mainstem commercial fisheries did not occur in the 2017 summer management timeframe. Non-treaty commercial fisheries are now restricted to non-gillnet gear and did not occur since a suitable alternative has not been identified.

Sport

Summer season fisheries occurred from June 16-30 and July 7-31 from the Astoria-Megler Bridge near the mouth of the Columbia River upstream to Bonneville Dam. The fishery was mark-selective the entire season. Catch estimates below Bonneville Dam (BON) totaled 3,516 adult Chinook kept (2,248 non-adipose fin clipped released). The season upstream of Bonneville Dam was open June 16-July 31. Catch estimates from Bonneville Dam upstream to McNary Dam totaled 120 adult Chinook kept (19 non-adipose fin clipped released). The majority of harvest occured in fisheries upstream of Priest Rapids Dam and in tributaries, which are not reported in this document.

Adult Summer Chinook Salmon Handle in the 2017 Sport Mark-Selective Fishery.					
System	Area	Chinook Kept	Chinook Released	Total Handle	% Kept
Columbia River	Below BON (LCR)	3,516	2,248	5,764	61%
Columbia River	BON to PRD	120	19	139	86% [1]

[1] *The high mark rate may be an artifact of small sample size in the creel.*

Treaty

Summer season fisheries occurred from June 16 through July 31. Treaty mainstem fisheries are not mark-selective. Treaty fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Some additional harvest occurs just downstream of Bonneville Dam in platform and hook-and-line fisheries. Seven weekly commercial gillnet fishing periods were conducted from June 16 – July 29. Platform and hook-and-line fisheries also occurred throughout the season, and fish were sold commercially or retained for subsistence use. Harvest estimates totaled 16,328 upper Columbia River summer Chinook from mainstem fisheries.

Fall Fisheries

Non-Treaty Net

Fall season mainstem fisheries are typically categorized into early and late fall seasons. The early fall season generally encompasses the month of August and in some years, early September, whereas the late fall season generally begins in mid-September and may continue through October. Time, area, and gear restrictions were in place for fall season commercial gillnet fisheries. Fall gillnet fisheries are non-MSF. No seining or Coho tangle net fisheries occurred in 2017 due to ESA constraints. In 2017, the early fall season consisted of 5 fishing periods during August 22 – September 1 in commercial Zones 4-5 (Warrior Rock to Beacon Rock). The late fall season was brief due to ESA constraints, consisting of only two periods in September (September 17 and September 19) which also occurred in Zones 4-5. Harvest estimates for combined fall fisheries are estimated to include 19,398 Chinook (18,363 adults and 1,035 jacks) and 931 Coho Salmon.

Sport

Fall season recreational fisheries are mark-selective for Coho Salmon and in recent years have included some mark-selective periods for Chinook in the Buoy 10 area and in the 69-mile stretch of the lower Columbia River from the Tongue Point line upstream to Warrior Rock, which is near the mouth of the Willamette River. The Buoy 10 fishery opened August 1 and continued through December 31; Chinook retention was allowed August 1 through September 4.

Mark-selective regulations for Chinook were not utilized in the 2017 Buoy 10 fishery. Additional regulations for the Buoy 10 fishery included minimum size limits for Chinook (24-inches) and Coho (16-inches), and in 2017, steelhead retention was prohibited during August. Released Chinook included fish that did not meet the minimum size requirement, fish released during non-retention periods, and any voluntary releases of legal fish throughout the season.

Buoy 10 catches included 28,398 Chinook and 18,834 hatchery Coho Salmon kept. Released fish included 6,199 Chinook and 12,793 Coho Salmon. The lower Columbia River (LCR) mainstem sport fishery from the Rocky Point – Tongue Point line upstream to Bonneville Dam opened August 1 and continued through December 31. In the area from the Rocky Point – Tongue Point line upstream to the Lewis River, mark-selective rules for Chinook were in effect September 8-14, followed by no Chinook retention during September 15-30. The kept catch estimate for the LCR sport fishery was 26,138 adult Chinook through October 31, which includes 770 kept and 2,086 released Chinook during the MSF period. The mainstem sport fishery from Bonneville Dam to the Highway 395 Bridge (near Pasco, Washington) opened August 1 and continued through December 31. This fishery was non-MSF. Catch estimates for the Bonneville to McNary area totaled 5,851 adult fall Chinook and 1,798 Coho Salmon. Additional fisheries occurred on the Columbia River in the Hanford Reach area (downstream of Priest Rapids Dam), in tributaries and in the Snake River, but are not reported in this document.

Adult Fall Chinook and Coho Salmon Handle in the 2017 Columbia River Fall Sport Fisheries

System	Area	Chinook Kept	Chinook Released	Total Handle	% Kept
Columbia River	Buoy 10	28,398	6,199	34,597	82%
Columbia River	LCR Sport [1]	26,138	2,846	28,984	90%
Columbia River	Bonneville-McNary	5,851	709	6,560	89%
System	Area	Coho Kept	Coho Released	Total Handle	% Kept
Columbia River	Buoy 10	18,834	12,793	31,627	60%
Columbia River	LCR Sport [1]	3,114	1,488	4,602	68%
Columbia River	Bonneville-McNary	1,798	166	1,964	92%

[1] *Through October 31, 2017*

Treaty

Fall season fisheries occurred from August 1 through December 31. Tribal fisheries are not mark-selective. Treaty fisheries are primarily conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Some additional harvest occurs just downstream of Bonneville Dam in platform and hook-and-line fisheries. The commercial gillnet fishery consisted of seven weekly fishing periods from August 21 – October 5. Preliminary harvest estimates for all fall season fisheries totaled 121,674 fall Chinook (117,463 adults and 4,211 jacks) and 8,731 Coho Salmon. Harvest included catch in Zone 6 tributary fisheries.

PUGET SOUND FISHERIES

Puget Sound marine fisheries of interest to the Pacific Salmon Commission were regulated to meet conservation and allocation objectives for Chinook, Coho, Chum, Pink, and Sockeye salmon stocks, per Tribal-State agreement. For Puget Sound Chinook listed under the ESA, fisheries were managed according to the Puget Sound Chinook Harvest Management Plan (PSIT and WDFW 2010). This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service (NMFS) to be consistent with requirements specified under the ESA 4(d) Rule.

Release requirements were applied to many sport and net fisheries for Chinook, Coho, and Chum salmon -- the latter to protect ESA-listed Hood Canal and Strait of Juan de Fuca summer Chum.

Puget Sound marine fisheries were constrained by the need to meet management objectives for ESA-listed Puget Sound Chinook and due to conservation concerns for some Puget Sound Coho stocks. The primary constraining Puget Sound Chinook stocks during 2017 pre-season planning included Dungeness and Nooksack Chinook. Skagit and Stillaguamish Coho were the primary Coho management units of concern for developing fisheries in the Strait of Juan de Fuca, San Juan Islands, and Puget Sound.

<u>Atlantic salmon escape</u>

Of note during the 2017 season was the escape of thousands of Atlantic salmon on August 19, 2017, when a commercial net pen array collapsed at a fish farm located in Deepwater Bay off of Cypress Island in the San Juan Islands (within Marine Area 7). Cooke Aquaculture, the net pen operator, informed the Washington Department of Fish and Wildlife (WDFW) and other agencies that the collapsed pen held a total of 305,000 Atlantic salmon. Of this total, the number of Atlantic salmon that escaped into Puget Sound waters is estimated to be approximately 160,000 fish.

As an immediate response, multiple agencies formed a Unified Incident Command (UIC) center based in Anacortes, WA to better communicate about recovery efforts with Cooke Aquaculture, the Puget Sound tribes, state and federal agencies, as well as with the media and public. Also, WDFW and UIC notified Canada Department of Fisheries and Oceans and First Nations representatives immediately after the incident and continued to keep the Canadian representatives informed with regular information updates in the subsequent weeks and months.

Both Tribal and Non-tribal (commercial, recreational) fisheries were implemented in Puget Sound to remove escaped Atlantic salmon, within the constraints of pre-season agreed-to fisheries that had been approved by NOAA Fisheries in their issuance of the Biological Opinion as required under the federal Endangered Species Act. Such fisheries included Tribal and non-Tribal commercial fisheries managed through the Pacific Salmon Commission's Fraser River Panel (FRP), as reported in a separate section below.

Recreational fisheries were implemented in marine and freshwater areas of Puget Sound as described in the 2017-18 List of Agreed Fisheries, with the following addition starting on August 22, in response to the Atlantic salmon escape: There was no size or catch limit on Atlantic salmon, but anglers could fish for Atlantics only in marine waters that were already open to fishing for Pacific salmon or freshwater areas open for trout fishing. Anglers had to stop fishing for Atlantic salmon once they had caught their daily limit of Pacific salmon.

Both the State and Tribes have developed protocols to implement ongoing sampling and monitoring of Atlantic salmon following the escape of these fish from the net pens near Cypress Island. Observational data have been collected based on the presence/absence of Atlantic salmon in marine and freshwater fisheries, and during regular escapement monitoring activities for Pacific salmon (e.g., spawning ground surveys, hatcheries, fish traps). Samplers have collected biological data as possible from individual fish (e.g., scales, otoliths, length, sex, maturity status, stomach contents, and tissues).

To date, samplers have observed and sampled escaped Atlantic salmon in fisheries, but have not observed any Atlantics during escapement monitoring at hatcheries, fish traps, and on the spawning grounds. The total number of escaped Atlantic salmon captured in commercial fisheries (Tribal and non-Tribal combined) in Puget Sound is estimated at 58,350, with the majority of these fish caught in Marine Areas 7, 7A, 7B, and 7C. The total number of recreational catch of Atlantic salmon observed by dockside samplers is estimated at 966, with 97% of these fish caught in Area 7.

Strait of Juan de Fuca Sport

Marked Chinook retention was allowed for sport fishing in salmon management Area 5 from February 16 – April 10 and in Area 6 from December 1, 2016 – April 15, 2017. Sport fishing regulations allowed retention of marked Chinook and marked Coho from July 1 through August 15 in Areas 5 and 6, with marked Coho retention also permitted through August 31 in Area 5. Dungeness Bay was open for marked Coho retention during the month of October. Preliminary estimates of Chinook encounters and the legal-size mark rate in the Area 5 sport mark-selective fishery are presented in the following table.

Preliminary estimates of Chinook retained, released (legal and sub-legal size), and the legal-size mark rate in the Area 5 sport mark-selective fishery, July 1 – August 15, 2017.

Chinook retained	Chinook released	Total encounters	Mark % (legal size)
2,381	17,197	19,578	61%

A detailed report of this summer period sport fishery, including estimated catch, effort and other results of sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2018.

Strait of Juan de Fuca Tribal Troll (Area 4B, 5, and 6C)

During the winter Tribal troll fishery in Areas 4B, 5, and 6C (November 1, 2016 – April 15, 2017), 1,500 Chinook and zero Coho were caught. In the summer Tribal troll fishery in Areas 5 and 6C only (June 1 – September 30, 2017), 100 Chinook and 100 Coho were caught. The Tribal catch estimates from this area do not include catch from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon Tribal ocean troll summary.

Strait of Juan de Fuca Tribal Net

Preliminary estimates of the 2017 catch in the Strait of Juan de Fuca Tribal net fisheries (no non-Tribal net fisheries in the Strait of Juan de Fuca) were zero Chinook and 900 Coho salmon.

San Juan Islands Net (Areas 6, 7, and 7A)

Preliminary estimates of the 2017 catch in the San Juan Island net fishery directed at Sockeye, Pink, or Chum salmon totaled 800 Coho and two Chinook salmon in the non-Tribal fishery. Tribal fishery landings from this area for all gear types totaled 2,600 Chinook and 2,500 Coho.

San Juan Islands (Area 7) Sport

Marked Chinook retention was allowed in the entire Area 7 during the winter/spring season from December 1, 2016 – February 10, 2017 and from March 25 – April 21, 2017. Preliminary estimates of Chinook retained and released by anglers during this fishery were produced via an intensive sampling program and are presented in the table below. A detailed report of this fishery, including estimates of catch, effort and other results of sampling and monitoring programs, is available from the Washington Department of Fish and Wildlife.

Estimated Chinook retained, released (legal and sub-legal size) and the legal size mark rate in the Area 7 sport mark-selective fishery, December 1, 2016 – February 10, 2017 and March 25 – April 21, 2017.			
Chinook retained	Chinook released	Total encounters	Mark % (legal size)
4,024	7,319	11,343	72%

During the summer season in Area 7, recreational anglers were allowed to retain Chinook from July 1 through September 30. Mark-selective regulations (release of unmarked Chinook required) were implemented during the month of July only. The southern and southeastern (Rosario Strait) portions of Area 7 were closed from July 1 – September 30 to protect Puget Sound Chinook salmon. Additional sub-area closures are described in the 2016-17 Washington State Sport Fishing Rules Pamphlet. The table below presents estimated Chinook encounters (retained and released) and the legal-size mark rate in the Area 7 sport mark-selective fishery, from July 1-31, 2017.

Estimated Chinook retained, released (legal and sub-legal size) and the legal size mark rate in the Area 7 sport mark-selective fishery, July 1-31, 2017.			
Chinook retained	Chinook released	Total encounters	Mark % (legal size)
3,695	6,508	10,203	71%

During the summer sport fishery in Area 7, Coho retention was not permitted except within Bellingham Bay from August 16 – September 30. Anglers were allowed to retain both marked and unmarked Chinook and Coho during the Bellingham Bay sport fishery. Catch estimates and sampling information for this area during the period from August 1 – September 30 are not available at this time.

Inside Puget Sound (Areas 8-13) Sport

Mark-selective sport fisheries (MSFs) targeting adipose fin-clipped (marked) hatchery Chinook were conducted in Area 8.1 (Deception Pass, Hope Island, and Skagit Bay), Area 8.2 (Port Susan & Port Gardner), Area 9 (Admiralty Inlet), Area 10 (Seattle-Bremerton), Area 11 (Tacoma-Vashon Island), Area 12 (Hood Canal), and Area 13 (South Puget Sound) during the winter (October – April) period, and in Areas 9, 10, 11, 12, and 13 during the summer (May – September) period. Additionally, marked and unmarked Chinook retention was permitted in the Tulalip Bay (Area 8-2) on Fridays through Sundays from May 26 – September 25, and in Elliott Bay (Area 10) from August 11-13. The following table lists the 2017 Puget Sound MSFs.

Puget Sound Chinook mark-selective sport fisheries conducted in marine areas during 2017.	
Areas	Season

8.1 & 8.2	January 1 – April 30; November 1 – December 31
9	February 16 – April; July 16 – July 30; November 1-30
10	January 1-22; July 16 – August 15; November 1 – December 31; Sinclair Inlet: July 1 – September 30
11	February 1 – April 30; June 1 – December 31
12	January 1 – April 30; July 1 – December 31
13	January 1 – December 31

Post-season reports detailing results of these Chinook MSFs, including estimates of retained and released encounters, effort and mark rates from sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in the spring of 2018.

Mark-selective sport fisheries during 2017 directed at marked Coho were conducted in the following marine catch areas: Area 8.2 from August 1 – September 4 (limited shoreline only area); Area 9 from July 15 – September 4 (shoreline only July 31 – September 4); Area 10 from July 1 – December 31; Area 11 from November 1 – December 31; and Area 13 from January 1 – December 31. Marked and unmarked Coho retention was permitted in Tulalip Bay on Fridays through Sundays from May 26 – September 25, in Area 11 from May 1 – October 31, and in Area 12 from January 1 – April 30 and July 1 – December 30.

Puget Sound Marine Net (Areas 8-13 & 7B-D)

To achieve conservation objectives for natural Puget Sound Chinook and Coho, limited marine net fishing opportunities directed at returns of hatchery Chinook and both hatchery and natural Coho were planned for 2017. Chinook and Coho were also intercepted in fisheries directed at Pink and Chum salmon. A total of 78,600 Chinook and 122,900 Coho were landed in the Tribal marine net fisheries in Puget Sound (Areas 8-13 & 7B-D) during 2017. Non-Tribal net fishery landings from these areas totaled 12,100 Chinook and 10,900 Coho. Nearly all Chinook landed in the non-Tribal net fishery occurred during Chinook-directed fisheries in Areas 7B, 7C, and 12C.

Puget Sound Rivers Fisheries

Tribal net and non-Tribal sport fisheries were implemented in freshwater systems based upon pre-season, Tribal-State agreements and subject in part to in-season adjustment. Harvest of Chinook and Coho in the Tribal in-river net fisheries (includes catch from river systems in the Strait of Juan de Fuca, Hood Canal, and Puget Sound) totaled 52,100 Chinook and 61,100 Coho during 2017.

Also, recreational fisheries targeting Chinook salmon were conducted in nine Puget Sound Rivers that have PSC Chinook coded wire tag (CWT) exploitation rate indicator stocks or double index tag (DIT) groups, as listed in the table below. Of these, seven rivers had mark-selective fisheries and two rivers had non-selective fisheries, as follows:

Chinook mark-selective sport fisheries conducted in Puget Sound rivers during 2017.	
River	Season
Nooksack River	September 1 - 30
Cascade River	June 1 – July 15
Skagit River	June 1 – July 15
Skykomish River	June 1 – July 31
Carbon River	September 1 – November 30
Puyallup River	August 15 – December 31
Nisqually River	July 1 – November 15
Chinook non-selective sport fisheries conducted in Puget Sound rivers during 2017.	
River	Season
Samish River	August 1 – November 30
Green River	September 1 – December 31

During the 2017 season there were no mark-selective sport fisheries targeting hatchery Coho in the rivers of Puget Sound that have PSC Coho CWT exploitation rate indicator stocks or DIT groups. However, recreational non-selective Coho fisheries were conducted on the Skykomish River, Green River, Carbon River, Puyallup River, and Quilcene River.

REFERENCES

Pacific Salmon Treaty (PST) Act of 1985. 2008 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

Puget Sound Indian Tribes and Washington Department of Fish & Wildlife (PSIT and WDFW). 2010. Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component. Northwest Indian Fisheries Commission, Olympia, Washington. 237 p.

Pacific Fishery Management Council (PFMC). 2008. Fishery Regulation Assessment Model (FRAM): An Overview for Coho and Chinook v3.0. Pacific Fishery Management Council, Portland, Oregon. 43 p.

Table 15. Preliminary 2017 Landed Chinook Catch for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission. Values are presented in number of fish rounded to the nearest 100. [9/]

Fisheries	2017 Preseason [5/] Total Mortality [1/]	2017 Preseason [5/] Landed [2/]	2017 Preliminary Landed	Landed 2016	Landed 2015	Landed 2014	Landed 2013	Landed 2012
OCEAN FISHERIES								
Commercial Troll								
Neah Bay and La Push (areas 3,4,4B) [3/]	62,600	54,500	35,100	28,100	73,600	77,100	63,700	79,400
Columbia Ocean Area and Westport (area 1,2) [4/]	50,100	30,500	24,700	14,200	51,000	39,400	28,300	20,700
Sport (see text for quota information)								
Neah Bay (area 4)	8,900	7,900	7,300	3,300	8,500	5,900	6,200	5,600
La Push (area 3)	2,800	2,500	500	300	2,400	1,600	2,400	1,300
Westport (area 2)	23,800	21,400	6,600	8,400	19,100	23,500	13,700	19,500
Columbia Ocean Area (area 1) [13/]	17,200	13,200	7,500	6,000	12,200	11,300	8,500	9,100
INSIDE FISHERIES								
Sport [10/]								
Strait of Juan de Fuca (area 5,6)	14,500	9,100	na	15,000	11,800	11,100	14,900	13,900

San Juan Islands (area 7)	8,600	6,100	na	5,900	8,600	9,200	9,500	5,800
Puget Sound Marine (area 8-13)	30,600	26,300	na	16,700	9,000	12,100	16,600	22,000
Puget Sound Rivers [12/]	8,200	7,800	na	9,600	11,100	11,800	19,600	23,200
North WA Coastal Rivers	-	1,700	1,800	600	2,200	1,200	2,700	1,600
Grays Harbor [7/]	2,400	2,000	na	2,800	3,800	1,200	3,800	4,600
Columbia River (Spring) [6/]	9,200	-	9,100	14,100	23,100	21,400	8,400	17,000
Columbia River (Summer) [6/]	3,900	-	3,500	6,800	6,700	2,300	2,100	3,200
Columbia River (Fall) (incl. Buoy 10) [6/]	62,100	-	60,300	65,600	91,300	63,000	74,500	47,000
Commercial[11/]								
Strait of Juan de Fuca net and troll (area 4B,5,6C)	8,700	5,900	900	700	5,900	6,100	4,100	3,900
San Juan Islands (area 6,7, 7A)	9,200	9,100	2,600	-	4,700	6,900	4,000	400
Puget Sound Marine (8-13,7B-D)	36,000	35,400	90,700	55,800	33,100	28,400	70,100	75,700
Puget Sound Rivers[12/]	24,100	24,100	52,100	23,300	21,200	19,900	26,800	39,500
North WA Coastal Rivers	-	10,800	14,200	9,200	17,300	20,400	14,400	12,900

Grays Harbor (area 2A-2D) [7/]	3,300	3,000	3,600	2,100	10,500	5,100	2,900	4,000
Columbia River Net (Winter/Spring) [8/]	7,900	-	7,900	20,400	37,600	28,200	11,200	23,800
Columbia River Net (Summer) [8/]	16,900	-	16,900	23,400	41,700	22,200	15,300	9,500
Columbia River Net (Fall) [8/]	125,700	-	125,700	188,900	343,900	365,900	312,500	119,800

Table 15 Footnotes:

[1/] Estimates of total mortality (not adjusted for adult equivalents) include non-retention mortality. Total Mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

[2/] For the ocean fisheries, this column shows the Chinook troll and recreational quotas used for 2017 pre-season fishery planning as distributed by ocean area (Landing Quotas = Landed). See text for any in-season adjustments.

[3/] Includes Area 4B catch during the PFMC management period (May 1 – September 15); Area 4B Treaty troll catch outside PFMC period included under Strait of Juan de Fuca net and troll (October-April).

[4/] Includes Oregon troll catch in Area 1.

[5/] FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Chinook defined as May 1 through April 30.

[6/] Mainstem retained sport catch only (upstream to McNary Dam for spring, Priest Rapids Dam for summer and to Hwy 395 for fall). See tables 10, 22-23 in the current Joint Staff Report regarding spring and summer Chinook and tables 25-27 in the annual fall report. http://wdfw.wa.gov/fishing/crc/staff_reports.html.

[7/] Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers and their tributaries, for sport, and Chehalis and Humptulips rivers for commercial net estimates.

[8/] Mainstem retained catch only; includes tribal C&S and Commercial from all gear types and non-tribal (Columbia River mouth upstream to McNary Dam). Catch data from annual Joint Staff Reports. Winter and spring catch Tables 7 (Tribal) and T18 (non-Tribal). Summer catch is in Table10. Fall catch from annual fall report T21, 23 and 29. http://wdfw.wa.gov/fishing/crc/staff_reports.html.

[9/] Includes catch from mark-selective fisheries (MSFs) as described in the MSF table below.

[10/] Sport fisheries data for the most recent two years are preliminary. All data subject to change.

[11/] Includes non-tribal & tribal commercial, as well as tribal C&S for all gear types.

[12/] Chinook fisheries in Puget Sound Rivers are modeled using the Terminal Area Management Module (TAMM), based upon FRAM output of terminal run sizes. Total Mortality is estimated in TAMM as catch + non-retention mortality (PFMC 2008).

[13/] Includes Oregon sport catch in Area 1.

Table 16. Preliminary 2017 Landed Coho Catch for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission.

Values are presented in number of fish rounded to the nearest 100. [6/]

	2017			Landed				
	Preseason [9/]							
Fisheries	Total Mortality [1/]	Landed [2/]	Preliminary Landed	2016	2015	2014	2013	2012
OCEAN FISHERIES								
Commercial Troll								
Neah Bay and La Push (area 3,4,4B) [3/]	15,800	13,400	13,200	-	4,100	60,100	48,500	38,600
Columbia Ocean Area and Westport (area 1,2) [10/]	10,000	4,700	1,800	-	4,900	19,000	5,400	2,800
Sport (see text for quota information)								
Neah Bay (area 4)	5,400	4,400	3,500	100	7,800	5,600	6,500	7,500
La Push (area 3)	1,300	1,100	1,700	-	600	4,600	2,800	2,200
Westport (area 2)	18,400	15,500	15,700	-	30,700	54,500	20,400	11,900
Columbia Ocean Area (area 1) [12/]	24,200	21,000	21,300	18,600	44,600	75,100	20,500	11,400
INSIDE FISHERIES								
Sport [7/]								

Strait of Juan de Fuca (area 5,6)	12,400	10,200	na	200	62,900	63,000	41,300	76,200
San Juan Islands (area 7)	300	-	na	100	3,700	2,000	2,600	2,200
Puget Sound Marine (area 8-13)	21,200	18,400	na	5,200	77,200	59,200	72,100	91,300
Puget Sound Rivers	24,900	23,400	na	11,300	18,600	17,900	70,000	43,500
North WA Coastal Rivers	3,800	3,700	5,300	1,300	3,600	8,800	7,200	2,700
Grays Harbor [5/]	9,300	8,900	na	4,300	8,200	27,300	21,200	18,300
Columbia River Buoy 10 [4/,11/]	17,500	15,000	18,300	9,200	36,900	57,700	7,600	7,400
Commercial [8/]								
Strait of Juan de Fuca net and troll (area 4B,5,6C)	1,000	1,000	900	700	1,700	2,300	2,700	3,500
San Juan Islands (area 6,7,7A)	14,000	10,000	3,300	4,200	4,000	19,800	19,700	10,500
Puget Sound Marine (area 8-13,7B-D)	114,600	111,800	133,800	210,900	28,800	108,400	168,500	236,300
Puget Sound Rivers	50,800	49,800	61,100	65,400	17,800	73,400	136,000	132,400
North WA Coastal Rivers	52,200	51,100	61,900	52,200	18,200	101,800	43,900	39,700
Grays Harbor (area 2A-2D) [5/]	14,700	14,400	11,500	3,200	12,600	67,200	22,000	30,700

Table 16 Footnotes:

[1/] Estimates of total mortality include non-retention mortality. Total Mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

[2/] For ocean fisheries this column shows the Coho troll and recreational quotas used for 2017 pre-season fishery planning as distributed by ocean area (Landing Quotas = Landed). See text for any in-season adjustments.

[3/] Includes area 4B catch during the PFMC management period (May 1 – September 15); area 4B Treaty troll catch outside the PFMC period included under Strait Juan de Fuca net and troll (October-April).

[4/] Retained catch only. See table 26 in the current Fall Joint Staff report available on line at http://wdfw.wa.gov/fishing/crc/staff_reports.html.

[5/] Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers; their tributaries are included in sport estimates only.

[6/] Includes catch from mark-selective fisheries (MSFs) where estimates are available (seasons described in MSF table below).

[7/] Sport data for the most recent two years are preliminary. All data subject to change.

[8/] Includes Non-Tribal and Tribal commercial and take home catch, as well as Tribal ceremonial and subsistence (C&S) for all gear types. Starting in 2012, the Copalis, Moclips, and Ozette Rivers have been removed from landed catch.

[9/] FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Coho defined as January 1 through December 31.

[10/] Includes Oregon troll catch in Area 1

[11/] Sport fisheries data after March 2013 are preliminary. For Buoy 10, see table 25 in the annual fall report.

[12/] Includes Oregon sport catch in Area 1.

Table 17. Mark-Selective Chinook and Coho Fisheries by Area and Year. “Yes” denotes that a mark-selective fishery occurred, even if it only occurred in a subset of the fishing area, season, gear type, or user group.

Selective Coho	2017	2016	2015	2014	2013	2012	2011	2010
Ocean Troll								
Cape Flattery & Quillayute (Areas 3/4)	yes	no	yes	yes	yes	yes	yes	yes
Columbia R & Grays Harbor (Areas 1 & 2)	yes	no	yes	yes	yes	yes	yes	yes
Ocean Sport								
Neah Bay (Area 4)	yes	no	yes	yes	yes	yes	yes	yes
LaPush (Area 3)	yes	no	yes	yes	yes	yes	yes	yes
Grays Harbor (Area 2)	yes	no	yes	yes	yes	yes	yes	yes
Col. R. (Leadbetter Pt. to Cape Falcon)	yes	yes	yes	yes	yes	yes	yes	yes
Inside Fisheries								
Sport								
Juan de Fuca (Areas 5 & 6)	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (7)	no	no	yes	yes	yes	yes	yes	yes
Puget Sound Sport (Areas 8-13 all year)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	yes	yes	no	yes	yes
Willapa Bay (Area 2-1)	yes	no	yes	no	no	no	yes	no
Columbia River Buoy 10	yes	yes	yes	yes	yes	yes	yes	yes

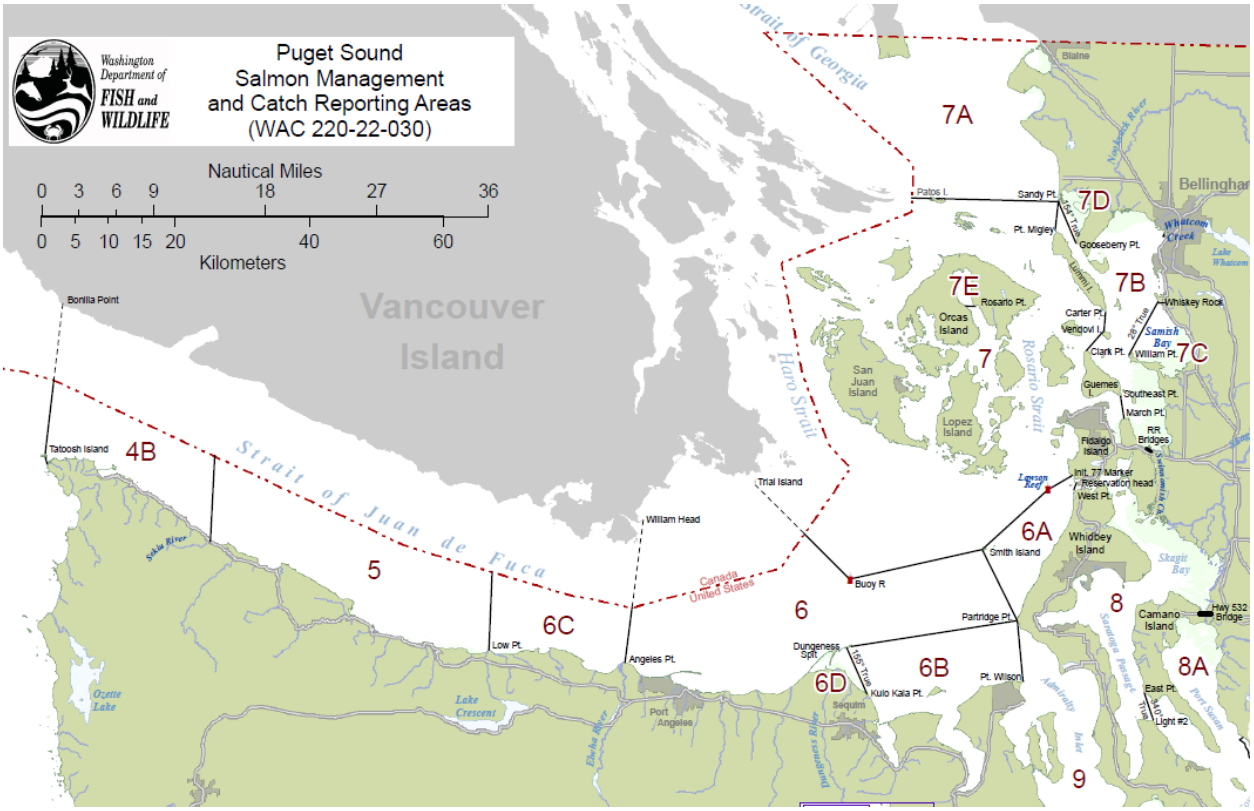
Commercial								
North WA Coastal Rivers	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	no	no	yes	yes	no	no	yes	yes
Willapa Bay (Area 2-1)	no	no	no	no	no	no	no	yes
Columbia River Net/ - Fall	no	no	yes	yes	yes	no	no	no
Strait of Juan de Fuca (Areas 4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine (Areas 8 - 13)	no	yes	no	no	no	no	no	no
Puget Sound Rivers	no	no	no	no	no	no	no	no
Selective Chinook	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Ocean Troll								
Cape Flattery & Quillayute (Areas 3/4/4B)	no	no	no	no	no	no	no	no
Columbia. R & Grays Harbor (Areas 1&2)	no	no	no	no	no	no	no	no
Ocean Sport								
Neah Bay (Area 4)	no	no	yes	yes	yes	yes	yes	yes
La Push (Area 3)	no	no	yes	yes	yes	yes	yes	yes
Grays Harbor/Westport (Area 2)	no	yes	yes	yes	yes	yes	yes	yes
Col. R./Ilwaco (Leadbetter Pt. to Cape Falcon)	no	no	yes	yes	yes	yes	yes	yes
Inside Fisheries								
Sport								

Juan de Fuca (Area 5&6)	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (Area 7)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Sport (Areas 8-13)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	yes	yes	yes	no	no
Columbia River Sport - Winter/Spring	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport - Summer	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport - Fall	yes	yes	yes	yes	yes	yes	no	no
Willapa Bay (Area 2-1)	yes	yes	yes	yes	yes	yes	yes	yes
Commercial								
North WA Coastal Rivers	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	yes	yes	yes	yes	yes	yes	no	no
Willapa Bay (Area 2-1)	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Net-Winter/Spring	na	yes	yes	yes	yes	yes	yes	yes
Columbia River Net - Summer	na	no	no	no	no	no	no	no
Columbia River Net - Fall	no	yes	yes	yes	yes	no	no	no
Strait of Juan de Fuca(4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine (Areas 8 - 13)	no	no	yes	no	no	no	yes	yes
Puget Sound Rivers	yes	no	yes	yes	yes	yes	yes	no

III. PRELIMINARY REVIEW OF THE 2017 WASHINGTON CHUM SALMON FISHERIES OF INTEREST TO THE PACIFIC SALMON COMMISSION

This summary report provides a preliminary review of the 2017 U.S. Chum salmon (*Oncorhynchus keta*) fisheries conducted by Puget Sound salmon co-managers (Puget Sound Treaty fishing tribes and the State of Washington) in the Strait of Juan de Fuca (Salmon Management and Catch Reporting Areas 4B, 5 and 6C), the San Juan Islands and the Point Roberts area (Areas 7 and 7A) (Figure 39), conducted in compliance with provisions of Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST 2008). The harvest and abundance information provided are based on preliminary data reported through November 18, 2017. These preliminary data are subject to correction and revision as additional information becomes available.

Figure 39. Puget Sound Salmon Management and Catch Reporting Areas with Chum salmon fisheries of interest to the Pacific Salmon Commission.



MIXED STOCK FISHERIES

Areas 4B, 5 and 6C

As in previous years, the Chum salmon fishery in Areas 4B, 5 and 6C was restricted to Tribal fishers using gillnets. The fall Chum-directed salmon fishery opened the week of October 8, with a schedule of six days per week and continued through November 11. A total of 3,302 Chum

salmon were harvested during this period (Table 18). During the fall Chum fisheries in Areas 4B, 5, and 6C, there was a reported by-catch of 338 Coho, 53 Chinook, and zero Steelhead.

Table 18. Preliminary 2017 Chum salmon harvest report for Washington Salmon Catch Reporting Areas 4B, 5, and 6C.

Areas 4B, 5, 6C	
Tribal Gill Net Only	
Time Periods	GN
Through 9/23	3
9/24-9/30	0
10/1-10/7	0
10/8-10/14	375
10/15-10/21	1,178
10/22-10/28	1,465
10/29-11/4	236
11/5-11/11	45
11/12-11/15	0
Total	3,302

Areas 7 and 7A

Chum salmon fisheries in Areas 7 and 7A are regulated to comply with a base harvest ceiling of 130,000 Chum salmon, unless a critically low level of abundance is identified for those stocks migrating through Johnstone Strait ("Inside Southern Chum salmon") (PST 2008). Chapter 6 of Annex IV specifies that U.S. commercial fisheries for Chum salmon in Areas 7 and 7A will not occur prior to October 10. Paragraph 10 (a-b) specifies run sizes below 1.0 million as critical (estimated by Canada). For run sizes below the critical threshold, the U.S. catch of Chum salmon in Areas 7 and 7A will be limited to those taken incidentally to other species and in other minor fisheries, and shall not exceed 20,000. During 2017, following Chapter 6 requirements and pre-season domestic fishery plans, U.S. commercial Chum fisheries were initiated on October 10 and permanently closed on November 18.

Paragraph 10 (d) states that Canada will provide an in-season estimate of Fraser River Chum salmon run size no later than October 22. If that estimate is below 900,000, then the U.S. will limit its fishery to not exceed a catch of 20,000 additional Chum salmon from the day following

notification. An estimated Fraser River Chum salmon run size of 1.29 million was provided by Canada on October 19. Paragraph 10(d) further states that the total catch is not to exceed 130,000 Chum Salmon. Therefore, to ensure that the U.S. chum fishery stayed within its share, fishery managers tracked catches daily relative to share, and the fishery continued through November 18. Total U.S. catch between October 10 and November 18 in Areas 7 and 7A was 118,049 Chum salmon (Table 19). The Non-Treaty gillnet and purse seine fleets were open daily October 10, 11, 14, 15,19, 22, 24, 25, 27, 28, 31 and November 1-11, 15-18. The Treaty Indian gillnet and purse seine fisheries were opened on October 10 and ran continuously through October 26.

Non-Tribal reef net fisheries targeting Coho salmon were conducted from the end of Fraser Panel control in Area 7 (September 24) until October 9 with chum salmon and unmarked coho retention prohibited prior to October 1. Reef nets were open daily through November 11 with a total Chum salmon catch of 5,829 fish.

The total 2017 Chum salmon catch by all gears in Areas 6, 7, and 7A (reported through November 18) was 123,360 (Table 20). Catch distribution, between Areas 7 and 7A, was 82% and 18% respectively. It should be noted that these catch reports may be incomplete as of the date of this report. Additionally, concerns over large catch per unit effort in the second week of the fishery caused fishery managers to be conservative and severely restrict the fishery to stay within the U.S. share. Following these early closures, the U.S. was unable to fish on abundances of Chum large enough to achieve the U.S. share (Table 20). During the fall Chum salmon-directed fisheries in Areas 6, 7 and 7A, there was a reported by-catch of 2,286 Coho, 5 Chinook, and zero Steelhead (Table 20).

Table 20. Preliminary 2017 Chum salmon harvest report for Washington Salmon Catch Reporting Areas 6, 7 and 7A.

	Area 6	Area 7				Area 7A			Area 6,7,7A
Time Periods	GN	PS	GN	RN	Area Total	PS	GN	Area Total	Total
Through 9/24	0	0	0	0	0	0	0	0	0
9/24-9/30	0	0	0	0	0	0	0	0	0
10/1-10/7	0	0	0	3,807	3,807	0	0	0	3,807
10/8-10/14	0	17,534	225	2,344	20,103	8,256	4,059	12,315	32,418
10/15-10/21	58	56,168	894	387	57,449	4,884	1,735	6,619	64,126
10/22-10/28	520	17,042	548	0	17,590	1,685	381	2,066	20,176
10/29-11/4	0	1,050	298	0	1,348	595	85	680	2,028
11/5-11/11	0	0	671	0	671	0	109	109	780
11/12-11/18	0	0	0	0	0	0	25	25	25
Total	578	91,794	2,636	6,538	100,968	15,420	6,394	21,814	123,360
Gear Type Abbreviations: GN=Gill Net; PS=Purse Seine; RN=Reef Net									
10/10- 11/5 By-catch	Coho: 2,286		Chinook: 5		Steelhead: 0				

PUGET SOUND TERMINAL AREA FISHERIES AND RUN STRENGTH

Pre-season forecasts for Chum salmon returns to Puget Sound predicted a fall Chum run size totaling approximately 946,400 fish, with 492,900 Chum predicted to return to Hood Canal and 433,200 predicted to return to South Puget Sound. As of the date of this report, in-season estimates indicate that Chum returns to Puget Sound are generally at or above forecast with some exceptions. In-season run size estimates from the 2017 fall Chum fisheries in Hood Canal and South Puget Sound indicate that both runs are well above forecast. The latest run size estimate for Hood Canal is 1.1 million Chum. Some Puget Sound Chum fisheries are still underway and additional in-season estimates of abundance may occur. As of the date of this report, spawning escapement surveys are in progress for most Puget Sound stocks and therefore escapement estimates are not yet available. Early indications from these surveys do, however, suggest that nearly all stocks will meet escapement goals; although, some central Puget Sound fall Chum stocks appear to be below escapement again this year.

REFERENCES

Pacific Salmon Treaty (PST) Act of 1985. 2008 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

IV. PRELIMINARY REVIEW OF 2017 UNITED STATES FRASER RIVER SOCKEYE AND PINK SALMON

INTRODUCTION

The 2017 Fraser River Panel fishing season was implemented under Annex IV of the Pacific Salmon Treaty (PST) and guidelines provided by the Pacific Salmon Commission to the Fraser River Panel. The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at sockeye (*Oncorhynchus nerka*) and pink (*O. gorbuscha*) salmon bound for the

Fraser River (Figure 40). In partial fulfillment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2017 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and abundance information presented are considered preliminary.

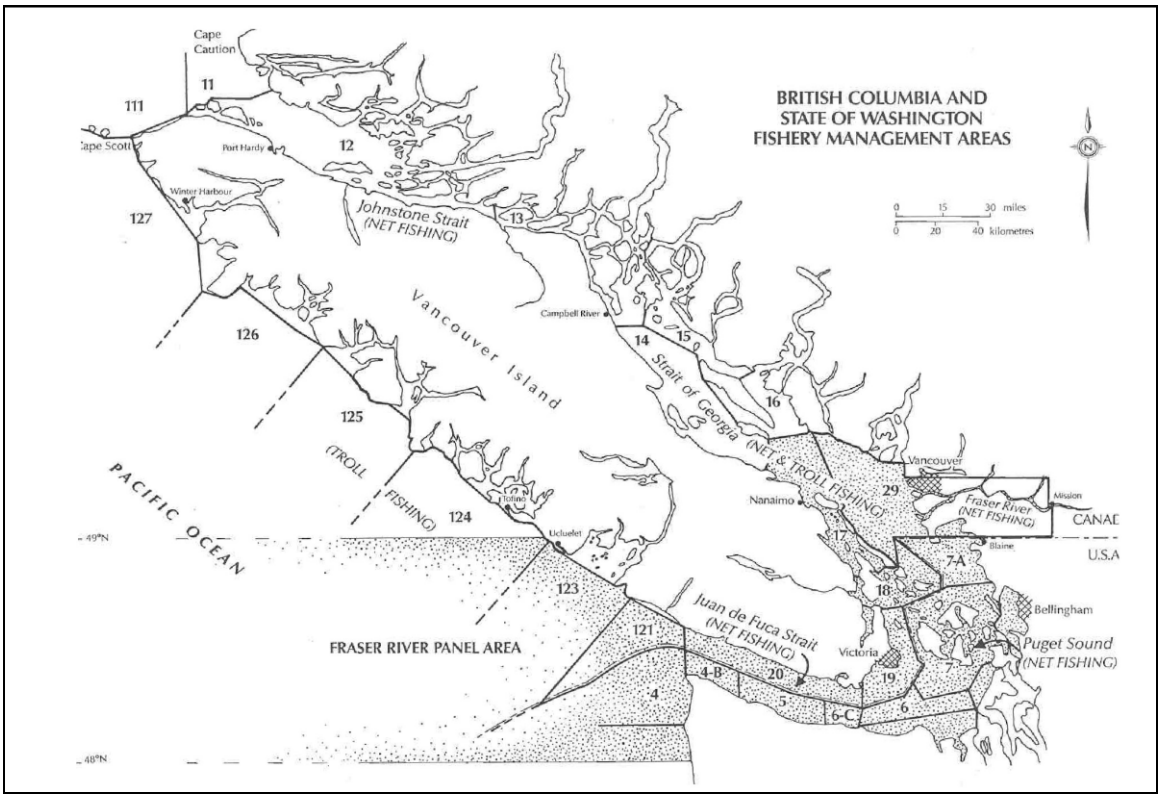


Figure 40. British Columbia and State of Washington Fishery Management Areas, 2017. The shaded area in the figure represents the marine waters managed by the Fraser River Panel.

PRESEASON EXPECTATIONS AND PLANS

Forecasts and Escapement Goals

Pre-season run-size forecasts and escapement goals by run timing group (run) at various probability levels were provided to the Panel by the Department of Fisheries and Oceans, Canada (DFO). Table 21 shows the 2017 pre-season sockeye forecasts based on the 50 percent probability level (p50), which represent the mid-point of the range of possible run sizes for all runs. Table 1 also provides the escapement goals for the sockeye run timing groups based on the pre-season abundance forecasts. The escapement goals for all runs can change in-season as the run-size estimates are updated.

Fraser River pink salmon returns were projected pre-season at 8,693,000 fish, with an escapement goal of 6 million fish.

Table 21. 2017 pre-season Fraser River sockeye forecasts and escapement goals by run timing group.

	Early Stuart	**Early Summer**	**Summer**	**Lates**	**Total**
Forecast of Abundance	99,000	343,000	3,407,000	583,000	4,432,000
Escapement Goal	99,000	137,000	1,375,000	314,000	1,925,000

Northern Diversion Rate

Northern diversion rate is defined as the percentage of Fraser sockeye migrating through Johnstone Strait (rather than the Strait of Juan de Fuca) in their approach to the Fraser River. The preseason forecast for diversion was 51%, which was below the 1990-2016 median diversion rate of 62%. For pink salmon, a preseason northern diversion rate of 50% was adopted based on the correlation between sockeye and pink diversion rates.

Management Adjustments (MA) and Environmental Conditions

Management adjustments (MA) for sockeye salmon reflect the anticipated difference between escapement estimates at Mission (minus catch above Mission) and actual spawning escapements. Adjustments adopted by the Panel are added to the gross escapement goal, effectively increasing the spawner escapement goal for that run timing group. The MAs are modeled using forecasts of environmental conditions and return timing or median historical differences between estimates. Table 22 provides the pre-season projected MAs that were used for planning fisheries in 2017. In-season adjustments use MA models that are based on both measured and forecasted temperatures and discharges or, for Late-run sockeye, upstream migration timing.

Table 22. 2017 pre-season proportional management adjustment (pMA) and corresponding proportional difference between estimates (pDBE) for each run timing group.

Early Stuart		**Early Summer**		**Summer**		**Lates**	
pMA	pDBE	pMA	pDBE	pMA	pDBE	pMA	pDBE
0.89	-47%	0.39	-28%	0.06	-6%	0.92	-48%

Run Timing

Run timing is temporal information about the presence of a salmon stock in an area during a specific time period. Run timing is an important variable when planning fisheries and predicting run size in-season. Area 20 50% dates (the dates when 50% of the run is predicted to have passed through Area 20) were forecast pre-season for the major Fraser River sockeye run groups and shown in Table 23. Because the forecast dates were extremely early relative to historical medians, the Panel adopted adjusted dates that were 2 to 5 days later than the forecast dates.

Table 23. 2017 Area 20 historic 50% run timing dates and updated pre-season timing forecasts in June.

Run Timing Group	**Historic Median Date**	**June Forecast**	**Panel Adopted**
Early Stuart	July 4	June 29	July 1
Early Summer	July 24	July 17	July 20
Summer	August 10	August 2	August 6
Lates	August 18	August 9	August 14
Pink salmon	August 28	August 28	August 28

U.S. Total Allowable Catch (TAC)

Based on the pre-season forecasts, the U.S. Total Allowable Catch (TAC) was established at 279,300 sockeye across all run groups, and 672,000 pink salmon. The TAC available by sockeye run timing group is shown in Table 24.

Table 24. 2017 total U.S. total allowable catch (TAC) by run timing group[1].

Run Timing Group	Pre-season U.S. TAC
Early Stuart	0
Early Summer	20,300
Summer	259,000
Lates	0
Total	279,300

[1] Based on Panel-approved final pre-season model run on July 7, 2017.

Preseason Management Plans

During the pre-season planning process the Panel evaluates and adopts management approaches for Fraser sockeye and pink salmon that address conservation and harvest objectives for each major run timing group. Using the Pacific Salmon Commission (PSC) fisheries planning model, the Panel develops pre-season fishing plans and in-season decision rules with the objective of meeting management goals. Managing Fraser River sockeye salmon involves a trade-off between catching abundant runs and meeting escapement objectives for less abundant runs.

In 2017, the pre-season forecast of ~4.4 million Fraser sockeye resulted in available U.S. TAC in the Early Summer and Summer run timing groups (Table 24), with the majority of TAC (~93%) in the Summer run group. While planning pre-season fishing schedules, the lack of TAC in Early Stuart and Late run sockeye left a narrow window for the U.S. to prosecute fisheries and minimize impacts to Early Stuart and Late run sockeye. U.S. fisheries were planned to commence in mid-July right before the peak of Summer run sockeye and prior to Late run sockeye showing up in abundance. The lack of TAC for the Late run group also delayed the start time modeled for pink-directed fisheries until September.

IN-SEASON MANAGEMENT

In-season, the PSC staff analyzes a variety of information to produce best estimates of northern diversion, management adjustments (MAs), timing, abundance, and harvest by run timing group. Stock identification information (both genetic data and scales), age data, test fishing data, escapement counts past Mission, harvest data, and environmental information are all used to provide these in-season estimates that are critical to Fraser Panel management.

Run Assessment

The final in-season total abundance estimate for sockeye in 2017 (Table 25) was 1,482,000, which was 33% of the pre-season forecast. This represents the second smallest sockeye return to the Fraser River in the last 70 years. Across the four run timing groups, all groups returned well below their preseason forecasts. Early Stuart and Early Summer run sockeye performed similarly with respective in-season run size estimates at 47% and 48% of their pre-season forecasts. The return of Summer-run sockeye was only 31% of the preseason forecast, while Late-run sockeye only returned at 36% of forecast. The return of pink salmon, at 3,616,000 fish, represented 42% of the pre-season forecast. The pink salmon run in 2017 was the second lowest since 1965. Annual average Johnstone Strait diversion rates were 71% for sockeye and 57% for pink salmon.

The timing of 50% of the Fraser sockeye run through Area 20 in 2017 was later than expected across all run timing groups (Table 26). The Early Stuart run arrived 3 days later than expected pre-season (July 4), the Early Summer run arrived 14 days later than expected (August 3), the Summer run arrived 6 days later than expected (August 12), and the Late run arrived 3 days later than expected (August 17). By contrast, timing of Fraser River pink salmon through Area 20 was 10 days earlier than expected based on the pre-season forecast (August 18). Pink salmon timing in 2017 was the earliest on record.

Table 25. Comparison of 2017 pre-season vs. in-season abundance estimates for Fraser River sockeye salmon by run timing group[1].

Run Timing Group	Pre-Season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season / Pre-Season Forecast
Early Stuart	99,000	47,000	47%
Early Summer	343,000	163,000	48%
Summer	3,407,000	1,062,000	31%
Lates	583,000	210,000	36%
Total Sockeye	4,432,000	1,482,000	33%
Pink salmon	8,693,000	3,616,000	42%

[1] As of October 2, 2017.

Table 26. Comparison of 2017 preliminary 50% run timing dates through Area 20 to in-season estimates.

Run Timing Group	Panel Adopted Run Timing Date	In-season 50% Run Timing Date
Early Stuart	July 1	July 4
Early Summer	July 20	August 3
Summer	August 6	August 12
Lates	August 14	August 17
Pink salmon	August 28	August 18

Season Description

The Fraser Panel met twice a week (usually on Tuesdays and Fridays) between July 14 and September 8, 2017 to receive updates on the abundance and timing of the sockeye and pink salmon returns from PSC staff and to review migration conditions in the Fraser River watershed. In-season abundance estimates were considerably lower than pre-season expectations, so U.S. fisheries were limited. In-river environmental conditions were not a major factor affecting

management decisions in 2017. The following summarizes the major decisions related to Fraser sockeye and pink salmon in-season abundance assessments and U.S. fishing during the 2017 season.

July 14, 2017

In-season assessments of the abundance of Early Stuart sockeye indicated that the return was below the p50 forecast, therefore the run size was reduced from 99,000 to 50,000 with a revised Area 20 peak run timing of July 3 (two days later than modeled pre-season). Panel waters closed to commercial salmon fishing.

July 25, 2017

The Fraser River Panel adopted a run size of 166,000 for the Early Summer run (the p25 forecast level), down from 343,000 sockeye modeled pre-season. This eliminated any international TAC available for this group. Panel waters remained closed to commercial salmon fishing.

August 8, 2017

The Panel adopted an Early Stuart estimate of 46,000 sockeye with estimated marine timing of July 4, an Early Summer-run estimate of 125,000 sockeye with median timing of July 31 (11 days later than modeled), and a provisional Summer-run estimate of 1,250,000 sockeye for management purposes. There was no international TAC for the Summer-run at this lower abundance level. Panel waters remained closed to commercial salmon fishing.

August 11, 2017

The Panel officially adopted a Summer-run size of 1,250,000 with median timing of August 14 (8 days later than modeled). Panel waters remained closed to commercial salmon fishing.

August 18, 2017

The Panel adopted a slightly higher Early Summer run size of 150,000 with a peak timing in Area 20 of August 2, and a Late-run run size of 247,000 (the p25 forecast level) with a peak timing estimate of August 18 (four days later than modeled). Panel waters remained closed to commercial salmon fishing.

August 22, 2017

Although there was no international TAC available for Fraser River sockeye, fisheries directed at Fraser River pink salmon were approved by the Panel. The first Panel-approved U.S. commercial fishery for pink salmon was scheduled for August 23 to August 26 for Treaty Indian fishers in Areas 4B, 5, and 6C. A Treaty Indian pink-directed reef net fishery in Areas 7 and 7A was also approved for August 23, 24, and 25. Retention of sockeye was permitted for ceremonial and subsistence (C&S) purposes only.

August 25, 2017

The Panel decreased the Summer-run run size from 1,250,000 to 1,000,000 sockeye with an updated 50% marine timing of August 11.

The Panel approved U.S. Treaty Indian pink-directed net fisheries in Areas 6, 7, and 7A from August 25 to August 26. Also, a Treaty Indian pink-directed reef net fishery in Areas 7 and 7A was approved for August 26. Retention of sockeye was permitted for C&S purposes only.

An All Citizens' pink-directed fishery with non-retention of sockeye was also approved for reef nets in Areas 7 and 7A from August 25 and August 26.

August 28, 2017

The Panel adopted an interim pink salmon run size for management purposes of 4,800,000 (down from 8,693,000) with a 50% peak migration timing date through Area 20 of August 24 (four days earlier than forecast). U.S. TAC at this lower run size was 97,000 pink salmon.

The Panel approved the following pink-directed fisheries:

Treaty Indian fisheries in Areas 4B, 5, and 6C from August 29 to September 1; Treaty Indian net fishing in Areas 6, 7, and 7A from August 30 to August 31; and Treaty Indian reef net fishing in Areas 7 and 7A on August 29 and 30. Retention of sockeye was permitted for C&S purposes only

All Citizens' fisheries with non-retention of sockeye were approved for purse seines and gillnets in Areas 7 and 7A for August 29; and for reef nets on August 29 and 30.

August 31, 2017

The Panel approved additional U.S. fisheries directed at Fraser pink salmon in Panel waters.

Treaty Indian fisheries in Areas 4B, 5, and 6C, and Areas 6, 7, and 7A were approved from September 1 to September 5, with retention of sockeye for C&S purposes only.

All Citizens' fisheries in Areas 7 and 7A were also approved from September 1 to September 5. Retention of sockeye salmon was prohibited.

When it was determined that the U.S. fleet had exceeded available pink salmon TAC on September 3, all Panel-approved U.S. fisheries were closed by emergency order.

September 5, 2017

The U.S. informed Canada for concurrence prior to opening small portions of Areas 7 and 7A for both Treaty Indian and All Citizens' fisheries from September 6 to September 12. These fisheries were opened to facilitate removal of Atlantic salmon (*Salmo salar*), a non-native species that escaped from net pens operated by Cooke Aquaculture in Deepwater Bay, Cypress Island. Retention of sockeye and pink salmon were prohibited.

September 8, 2017

The Panel adopted final in-season run-size estimates for all sockeye management groups and pink salmon: Early Stuart – 47,000 sockeye with July 4 timing; Early Summer – 165,000 sockeye with August 4 timing; Summer – 1,044,000 sockeye with August 11 timing; and Late – 231,000 sockeye with August 16 timing. The Panel also adopted a pink salmon run size of 3,700,000 with 50% marine timing through Area 20 of August 19.

Table 27 summarizes changes to sockeye and pink salmon run sizes made by the Fraser Panel during the 2017 season.

Table 27. Summary of changes to Fraser River sockeye and pink run size estimates made by the Fraser Panel during the 2017 season.

Meeting Date	Group	Change Made
July 14, 2017	Early Stuart	decreased to 50,000
July 25, 2017	Early Summer	decreased to 166,000
August 8, 2017	Early Stuart	decreased to 46,000
	Early Summer	decreased to 125,000
August 11, 2017	Summer	decreased to 1,250,000*
August 18, 2017	Early Summer	increased to 150,000
	Late	decreased to 247,000
August 25, 2017	Summer	decreased to 1,000,000
August 28, 2017	Pink	decreased to 4,800,000*
September 5, 2017	Pink	decreased to 4,500,000*
September 8, 2017	Early Stuart	increased to 47,000
	Early Summer	increased to 165,000
	Summer	increased to 1,044,000
	Late	decreased to 231,000
	Pink	decreased to 3,700,000

*Provisional adjustment for management purposes.

HARVEST

U.S. harvest opportunities for sockeye salmon in 2017 were expected to be limited going into the season and in-season abundances estimates were continually downgraded from pre-season expectations throughout the season with no sockeye available for U.S. TAC after the decreases to the run sizes that the Panel adopted at the July 25 and August 11 meetings. The limited sockeye harvest that occurred was in Treaty Indian C&S fisheries (Table 28). There were no All Citizens' fishery openings directed at Fraser sockeye in 2017.

Between August 23 and September 5, the U.S. caught a total of 1,421 Fraser sockeye and 105,956 Fraser pink salmon (Table 29). During this period, Treaty Indian commercial fisheries were open for a total of 10 days in Areas 4B, 5, and 6C, seven days for net fisheries in Areas 6, 7, and 7A, and 9 days for reef nets in Areas 7 and 7A. All Citizens' commercial fisheries in Areas 7 and 7A were open for gillnet and purse seine fisheries for four days and seven days for reef nets.

U.S. Treaty Indian and All Citizen fisheries re-opened September 6 through September 12 in small portions of areas 7 and 7A to facilitate the removal of Atlantic salmon but did not retain any sockeye or pink salmon. No other fisheries were authorized in Panel waters prior to relinquishment by the Panel.

Table 28. Preliminary estimate of 2017 U.S. catches of Fraser River sockeye salmon in Panel area waters.

	Treaty Indian	**All Citizens'**
Ceremonial and Subsistence (all areas)	1,421	0
Commercial Catch in Areas 4B/5/6C	0	0
Commercial Catch in Areas 6/7/7A	0	0
Total Catch	1,421	0
% of U.S. Catch	100.0%	0

Table 29. Preliminary estimate of 2017 U.S. catches of Fraser River pink salmon in Panel area waters.

	Treaty Indian	**All Citizens'**
Ceremonial and Subsistence (all areas)	26	0

Commercial Catch in Areas 4B/5/6C	0	0
Commercial Catch in Areas 6/7/7A	94,989	10,941
Total Catch	95,015	10,941
% of U.S. Catch	89.7%	10.3%

POST-SEASON REPORT FOR THE 2017 CANADIAN TREATY LIMIT FISHERIES

Fisheries and Oceans Canada
Pêches et Océans Canada

Canada

TABLE OF CONTENTS

1 INTRODUCTION

The chapters in Annex IV of the Pacific Salmon Treaty outline the joint conservation and harvest sharing arrangements between Canada and the United States of America (U.S.) for key stocks and fisheries subject to the Treaty. On December 23, 2008, Canada and the U.S. ratified new provisions for five chapters under Annex IV of the Pacific Salmon Treaty. These chapters came into effect on January 1, 2009 and remain in force until 2018. Chapter 4, which covers Fraser River Sockeye and Pink salmon, was revised in July 2014 and these revisions cover fisheries in 2014 through 2019. All management regimes under Annex IV continue to be implemented by Fisheries and Oceans Canada (DFO) for the 2017 season.

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, escapements (where available and appropriate) and catch results by species. The expectations, management objectives, catches and escapements focus on those stocks and fisheries covered by the Pacific Salmon Treaty.

Annually, DFO releases a Salmon Outlook document which is referenced in various sections of this report; this document provides an indication of salmon production, and associated fishing opportunities by geographic area and species stock groups called an Outlook Unit for the coming season.

The catch information reported in this document provides the best information available to September 2018. The catches are based on in-season estimates (hailed statistics); on-grounds counts by DFO, logbooks, dockside tallies, landing slips (First Nation fisheries), fish slip data (commercial troll and net), creel surveys and observers (recreational and commercial). Appendix 1 summarizes 1997-2017 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty. All Southern commercial, recreational, First Nations, Excess Salmon to Spawning Requirements (ESSR) and test fisheries are reported in the Appendices at the end of this document. Some of the tables may be incomplete as all of the catch data is not available at this time.

2 TRANSBOUNDARY RIVERS

2.1 STIKINE RIVER

Following the 2017 Pre-Season meeting of the Transboundary Panel, Canada developed its 2017 domestic fishing strategy for Stikine River salmon fisheries based on the catch sharing and management arrangements outlined in Annex IV, Chapter 1, and Paragraph 3 of the Pacific Salmon Treaty (PST). The 2017 Canadian Stikine River salmon fishery management approach was designed to achieve the spawning escapement targets and the following harvest objectives: 1) to harvest 50% of the total allowable catch (TAC) of Stikine River Sockeye salmon in existing fisheries; 2) to allow additional harvesting opportunities in terminal areas for enhanced Sockeye that were surplus to spawning requirements; and 3) to harvest up to 5,000 Coho salmon in a directed Coho fishery. A pre-season forecast of 18,300 Chinook was below the PST threshold run size of 28,100 which did not allow for a directed Chinook fishery in 2017. Due to concerns over run abundance and escapement, the Chinook assessment fishery was not prosecuted in 2017.

The 2017 Canadian Stikine River commercial fishing season opened on June 26 (statistical week 26) and ended September 5 (statistical week 36). From statistical weeks 26 through 34 a directed Sockeye fishery was prosecuted followed by a directed Coho fishery which ended in statistical week 36.

Fishing gear employed within the 2017 season was limited to one 135-metre (443 ft.) gill net per licence holder. The maximum mesh size allowed was 140 mm (5.5”) through August 20, after which time the maximum mesh size was increased to 204 mm (8”). The lower Stikine commercial fishing zone covered the area from the international (U.S. / Canada) border upstream to near the confluence of the Porcupine and Stikine Rivers, and also included the lower 10 km (6 mi.) reach of the Iskut River.

In the upper Stikine River commercial fishery, located upstream from the Chutine River, fishing periods generally mirrored those in the lower Stikine River commercial fishery, but lagged by one week. Each commercial fishery licence holder was permitted the use of one net. As in past years, the commercial fishing area was extended upstream to the mouth of the Tuya River. This action was taken in order to provide for a terminal fishing opportunity on Tuya River bound enhanced Sockeye salmon, specifically at sites located upstream of the Tahltan River. For the ninth consecutive year, no commercial fishing activity occurred at this site. The Tuya run, which consists entirely of Sockeye produced from the Canada-U.S. Stikine enhancement program, has no spawning escapement requirement since these fish are unable to return to Tuya Lake due to several velocity barriers located in the lower reach of the Tuya River. Tuya Sockeye were released into Tuya Lake as young of the year juveniles.

The Canadian First Nation Food, Social, and Ceremonial (FSC) fishery located near the community of Telegraph Creek, British Columbia (BC) was active from the last week in May to the third week in August, with no time or gear restrictions imposed in 2017. Bilateral meetings with the Tahltan/Iskut First Nations and DFO were held which highlighted the need to conserve

Chinook salmon. FSC fishery community buy-in was significant and efforts were implemented to minimize Chinook salmon harvest.

Canadian Recreational fishery effort was effectively non-existent in 2017 as area, retention, and size restrictions were in place for the entire Chinook season to prohibit the harvest of PST-defined "Treaty" Stikine River Chinook salmon >659 mm in 2017.

2.1.1 CHINOOK SALMON

The pre-season forecast of 18,300 large (i.e. fish with a mid-eye to fork length of >660mm (~26") or a fork length of >735mm (~29")) Chinook salmon, as developed by the Canada / U.S. Technical Committee for the Transboundary Rivers (TCTR) did not allow for a directed Chinook fishery in 2017. A pre-season forecast run size of <28,100 precludes Canada or the U.S. from scheduling a directed fishery, whereas an in-season run size of >24,500 large Chinook is required to permit a targeted Chinook fishery. Specific management provisions were implemented within all Canadian fisheries to minimize the likelihood of interception of Chinook salmon in 2017.

The 2017 total combined gill net catch of Chinook salmon in the First Nation and commercial fisheries included 593 large Chinook salmon and 788 jacks. This was well below the 2007 - 2016 average of 4,014 large Chinook salmon and 1,145 jacks, while the Sockeye test fishery resulted in the interception (harvest) of 10 large Chinook and 23 jack Chinook salmon compared to the 2007-2016 averages of 19 large Chinook salmon and 18 jack Chinook salmon. No Chinook salmon were harvested within the 2017 sport fishery as retention was prohibited. The 2007-2016 average harvest of Chinook salmon in the Canadian Stikine River sport fishery is 41 large and 12 jack Chinook salmon.

The post-season estimate of the terminal run was approximately 8,100 large Chinook salmon, including an in river run size based on mark-recapture data of approximately 7,900 large Chinook salmon and a total U.S. catch estimate of approximately 200 large Chinook salmon. Accounting for the total Canadian catch of approximately 600 large Chinook salmon (includes commercial, First Nation, recreational, and test catches), the total system-wide spawning escapement was estimated at approximately 7,200 large Chinook salmon. Due to favourable water flow conditions in 2017, the adult salmon migration barrier resulting from the 2014 Tahltan River rockslide is not believed to have had a detrimental effect on Chinook salmon escapement. The Chinook salmon escapement estimate of 7,200 is 59 % below the target S_{MSY} escapement goal of 17,400 large Chinook salmon and did not achieve the escapement goal range of 14,000 to 28,000 large Chinook salmon. The post-season run size of approximately 8,100 fish did not result in any allowable harvest allocations to Canadian or U.S. directed fisheries.

The 2017 Chinook salmon escapement enumerated at the Little Tahltan weir was 428 large and 311 jack Chinook salmon. The escapement of large Chinook salmon in the Little Tahltan River was well below both the S_{MSY} estimate of 3,300 fish and the lower end of the Canadian management escapement goal range of 2,700-5,300 large Chinook salmon. The contribution of the Little Tahltan Chinook salmon was only 6% of the total Stikine River escapement in 2017. Historically the contribution of this stock was approximately 14% of the total terminal abundance. 2017 is the eleventh consecutive year that the lower end of the Canadian management escapement objective was not achieved for Little Tahltan Chinook salmon.

In addition to the mark-recapture study, the Little Tahltan weir project and aerial surveys, genetic samples were collected on a weekly basis from Chinook salmon incidentally caught in U.S. marine fisheries. These data were used to determine the total U.S. interception of Canadian-origin Stikine River Chinook salmon while genetic samples collected from in-river fisheries were used to assess stock specific run timing and 2017 run size.

2.1.2 SOCKEYE SALMON

The forecast for Stikine River Sockeye salmon, as developed by TCTR, was for a terminal run size[1] of 185,000 fish including: 110,000 Tahltan Lake origin Sockeye salmon (58,000 wild and 52,000 enhanced); 24,000 enhanced Tuya Lake Sockeye; and 51,000 non-Tahltan wild Sockeye salmon, which constituted an above average forecast. For comparison, the previous 10-year average (2007-2016) terminal run size was approximately 168,000 fish.

The combined harvest of 2017 Stikine River Sockeye salmon in Canadian commercial and First Nation gill net fisheries was 41,749, which is below the 2007 - 2016 average of 49,753 fish. The lower Stikine River commercial fishery harvested 32,849 Sockeye, while the upper Stikine River commercial and First Nation fisheries harvested a total of 322 and 8,578 Sockeye salmon respectively. The estimate of the total contribution of Sockeye salmon from the Canada/U.S. Stikine Sockeye enhancement program to the combined Canadian harvest was 16,615 fish (or 40 % of the total harvest). In addition 1,908 Sockeye salmon were harvested in the stock assessment test fishery located near the U.S/ Canada border.

A total of 19,241 Sockeye salmon passed through the Tahltan Lake weir in 2017, which is 26 % below the average of 26,116 fish but within the escapement goal range of 18,000 to 30,000 fish. An estimated 10,448 fish (54 %) of Sockeye salmon originated from the bilateral Stikine Sockeye enhancement program, which was above the 36 % contribution observed in smolts leaving the lake in 2014, the principal smolt year contributing to the 2017 return. A total of 2,909 Sockeye salmon were collected for broodstock to support the Stikine Sockeye enhancement program while no fish were removed for stock identification purposes (ESSR). Overall, 16,332 Sockeye salmon successfully migrated into Tahltan Lake to spawn in 2017.

The total estimated run size of 65,873 Tahltan Lake Sockeye was approximately 40 % below the pre-season expectation of 110,000 fish.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock identification, test fishery and in-river commercial catch and effort data. The average of the test fishery and the commercial fishery catch-per-unit of effort (CPUE), which operated over the full duration of the run, were used as the principal tool in assessing the spawning ground escapements of non-Tahltan Lake and the Tuya Sockeye stock groupings. Based on the run reconstructions generated from the test and commercial fishery CPUE, the escapement estimates for 2017 were 15,385 non-Tahltan and 2,617 Tuya Sockeye salmon. The non-Tahltan spawning escapement estimate was below the escapement goal range of 20,000 to 40,000 and was 37%

[1] Terminal run excludes U.S. interceptions that occur outside Districts 108 and 106.

below the 10 year average of 24,409 fish. The estimated return of Tuya Lake Sockeye salmon was below the recent 10 year average of 12,556 fish. These fish do not contribute to the natural production of Stikine River Sockeye salmon due to migration barriers that obstruct entry to Tuya Lake.

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock identification data in the lower river and estimated harvests of Stikine River Sockeye salmon in U.S. terminal gill net fisheries, the post-season estimate of the terminal Sockeye run size is approximately 104,763 fish. This estimate includes 65,873 Tahltan Lake origin fish, 8,754 Tuya Lake origin fish, and 30,136 Sockeye of the non-Tahltan stock aggregate. The 2017 Stikine River Sockeye salmon run was below the 2007 - 2016 average terminal run size of ~168,000 Sockeye salmon and is approximately 43% below the preseason forecast of 185,000 fish.

Based on the post-season run size estimate, Canada was allocated an allowable catch of 22,987 Stikine River Sockeye salmon. The total Canadian fishery harvest of Stikine River Sockeye salmon in 2017 was 41,749.

2.1.3 COHO SALMON

The total Canadian fishery harvest of Coho salmon in 2017 was 5,502. 4,983 Coho salmon were harvested during the directed Coho fishery in statistical weeks 35-36, while the total 2017 Canadian fishery harvest was above the recent 10 year average of 4,887 fish.

A Coho salmon test fishery was not conducted in 2017. Incidental catches and CPUE taken in the Sockeye salmon test and commercial fisheries were below average. The CPUE observed in the targeted Coho salmon fishery was above average for statistical weeks 35 and 36. Aerial surveys of six index spawning sites yielded above average counts observed under excellent viewing conditions.

2.1.4 JOINT SOCKEYE SALMON ENHANCEMENT PROGRAM

Joint Canada/U.S. enhancement activities continued from 2016 through 2017 with the collection of Sockeye salmon eggs from Tahltan Lake in British Columbia, transportation of eggs to the Snettisham Hatchery in Alaska where they were raised to fry, and subsequent transportation and release at out-plant sites in British Columbia.

Through May 23rd to 28th 2017 approximately 3.1 million fry were out-planted into Tahltan Lake. No fry were released into Tuya Lake. The fry originated from the 2016 egg-take and were mass-marked at the Snettisham hatchery with thermally induced otolith marks. Green egg to released fry survival was approximately 59%. Approximately 174,000 Tahltan Lake origin fry reared at the Snettisham hatchery was lost due to Infectious Hematopoietic Necrosis virus (IHNv). Sockeye salmon enhancement programs have been subject to IHNv outbreaks before as the disease is naturally occurring in Stikine Sockeye stocks.

In the fall of 2017, approximately 3.9 million Sockeye salmon eggs slightly more than the target of 3.7 million were collected at Tahltan Lake and transported to Snettisham Hatchery in Alaska.

Canada determined the egg take target based on escapement evaluation results inseason. As in previous years additional efforts beyond beach seining were employed to acquire brood stock including angling and temporarily holding female brood stock to mature in floating net pens in the lake.

2.2 TAKU RIVER

Following the 2017 Pre-Season meeting of the Transboundary Panel, Canada developed its 2017 domestic fishing strategy for Taku River salmon fisheries based on the catch sharing and management arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon Treaty (PST). Accordingly, the Canadian strategy incorporated specific conservation considerations and contained the following harvest objectives: 1) harvest 20% of the TAC of Taku River Sockeye salmon (adjusted as necessary according to projections of the number of enhanced Sockeye), plus the projected wild Sockeye in-river escapement in excess of 1.6 times the spawning escapement goal; 2) to harvest enhanced Taku River Sockeye salmon incidentally to wild Sockeye salmon; 3) to harvest 5,000, plus any excess over the escapement target of 70,000 Coho salmon in a directed Coho salmon fishery, dependent on in-river run size projections; and 4) to consider a directed Chinook salmon fishery, dependent on in-river run size projections.

The 2017 commercial fishing season on the Taku River opened on June 27 (statistical week 26), and closed on September 13 (statistical week 37). Fishing area and gear restrictions were as per recent years, and incorporated the maximum gill net length of 36.6 metres, established in 2008 for drift gill nets and in 2009 for set gill nets.

The Taku River commercial fishing grounds in Canada consist of the mainstem of the river from the international border upstream approximately 18 km (11 miles), to a geological feature known locally as Yellow Bluff. Almost all fishing activity takes place in the lower half of this area, downstream of the Tulsequah River.

The First Nation FSC fishery is primarily located in the lower Taku River in the same area as the Canadian commercial. Small numbers of fish are also harvested on the lower Nakina River and at the outlet of Kuthai and King salmon lakes. There were no time or gear restrictions imposed on the First Nation fishery in 2017.

Canadian Recreational fishery effort was effectively non-existent in 2017 as area, retention, and size restrictions were in place for the entire Chinook season to prohibit the harvest of PST-defined “Treaty” Taku River Chinook salmon >659 mm in 2017.

2.2.1 CHINOOK SALMON

The bilateral pre-season forecast was for a terminal run of 13,300 large Chinook salmon, approximately 8% below the previous 10-year average of 26,900 fish. The forecast generated by the Taku River Chinook salmon model was 18,100 fish. However, due to persistent overestimation in recent years coupled with a pattern of decline in Chinook salmon stocks in the North Pacific, the forecast was reduced by 36%. A run size of 13,300 fish was well below the S_{MSY} escapement goal of 25,500 fish (below the lower end of the escapement goal range of 19,000 – 36,000), and as a result, there was no allowable catch (AC) for either the U.S. or Canada and therefore, neither country prosecuted a directed Chinook salmon fishery. Additionally, significant efforts were made in all other fisheries to avoid the incidental harvest of Chinook salmon. For 2017, the Chinook assessment fishery, which has an allocation of 1,400 large Chinook, was not conducted to allow for the maximum number of Chinook salmon to pass to the spawning grounds.

The catches of large Chinook salmon in the Canadian fisheries were: 0 in the test/assessment fishery; 246 large Chinook salmon captured incidentally in the directed commercial Sockeye and Coho salmon fisheries; 4 large Chinook salmon in the First Nation FSC fishery; and 0 large Chinook salmon in the recreational fishery. The total base level and test/assessment fishery harvest of 250 large Chinook salmon was well below the allowance of 2,900 fish.

The bilaterally agreed Taku River large Chinook spawning escapement estimate for 2017 was approximately 8,800 fish which was well below the S_{MSY} target of 25,500 and the goal range of 19,000 to 36,000. The 2007-2016 average spawning escapement was 22,273 large Chinook (which was associated with a higher target until 2009). During aerial surveys of five index areas, a total of 923 large Chinook salmon were observed; this was 72% below the average of 3,242 and the lowest count on record (surveys began in 1975).

The Canadian catch of large Chinook was 92% below the 10-year average of approximately 3,100 fish (excluding test/assessment fisheries). The 2017 harvest of small Chinook was 119 fish (88 commercial and 31 First Nation FSC), 77% below the 10-year average of 514 fish.

2.2.2 SOCKEYE SALMON

The Canadian pre-season run outlook for wild Sockeye salmon was 198,000 fish, approximately 13% above the previous 10-year average total run size of 176,000 fish. In addition, approximately 19,400 adult Sockeye salmon of Tatsamenie Lake origin were expected to return from fry out plants associated with the Canada/U.S. joint Taku Sockeye salmon enhancement program. The forecasted return of enhanced Tatsamenie Lake origin Sockeye salmon was 126% above the average return of 8,600 fish.

The Canadian Sockeye salmon catch was 30,438 fish, of which 30,209 were taken in the commercial fishery, 229 in the First Nation FSC fishery, and 0 in assessment/test fisheries. This harvest was 37% above the 10-year average total of 22,265 fish, with the contribution of Sockeye salmon from the bilateral enhancement program estimated at 2,827 fish (9% of the total Canadian catch).

To reduce incidental harvest of Chinook salmon, the directed Sockeye salmon fishery commenced 10 days late on June 27 (SW 26). Additionally, the use of set nets was not permitted and fishers were encouraged to release all healthy large Chinook salmon in the drift net fishery. The maximum permissible mesh size in the first four weeks of the directed Sockeye salmon fishery was 140 mm (5.5") which was intended to reduce the gilling of large Chinook and permit release. Projections of the total wild Sockeye salmon run size, TAC, and total escapement were made frequently throughout the fishing season. As in past years, projections were based on the joint mark-recapture program, the estimated catch of Taku River Sockeye in U.S. fisheries, the catch in the Canadian fishery, and historical run timing information. Projections in 2017 ranged from 99,000 in statistical week 28 (July 9-15) to 141,000 in statistical week 31 (July 30-August 5). The post-season estimate of run size is 213,426 fish (comprising 199,789 wild Sockeye and 13,637 enhanced Sockeye). Subtracting the escapement target of 75,000 from the wild run of approx. 200,000 fish, resulted in a TAC of approximately 125,000 wild fish. The Canadian allowable catch, based on a 21% harvest share (which in turn is associated with an enhanced return of 5,001 to 15,000 fish), was 26,200 wild fish; the actual catch was 27,552 wild fish, representing 22% of the TAC of wild fish.

The estimated spawning escapement of wild Sockeye salmon in the Canadian section of the Taku River was 103,730 fish which was above the target range of 71,000 to 80,000 fish. The escapement is 3% above the 10-year average of 101,035 fish. Based on weir counts, escapements to the Kuthai, Little Trapper, Tatsamenie and King Salmon lakes were 299, 6,552, 27,237, and 439 Sockeye salmon, respectively. Escapements to all the lakes were below average in 2017 with the exception of Tatsamenie Lake which was well above average.

2.2.3 COHO SALMON

The catch of 7,802 Coho salmon (7,726 commercial and 76 First Nation FSC) was 30% below the 10-year average of 11,142 fish. The catch during the directed commercial/assessment Coho salmon fishery, i.e. after statistical week 33, was 4,879fish. A live-release assessment fishery was implemented in 2017 after Canada's AC (5,000) was exhausted, catching and releasing a total of 686 Coho. Based on mark-recapture data, the bilateral estimate of the run into the Canadian section of the drainage is 65,670 fish. In accordance with PST harvest arrangements for the 2017 Taku River Coho salmon season, at a run size of this magnitude, 5,000 Coho salmon were harvested assessment purposes starting in statistical week 34. The post-season spawning escapement estimate is 57,868 fish, 34% below the previous 10-year average of 88,207 fish. The

2017 escapement was below the target of 70,000 but within the goal range of 50,000 to 90,000 fish.

2.2.4 JOINT SOCKEYE ENHANCEMENT

Joint Canada/U.S. enhancement activities continued from 2016 through 2017 with Sockeye salmon fry hatched at Snettisham Hatchery in Alaska transported back to Tatsamenie Lake, British Columbia (where these fish were collected as eggs in 2016).
Approximately 68% of the 1.8 million Sockeye salmon eggs collected in 2016 from Tatsamenie Lake survived to the fry stage at the Snettisham Hatchery in Alaska. No losses were experienced from Infectious Hematopoietic Necrosis virus (IHNv) in 2016. Sockeye salmon enhancement programs have been subject to IHNv outbreaks before and while unfortunate the losses are within normal occurrence levels.

Between May 28 and June 20, 2017 approximately 1.2 million emergent Sockeye salmon fry were out-planted into Tatsamenie Lake. In addition, as part of an onshore extended rearing project, approximately 183,000 fed fry were released into onshore rearing tanks and a trial net rearing pen. A bilateral decision was reached inseason to release the captive fry into lake net pens for rearing due to the loss of the water source for onshore rearing troughs. Net pen reared fry were released at 3.8 grams on July 28. The Sockeye salmon fry held in one of the net pens were confirmed to have contracted IHN and was destroyed (38,000 fry). Smolt production for 2017 was slightly below average with an estimate of 295,000 coming off a weak brood year. A breakdown of the origin of the smolts to evaluate annual release strategies is underway pending otolith results.

No eggs were collected from King Salmon Lake in 2017 for enhancement purposes.

For 2017, the agreed bilateral Taku River enhancement production plan (TEPP) identified collection of up to 2.0 million Sockeye salmon eggs from Tatsamenie Lake and 250,000 eggs from Little Trapper lake for transport to Snettisham Hatchery in Alaska for incubation and thermal marking. Approximately 2.0 million Sockeye salmon eggs were collected from Tatsamenie Lake. Eggs were collected from Little Trapper in September in the amount of 290,000. The resulting fry will be released to Trapper Lake, upstream of a barrier, to establish a small escapement of salmon (approximated at 250 adults) for barrier passage evaluation beginning in 2020. Barrier removal project plans were established in 2016 as part of a 2016 Northern Fund project and are ongoing in support of a potential Sockeye enhancement program for Trapper Lake.

2.3 ALSEK RIVER

Although catch sharing provisions for Alsek River salmon stocks between Canada and the U.S. have not yet been specified, Annex IV of the Pacific Salmon Treaty calls for the development and implementation of cooperative abundance-based management plans and programs for Alsek River Chinook and Sockeye salmon. In 2013, escapement goal ranges for Alsek River Chinook and Sockeye salmon were recommended by the Transboundary Panel, these are: 3,500 to 5,300 Chinook and 24,000 to 33,500 Sockeye salmon. Additionally, the escapement targets were revised for Klukshu River Chinook and Sockeye salmon, these are: 800-1,200 Chinook and 7,500-11,000 Sockeye. The principal escapement-monitoring tool for Chinook, Sockeye, and Coho salmon stocks on the Alsek River is the Klukshu weir, in operation since 1976 by DFO in cooperation with the Champagne-Aishihik First Nation (CAFN).

Total drainage abundance programs are being investigated as part of the development of abundance-based management regimes and to accurately assess whether the escapement goals for Alsek River Chinook and Sockeye salmon stocks are appropriate and achievable. At this time, there are no programs in place to estimate the drainage-wide Coho salmon escapement. A large and variable proportion of the escapement of each species is enumerated at the Klukshu River using video enumeration techniques. Current escapement monitoring programs include the Klukshu River, Village Creek Sockeye enumeration, and post-season run reconstructions using genetic stock identification analyses which allow for annual comparisons of escapement indices. The most reliable long-term comparative escapement index for Alsek River drainage salmon stocks is the Klukshu River count.

The harvest estimate for the 2017 Canadian First Nation FSC fishery was 10 Chinook, 584 Sockeye and zero Coho salmon. The recent average harvest in the Canadian First Nation FSC fishery is 60 Chinook, 1,108 Sockeye, and 4 Coho salmon. Catch estimates for the Tatshenshini sport fishery were an estimated 64 Chinook salmon retained, and 60 Sockeye salmon retained. Fewer than 20 Coho salmon were harvested in the sport fishery. Retention of Chinook salmon was not permitted after July 28th as inseason projections suggested that the escapement objectives would not be met. Additionally, effective September 1st, Sockeye retention was not permitted as run projections based on the Klukshu River weir indicated that the count would fall below the minimum escapement needs.

The 2017 weir count and escapement estimates for Klukshu River Sockeye salmon were 3,889 and 3,711 fish, respectively. The count of 1,087 early run fish (count through August 15) was below the average of 2,775 as was the count of 2,802 late run fish, with an average of 8,319. The total escapement of 3,711 fish was below the lower end of the escapement goal range of 7,500 to 11,000 fish. The Sockeye salmon count at Village Creek was 240 fish; the average is 1,900 fish.

The most reliable comparative Chinook salmon escapement index for the Alsek River drainage is considered to be the Klukshu River weir count. The Chinook salmon weir and escapement estimate in 2017 was 448 fish, below the average of 1,162 fish. The 2017 escapement estimate of 443 was below the lower end of the escapement goal range of 800 to 1,200 Klukshu Chinook salmon.

The Klukshu River Coho salmon weir count was 966. The 2017 count, as in past years, is not considered a complete indicator of run strength as the weir is removed prior to the end of the Coho salmon run to the Klukshu River.

3 NORTHERN BC CHINOOK AGGREGATE ABUNDANCE-BASED MANAGEMENT (AABM) FISHERIES

3.1 OBJECTIVES AND OVERVIEW

3.2 STOCK STATUS

The pre-season abundance index for North Coast BC troll and Haida Gwaii sport fisheries in 2017 was 1.15, which permitted a total allowable catch of 149,500 Chinook salmon in these fisheries. Estimates indicate a total catch of 143,330 Chinook salmon; 97,730 caught in commercial troll fisheries and 45,600 caught in sport fisheries.

3.3 RECREATIONAL FISHERIES

Sport fishing was open with a daily limit of two Chinook per day and a possession limit of four. An estimated 45,600 Chinook were caught in the Haida Gwaii (Queen Charlotte Islands) sport fishery. A minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

3.4 COMMERCIAL FISHERIES

AABM Chinook releases from commercial troll fisheries included 10,706 legal sized fish and 23,412 sublegal sized fish. AABM Chinook releases from sport fisheries included 28,724 fish. Virtually all sport releases in AABM areas are legal sized.

The North Coast BC troll fishery was opened for Chinook fishing from June 21 to August 4 and from August 25 to September 30. The entire 2017 Northern BC troll fishery was conducted under a system of individual transferable quotas. The size limit was 67 cm and barbless hooks and revival boxes were mandatory. No troll test fisheries were conducted in the North Coast of BC in 2017.

4 NORTHERN BC CHINOOK INDIVIDUAL STOCK-BASED MANAGEMENT (ISBM) FISHERIES

4.1 OBJECTIVES AND OVERVIEW

Fisheries included in this category are commercial net fisheries throughout north and central BC, marine sport fisheries along the mainland coast and freshwater sport, and First Nations FSC fisheries in both marine and freshwater areas. The PST obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

4.2 STOCK STATUS

Since assessments of the ISBM fisheries are relative to the escapements achieved in the Chinook indicator stocks, a brief overview of the 2017 returns is provided. Northern BC terminal runs to the Nass and Skeena Rivers declined significantly in 2016 and 2017 after modest improvements in 2015. The 2017 estimates are the lowest observed since the signing of the Pacific Salmon Treaty. Chinook escapements to the upper Nass River are 7,455 (based on mark-resight method) or 4,419 (based on the usual stratified estimate). Both estimates are well below previous observations. Skeena River Chinook escapements were approximately 17,413. Atnarko River Chinook escapements were estimated at 11,479 down from the record return of 57,615 Chinook salmon in 2015.

A total of 375 large Chinook and 163 jacks were caught in the Tyee Test fishery on the Skeena River. The 2017 Chinook catch was the lowest catch by the test fishery since 1995. Since 1984, the lowest Chinook catches at the Tyee Test Fishery have been in 1995, 2016 and 2017

4.3 FIRST NATIONS FSC FISHERIES

Catches by First Nations in the North Coast exceeded 10,064 Chinook in 2017. Nisga'a and Gitanyow catches from the Nass River were 3,708 Chinook. Catches by First Nations fisheries in the Skeena River were estimated at 6,356 Chinook in 2017, almost double the 2016 estimates. Estimates of First Nations catches on Haida Gwaii were not provided.

Catches by First Nations in Areas 6 and 7 of the Central Coast were not available at the time of this report. The First Nations' non-tidal catch in Area 8 was 1,907 Chinook from the Atnarko River. No Chinook catches were reported by First Nations in Rivers Inlet or Smith Inlet (Areas 9 and 10).

4.4 RECREATIONAL FISHERIES

4.4.1 RECREATIONAL – TIDAL

Estimates for tidal sport catches near the mainland coast of Northern BC were 10,108 from a creel survey conducted in Areas 3 and 4 in 2017. The 2017 catches in the mainland sport fishery in Areas 5 and 6 were not available at the time of writing. The estimate from a freshwater creel survey conducted in the Skeena River below Terrace in 2017 was 1,144 large Chinook and 1,002 jacks.

Tidal sport catch from lodges operating in the Smiths Inlet, Rivers Inlet, Hakai Pass and Bella Bella areas were estimated using log books. Approximately 6,562 Chinook were retained at lodges in these areas in 2017, slightly higher than the 2016 catch.

4.4.2 RECREATIONAL- NON-TIDAL

4.5 COMMERCIAL FISHERIES

North Coast commercial gill net catches totalled 1,378 Chinook from Areas 3 to 6 (from hailed catch data). Chinook catch in Areas 3 were 1257 Chinook. No Chinook were reported caught in Areas 4 and 5 and 121 were caught in Area 6. These estimates of gill net catches include Chinook less than 5 pounds (graded as jacks and small red fleshed Chinook) not normally included for PSC accounting. Small Chinook typically make up less than 5% of commercial gill net catches. Hail catch data tend to underestimate catch reported in fish slips by 25 to 30%.

Central Coast commercial gill net catches totalled 2,998 Chinook with 2,992 from Area 8 and 6 from Area 7 (from hailed catch data).

Johnstone Strait commercial fisheries including Area B seine and Area D gill net was managed by South Coast and corresponding catches are reported in the South Coast section of this report.

4.5.1 COMMERCIAL (A-H FISHERIES- INCLUDES ATP)

5 NORTHERN BC PINK SALMON FISHERIES

5.1 OBJECTIVES AND OVERVIEW

In 2017, Canada was to manage the Area 3-1 to 3-4 net fisheries to achieve an annual catch share of 2.49% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 Pink salmon. The total return of Pink salmon to Alaskan Districts 101, 102 and 103 was not available at the time of publication.

Canada was also to manage the Area 1 troll fishery to achieve an annual catch share of 2.57% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 Pink salmon.

5.1.1 AREAS 3-1 TO 3-4 PINK NET CATCH

In the Canadian northern boundary area, Pink salmon returns were anticipated to be average to below average for Areas 3 and 4, based on brood year return strength. Actual returns to Area 3 were higher than anticipated, while the Area 4 returns were below average. The 2017 Canadian Pink salmon catch in Sub-areas 3-1 to 3-4 was 703,702.

5.1.2 AREA 1 PINK TROLL CATCH

The Canadian commercial troll fishery targeting Coho salmon with retention of Pink salmon was open in the northern portion of Area 1 (Dixon Entrance AB Line) from July 1 to July 10, and then expanded to the rest of Area 1 until it was closed on September 30. Pink retention was also permitted during the Chinook directed fishery in parts of Area 1 which opened from June 21 to August 4 and again from August 25 to September 30. Area 1 Pink salmon directed effort was very minimal and the fishery harvested a total of 33,009 Pink salmon.

6 SOUTHERN BC AGGREGATE ABUNDANCE-BASED MANAGEMENT (AABM) CHINOOK

6.1 OBJECTIVES AND OVERVIEW

Chinook fisheries are managed by either an aggregate abundance-based management (AABM) or individual stock-based management (ISBM) regime. Allowable harvest impacts in AABM areas are determined by provisions in the Pacific Salmon Treaty and subject to domestic considerations, such as conservation and allocation. In Southern BC, all AABM Chinook fisheries are located off the West Coast Vancouver Island (WCVI), including components of the recreational fishery, First Nations fisheries, and the Area G troll fishery.

For the period October 2016 through September 2017, the forecast Chinook abundance index was 0.77 of the PST base period. Therefore, under treaty provisions, the maximum allowable catch was 115,300 Chinook for WCVI AABM fisheries; which includes a 30% reduction consistent with the treaty provisions that came into effect in January 2009.

Of this total, 58,927 was the pre-season expected catch for the offshore recreational and First Nations fisheries. The remaining 56,373 Chinook were allocated to the commercial fisheries (Area G and T'aaq-wiihak).

Further considerations for managing Chinook catch in WCVI AABM fisheries are driven by concerns regarding the low status of natural WCVI, Lower Strait of Georgia (LGS), Fraser River Spring 42, Spring 52, Summer 52 Chinook, and Interior Fraser Coho populations.

Several ocean fisheries in Canada intercept WCVI origin Chinook, including northern troll, Haida Gwaii recreational, WCVI troll and WCVI recreational. Ocean fisheries in Canada are limited to a 10% exploitation rate, even if PST provisions allow for a higher catch. Management measures are in place to reduce the impact of fisheries on WCVI origin Chinook while still providing harvest opportunities.

Continued efforts were made in 2017 to limit the impact of the troll fishery on low status Chinook populations, including time and area constraints, and limits on effort (boat-days) to protect stocks of concern.

AABM Chinook catch and release information from all fisheries can be found in Appendix 4.

Table 6-1 Pre-Season and Post-Season Total Allowable and Catch Estimates for October 2016-September 2017 WCVI AABM Chinook

	Pre-Season	Post-Season
WCVI AABM Abundance Index	0.77	under review

WCVI AABM Chinook TAC*	115,300	under review
AABM Recreational Catch	50,000	46,705
First Nations Catch (FSC)	5,000	1,754
Maa-nulth First Nations Catch (FSC)	3,927	1,409
T'aaq-wiihak Catch	6,688	6,877
Area G Troll Catch	49,684*	47,534
Total AABM Catch	115,300	104,085

*The total Area G troll TAC is calculated as the difference between the WCVI AABM Chinook TAC less offshore recreational catch, NTC First Nations Expected FSC catch, Maa-nulth Domestic Allocation and T'aaq-wiihak allocation.

6.2 RECREATIONAL FISHERIES

The WCVI AABM recreational Chinook fishery primarily takes place in offshore Areas 121-127 from June to September. Chinook catch from inshore Areas 21-27 in June and Areas 21-24 in July are also included in the AABM estimate. Catch and effort are largely driven by abundance and weather, and together both have impacts on annual harvest. Previous sampling has indicated that there is minimal AABM catch and effort outside of this period.

Chinook management measures are in place in the near-shore AABM areas to protect migrating WCVI origin Chinook. In 2017 management measures remained the same as those implemented in 2016, and included removing the WCVI Chinook corridor, increasing the finfish closures in several areas, increasing terminal Chinook non-retention areas, and focussing recreational opportunities in areas where DNA samples indicate that WCVI Chinook presence is lower.

Chinook catch in the AABM recreational fishery is estimated through several catch monitoring programs, including a creel survey, a logbook program and DFO's electronic survey information (iREC). The creel survey continues to be the most utilized catch monitoring program in this area particularly because it collects effort (number of boat trips), and catch per unit effort data. Catch for any given species within a defined time-area stratum is estimated by multiplying effort estimates by CPUE. Total effort is estimated through vessel counts, gathered through either aerial or on-water boat surveys of the fishing area. CPUE is estimated from interviews with anglers at specific landing sites and from trip logbooks and manifests submitted by lodges and guides through a voluntary monitoring program. Logbook effort is removed from effort estimates where there is overlap. Data regarding the daily activity profile of the fishery, fishing

locations, and the proportion of guided versus un-guided effort are also gathered from angler interviews.

The total Chinook catch in the 2017 WCVI AABM fishery was estimated to be 46,705, which is down 15% from the 5 year average of 55,000. The total Chinook released in the 2017 WCVI AABM fishery was estimated to be 33,289, which is down 30% from the 5 year average of 47,900. Effort in the AABM area for 2017 was 26,579 boat trips, which is down about 5% from 2016. Please see Figure 6-1 below which illustrates catch and effort from 1995 through 2017.

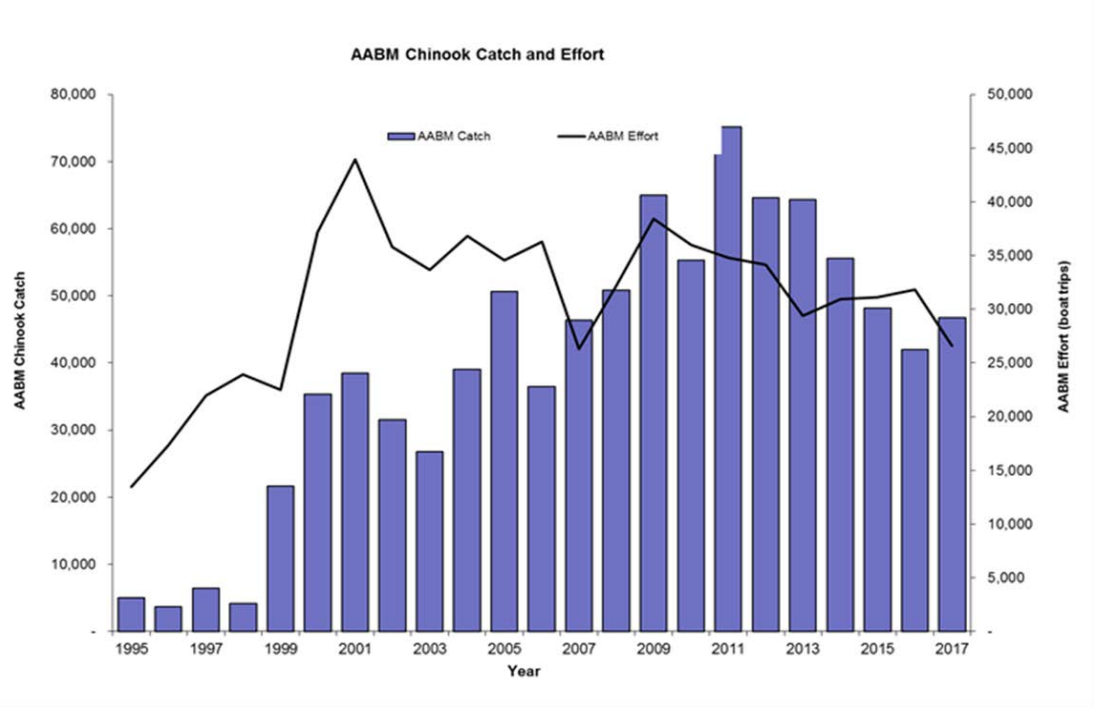


Figure 6-1 WCVI Recreational AABM Catch and Effort- Chinook, 1995-2017

6.3 COMMERCIAL FISHERIES

Based on the completion of the April 2017 Chinook Technical Committee (CTC) Chinook model calibration, the WCVI AABM Canadian allowable harvest was 115,300. The expected FSC harvest was set at 8,927; and the expected recreational catch was 50,000, leaving 56,373 Chinook available for commercial harvest. The commercial TAC was apportioned with 88.1% to Area G Troll and 11.9% to the T'aaq-wiihak First Nations Demonstration fishery. The Area G Troll TAC was 49,684 Chinook and the T'aaq-wiihak Demonstration fishery TAC was 6,688.

The total estimated commercial catch was 54,411 of which the Area G troll catch was 47,534 and the T'aaq-wiihak catch was 6,877.

For the 2016/2017 Chinook year (October 1, 2016 to September 30, 2017), fisheries continued to be shaped by conservation concerns for the following domestic stocks: Fraser River Spring 42,

Spring 52, Summer 52 Chinook, Interior Fraser River Coho, WCVI origin Chinook salmon, and LGS Chinook.

6.3.1 AREA G TROLL SUMMARY

The Area G Troll annual management plan is designed to maintain exploitation rates on stocks of concern within established limits through the use of fishing time and area closures in conjunction with fishing effort limits. The management plan distributes catch and effort throughout the fishing year.

The management plan is subject to change when required to address specific conservation concerns. For the 2017 fishing season, the following changes to annual fishing plan were implemented:

- Conservation measures introduced in the Area G troll fishery in 2011-12, to address low returns of Fraser River Spring 42, Spring 52, and Summer 52 Chinook continued in the past season. For Area G troll this includes a fishery closure for the month of June and the July fisheries delayed until the third week of July.
- To avoid exceeding the overall WCVI AABM TAC, 5,000 Chinook of the Area G TAC was allocated to September fisheries. If AABM catch estimates indicate the overall WCVI AABM TAC may be exceeded, the Area G TAC for September would be used to assist Canada with staying within its overall WCVI Chinook TAC.
- Retention of marked Coho salmon by-catch was permitted in all openings between September 15 and December 31.

Area G Troll Fishing Periods:

October to March:

During the period from October 1 to March 15, a harvest level of approximately 20% of the Area G annual TAC was recommended, based on the PST Chinook model calibration and assigned harvest levels for the outer WCVI area.

March 16 to April 18:

A full time-area closure was maintained from March 16 to April 18 annually to avoid interception of Fraser River Spring 42 and Fraser Spring & Summer 52 Chinook.

Late April/ mid-June:

During the period from April 19 to June 15, a harvest of approximately 40% of the Area G annual TAC was recommended, based on the PST Chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, total effort (boat-days) was limited and areas of southwest Vancouver Island were closed until May 7 (partial openings from May 2 to 7), in order to avoid interception of Fraser River Spring 42, Spring 52, and Summer 52 Chinook.

June 16 to July 23:

A full time-area closure was maintained from June 15 to July 23 in Management Areas 125 to 127, and from June 16 to July 31 in Management Areas 123 to 124, to avoid interception of Fraser River Spring 42, Spring 52, and Summer 52 Chinook.

July 24 through early August:

During this period, a harvest of approximately 20% of the Area G annual TAC was recommended, based on the PST Chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, the fishery is managed to minimize mortality on wild Coho through: a) a maximum interception of Coho; and b) the mandatory use of large (minimum 6") plugs. As well, the fishery is managed to minimize mortality of WCVI origin Chinook through the use of time-area closures of near shore areas where WCVI Chinook stocks are prevalent.

September:

During the September period, a harvest of approximately 20% of the Area G annual TAC was recommended based on the PST Chinook model calibration and assigned harvest levels for the outer WCVI area. The Area G harvest level in September has the potential to increase if there is available remaining WCVI AABM TAC after accounting for First Nation FSC and recreational fisheries. However, if First Nations or the recreational sectors catches are larger than projected, the available commercial TAC is reduced. During harvest opportunities between September 15 and December 31 retention of marked Coho by-catch was permitted.

For all troll fisheries, selective fishing practices were mandatory, including single barbless hooks and revival tanks for resuscitating non-retention species prior to release.

Since 1999, a major objective for the management of the WCVI troll fishery has been to distribute the catch throughout the fall-winter-spring-summer periods. This objective was continued in 2016/2017.

The late July and August plug fisheries were monitored to determine encounter rates of other species and estimate numbers of released Chinook. Biological sampling was conducted for size distributions, and stock compositions (Coded Wire Tags, DNA and otolith samples).

Table 6-2 Post-Season Monthly Catch Estimates for 2011/12 to 2016/17 WCVI AABM Chinook Area G Troll Fisheries

	2016/2017	2015/2016	2014/2015	2013/2014	2012/2013	2011/2012
October	0	178	213	2,358	3,344	0
November	0	13	56	28	230	57
December	0	1	0	25	312	188
January	72	51	186	49	1,018	129
February	276	342	612	586	358	542
March	358	315	731	1,422	501	243
April	4,065	6,456	3,841	13,345	1,374	10,493
May	23,557	31,799	27,405	40,336	25,737	22,334
June	0	0	0	0	0	0
July	8,169*	0	0	26,494*	0	0
August	6,758*	7,574*	13,953*	10,002*	0	4,280*
September	4,279**	2,390**	7,341	15,360	2,519	17,264
Total	47,534	49,119	54,338	110,005	35,393	55,530

*Plug fishery.
**Plug fishery until September 15.

6.3.2 FIRST NATIONS COMMERCIAL HARVEST

In 2017, the Department authorized an AABM Chinook salmon demonstration fishery for the T'aaq-wiihak Nations (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht) with an initial TAC of 6,688 pieces. The fishery was carried out in portions of Areas 24, 25, 26, 124, 125 and 126 on the west coast of Vancouver Island over three openings: Feb 13 – Mar 15, Apr 19 – May 31 and July 24 – 30. A 100% independent dockside monitoring program was in place for the entire season. Total sold catch for the fishery was 6,877 Chinook. Sale of Chum and Pink were also permitted and there were 0 Pink and 5 Chum sold. Several groundfish species were also permitted to be retained for sale. Additional salmon and groundfish were retained for FSC under dual fishing provisions. Reported releases for this fishery were 305 sub-legal Chinook, 989 Coho, and 1 Chum.

6.4 FIRST NATIONS FSC FISHERIES

The 2017 WCVI AABM FSC Chinook reported catch (to date) was 1,754, (this includes fish retained for food, social and ceremonial purposes from the T'aaq-wiihak salmon demonstration fishery); catch from Maa-nulth Nations domestic fisheries was estimated at 1,409. Total AABM Chinook reported to date for First Nations FSC and domestic fisheries was 3,919.

7 SOUTHERN BC CHINOOK INDIVIDUAL STOCK BASED MANAGEMENT (ISBM) FISHERIES

7.1 OBJECTIVES AND OVERVIEW

In addition to the PST regime, Canada implemented management actions as required to ensure conservation of Canadian origin Chinook and to meet domestic allocation requirements. These Chinook fisheries were managed to harvest rates on an individual stock basis (ISBM).

Measures were taken in 2017 in First Nations FSC, recreational and commercial Chinook fisheries to protect WCVI, LGS, Fraser River Spring 42, Spring 52, and Summer 52 Chinook stocks. FSC management actions included time and area closures and reduced fishing times. Recreational measures included barbless hooks, time/area closures, size restrictions and mark selective fisheries. Commercial measures included barbless hooks, time and area closures, gear restrictions, mandatory use of revival tanks, daily catch reporting and mandatory logbooks.

Specific management actions were taken to protect WCVI origin Chinook in Canadian ocean fisheries (not including enhanced terminal areas), the harvest of which is managed to an exploitation rate of 10%. Fisheries to which this limit applies are the northern troll, Haida Gwaii recreational, WCVI troll and WCVI recreational. Most Southern BC fisheries were managed such that impacts on WCVI wild Chinook stocks were minimized, with the exception of terminal recreational, commercial and First Nations FSC fisheries.

LGS Chinook stocks are improving from historic lows seen in 2009 and are rebuilding. Significant management measures in recreational and commercial fisheries continued to be in place to protect these stocks. Some LGS Chinook stocks are seeing a gradual increase in terminal returns, particularly in the Cowichan River, which is encouraging.

Fraser River Spring 42, Spring 52, and Summer 52 Chinook stocks had specific management measures in place to reduce exploitation in FSC, recreational and commercial fisheries. FSC management actions in the Fraser River included time and area closures, and reduced fishing times. Recreational fisheries in Juan de Fuca Strait, the lower Strait of Georgia and the approach waters of the Fraser River had specific time, area, size and mark selective restrictions designed to minimize the amount of exploitation on these Chinook stocks. Fraser River tidal and non-tidal sport fisheries had delayed starting dates, implemented to protect Fraser River Spring 42, Spring 52, and Summer 52 Chinook stocks. In addition, due to extreme conservation concerns on Fraser Sockeye in 2017, the Chinook directed sport fisheries in the approach waters to and in the Fraser River were even further delayed early September. The Area G and T'aaq-wiihak commercial troll fisheries on the WCVI were also managed with time and area closures for Fraser River Spring 42, Spring 52, and Summer 52 Chinook stocks.

ISBM Chinook catch and release information from all fisheries can be found in Appendix 5.

In 2017, commercial fisheries in Barkley and Nootka sounds targeted ISBM Chinook.

7.2 STOCK STATUS

7.2.1 WEST COAST VANCOUVER ISLAND CHINOOK

Wild WCVI Chinook are a stock of concern. While stocks are low and stable, they are below target and have not rebuilt from low abundances that resulted from a decline in productivity observed during the early to mid-1990s. Of particular concern are those stocks that originate from the SWVI area conservation unit (i.e. Clayoquot Sound).

Hatchery production supports terminal fisheries directed at surplus production with extensive management measures in place to reduce impacts on wild origin stocks. For WCVI hatchery stocks, the terminal return is defined as total catch (First Nation FSC, sport and commercial) in the near approach areas of the hatchery plus escapement (brood collection plus natural spawners). In these approach areas, catch is dominated by the hatchery stock (e.g. >95%), therefore, higher exploitation rates are permitted than in times and areas dominated by naturally produced WCVI Chinook stocks.

A small assessment fishery near the Mquq^{W}in / Brooks Peninsula occurred in 2017 in order to improve the precision and accuracy of annual WCVI Chinook return estimates. The sample size was approximately 1,000 Chinook.

7.2.2 STRAIT OF GEORGIA CHINOOK

Fall Season

Returns of fall Chinook to SEP facilities south of Campbell River were above average in 2017. Puntledge River showed the largest departure from the stable trend with an estimate of over 12,600 fish compared to the 12 year average of 6,870. Further south, the Big Qualicum River escapement also increased over the 4 year average of 6,220 to 9,829. Counts in the Little Qualicum River were also above average based on swim results.

Chinook escapement to mid-island streams was also above average. The peak count in the Englishman River (1,113) is tracking above recent expanded AUC counts. Nanaimo River counts were above average in 2016 and counts suggest a similar or slightly higher escapement in 2017.

Cowichan River Chinook (a wild Chinook indicator stock) declined from a high of 16,982 adults in 1995 to 1,260 in 2009. Exploitation rates on CWT hatchery fish were estimated at 80-90% in the early 1990s but declined to an average of 56% for the period 2006-2012 as a result of various harvest restrictions implemented over the last 20 years. Additional conservation measures were

introduced in 2005 to reduce the harvest of Cowichan Chinook by the Strait of Georgia sport and WCVI troll fisheries. First Nations have substantially reduced harvests of Chinook in the Cowichan River in recent years. The declining trends after 1990 in various southern Strait of Georgia Rivers are attributed to high exploitation rates, a decline in marine survival, and habitat issues.

The Cowichan River counting fence was repaired after sustaining significant damage in 2016 and operational from September 14 to October 19th, 2017. Over this time, a total of 10,736 Chinook were enumerated before high flows prevented further counts. Data is currently being reviewed and counts will likely be expanded using PIT tag detections in returning fish from tags that were applied as juveniles. Based on results it appears that the escapement target of 6,500 naturally spawning adults will be met. Abundance has been steadily improving since 2009 with estimates for 2017 comparable to the 1990's. The ratio of jacks in the population based on video analysis is estimated at 52% which is well above average. The proportion of hatchery fish in the population was estimated at 11% for adults and 7% for jacks suggesting a strong wild component. The number of Chinook caught in local First Nation FSC fisheries has not yet been reported. Hatchery brood removals are estimated at 485 fish and are in addition to fence counts.

On the mainland side of the northern Strait of Georgia, Sliammon and Lang hatcheries continue to have variable returns, however in the last five years the returns to Lang Creek have been stronger than in previous years. There are a few very small, wild populations remaining in the Theodosia and Skwakwa rivers, and those rivers entering Jervis Inlet, where assessment data are poor or not available. Historically, a large proportion of the Chinook stock aggregate originating from rivers north of Nanaimo migrate into central and northern BC and Alaska. Exploitation rates on this stock aggregate have gradually been reduced over the last 15 years, thus the stable trend in annual returns to rivers over this period suggests a reduction in marine survival.

Spring/Summer:

The Puntledge, Nanaimo and more recently the Cowichan system have identified early runs of Chinook in the Strait of Georgia. Cowichan Summer run Chinook were monitored again this year with a DIDSON and results show approximately 100 targets moving upstream in the mid-river. Efforts to recover Puntledge summers to viable levels have resulted in improved returns to the river since 1999. The estimate for 2017 escapement to Puntledge is approximately 1,016 adults which is above the four year average of 790. Monitoring of Nanaimo spring and summer Chinook escapement was confined to a total of three swims surveys in 2017. Although no spring run fish were observed, a peak count of 960 summer run Chinook is above the 4 year average of 810.

7.2.3 JOHNSTONE STRAIT MAINLAND INLET CHINOOK

Currently only three systems are monitored consistently in Areas 12 and 13. The Nimpkish River is assessed using standardized swim surveys and stream walks by hatchery staff. An intensive mark-recapture program is carried out by Quinsam Hatchery to estimate escapement on the Campbell/Quinsam system. A mark-recapture program has been in development over the past few years on the Phillips River, with the plan to eventually establish it as a mainland Chinook indicator. Other systems are covered using intermittent visual surveys.

Nimpkish River

In 2017, the coverage of the Chinook timing was greatly impacted by flow conditions during November, which made coverage of the watershed difficult. Assessment coverage up until that time period will be used to determine escapement to the system for 2017. Hatchery staff were successful in collecting approximately 50% of their brood stock target prior to the significant rain events and are still working on brood collection. The escapement estimate of just over 780 individuals is lower than the last 5 year average of 2,200 and is similar to the low but stable returns seen prior to 2012, which averaged around 600 adults.

Campbell/Quinsam System

The Campbell/Quinsam, a long-term Chinook indicator, has been assessed by carcass mark-recapture since 1984. The 2017 program have the combined system Chinook estimate at approximately 9,600 adults; another improved return following the estimated 7,500 that returned in 2016. Both escapements are the largest since 2006. Precision on the Quinsam also improved in 2017, falling below 5% error, the lowest since 2013 while Campbell error was slightly below 10%.

The Quinsam Hatchery was able to meet its Chinook brood target.

Phillips River

Results from the mark-recapture program on the Phillips River indicate the Chinook escapement is in the range of 2,200-2,900 range, remaining consistent with returns of the past five years.

Brood stock was again collected in 2017, the local hatchery plans to release approximately 90,000 coded wire tagged Chinook smolts next spring to contribute to the assessment program.

7.2.4 FRASER RIVER CHINOOK

Escapements of spring and summer stream type stocks have been at low levels since the 2009 Agreement, and fisheries have been restricted in the Canadian Salish Sea and Fraser River to address concerns about poor status. Indications are that escapement to the Spring 1.3 aggregate was at a lower abundance than the 2012 parent brood, and at levels not observed since the late

1970's. Escapement to some stocks in the Spring 1.2 aggregate decreased again relative to parental brood levels in 2013, and escapement estimates are still being developed for some stocks following the summer wildfires, so the aggregate total is currently unavailable. Yearling (stream-type) summer Chinook (Summer 1.3 aggregate) were also poorer than the parental escapements in 2012, and again, less than 1979-1982 base period average.

Status has generally been better for the summer run ocean type stocks, but a combination of low spawning escapement and low smolt to age-2 survival led to concerns about the escapement expected for 2017. In 2017, the escapement of the Summer 0.3 aggregate was estimated at about 70% of the brood escapement levels.

Annual lower Fraser River fall-run Chinook stock group escapements are, on average, large (>100,000). The major contributor and principal focus of assessment of this stock group is Chinook returning to the Harrison River, and Harrison River transplants to the Chilliwack River. For both the Harrison and Chilliwack rivers, the field study portions of the escapement assessments are just concluding; and data entry and analyses have not started.

Howe Sound/Squamish River

No information is available at this time.

Burrard Inlet

No information is available at this time.

Boundary Bay

No information is available at this time.

7.3 FIRST NATIONS FSC FISHERIES

WCVI FSC Fisheries and Treaty Domestic Fisheries

Somass First Nations caught a total of 2,076 Chinook by gill net, rod and reel and as by catch during other salmon fisheries in Area 23. Catch reports for Maa-nulth domestic harvest indicate a combined ISBM FSC Chinook harvest of 1,223 pieces. The WCVI NTC non-treaty First Nations harvest reported is 3,040 Chinook. The remaining non-NTC First Nations harvest reported 418 Chinook. The total combined catch for WCVI First Nations was 6,757 Chinook.

Strait of Georgia FSC Fisheries and Treaty Domestic Fisheries

First Nations catches in the Strait of Georgia; is estimated at 801 Chinook kept and 2 released

Johnstone Strait FSC Fisheries

First Nations catches in Johnstone Strait; is estimated at 232 Chinook kept and 7 released.

Fraser River FSC Fisheries

FSC fisheries took place in the Lower Fraser River between the mouth and Sawmill Creek from May through November 2017. A total of 13,305 Chinook were harvested, with 12,742 taken in Chinook-directed fisheries, and the remaining Chinook harvested as bycatch in Pink and Chum-directed FSC openings or limited participation openings. There were no Sockeye directed fisheries in 2017. Additionally, the following bycatch occurred during Chinook-targeted FSC openings: 16,982 Sockeye kept and 522 Sockeye released; 0 Coho kept and 2 Coho released; 4,937 Pink kept and 3,296 Pink released; 85 Chum kept and 12 Chum released.

Chinook directed FSC fisheries took place in the Fraser River above Sawmill Creek from May through September 2017. A total of 3,040 Chinook were harvested. Bycatch estimates are currently being finalized. Data indicate that less than 516 Sockeye were released and 0 Coho were released in Chinook directed FSC fisheries above Sawmill Creek.

7.4 COMMERCIAL FISHERIES

Area B Seine

Due to a relatively large forecast of 79,000 Chinook for Robertson Creek Hatchery, Area B Seine fisheries were initiated in Area 23. This was the first Seine fishery for Chinook in this area since 2009. The fisheries occurred in Subarea 23-1, upper Alberni Inlet, targeting Chinook with a bycatch of Coho allowed. The fisheries were operated by a pool system with only designated vessels allowed to fish. It occurred daily on September 5-6, September 12-13 and September 18-19. The Area B in-season TAC was 3,430 Chinook. The fisheries were successful with a total Chinook catch of 3,152 pieces and a bycatch of 684 Coho.

Area D Gill Net

Area D gill net fisheries were initiated in Area 23. The fisheries occurred in Subarea 23-1, upper Alberni Inlet, targeting Chinook with a bycatch of Coho and Sockeye allowed. In the last two years Area D fisheries were poor despite abundant Chinook returns. The fisheries were opened one day a week for night-time only fisheries in late August and early September. The fisheries occurred on August 21, 29 and September 8. The Area D in season TAC was 6,860 Chinook. The fisheries were successful, with a total catch of 7,059 Chinook and a bycatch of 98 Coho and 8 Sockeye.

In 2017, gill net fisheries occurred in Tlupana Inlet targeting Chinook returns to the Conuma River hatchery. Fisheries occurred discontinuously from Aug 10 to September 10. The total estimated catch during the Chinook directed fishery was 20,202 Chinook and 27 Chum retained with 9 Coho and 1 Chum reported being released.

Area E Gill Net

There were no Area E gill net fisheries for ISBM Chinook in 2017.

Two Area E gill net commercial openings took place in the Fraser River (Area 29) during the 2017 Chum season and retention of Chinook salmon was not authorized; there were 0 Chinook kept and 104 Chinook released.

7.4.1 FIRST NATIONS COMMERCIAL HARVEST

In 2017 an agreement was reached with the Hupacasath and Tseshaht First Nations for an Economic Opportunity fishery. The fisheries occurred in Subarea 23-1 Upper Alberni Inlet including the tidal portion of the Somass River. The target species was Chinook with a bycatch of Coho and Sockeye allowed. There were several commercial Chinook openings on August 21, 27 September 8 and October 15. The in-season Economic Opportunity TAC for Chinook was 10,290. The fisheries were successful with a total Chinook catch of 11,378 and a bycatch of 1,223 Coho. There was also a small amount of Chinook bycatch in an October 15 Economic Opportunity Coho fishery of 182 pieces. The total Chinook catch was 11,560 pieces.

The Department authorized an ISBM Chinook commercial salmon demonstration fishery in Area 25 for the T'aaq-wiihak Nations in 2017. This fishery targeted both the Conuma River and Burman River enhanced Chinook returns using troll and gill net gear from vessels less than 25 feet in length. Fishery openings occurred between July 12 and September 4. A total of 7 Chinook from the Conuma targeted fishery and 1,591 Chinook from the Burman targeted fishery were harvested. Chum bycatch were also permitted to be sold and there were a total 5 Chum harvested. Dual fishing was permitted and there were 2 Chinook and 1 Coho reported retained for FSC purposes.

Fraser River Area

In 2017, no Fraser Sockeye economic opportunity or demonstration fisheries took place in the Fraser River; therefore there was no impact on Chinook from these fisheries.

There are currently three Inland Commercial Fishing Enterprises (CFE) operating in the BC Interior: Okanagan Nation Alliance, Upper Fraser Commercial Fishing Enterprise and Riverfresh (Secwepemc Fisheries Commission). Riverfresh is the only CFE that receives allocation for Chinook (S. Thompson 4-1). In 2017, Riverfresh did not conduct a demonstration fishery due to Sockeye constraints and very low Sockeye returns in the area.

Economic opportunity fisheries for Fraser Chum occurred from mid-October through mid-November in the Lower Fraser River Area. Although the retention of Chinook salmon was not authorized during these openings, a total of 16 Chinook were reported retained. In addition, 410 Chinook were encountered and released.

There is currently one Inland Commercial Fishing Enterprises (CFE) operating in the Lower Fraser: Harrison Fisheries Authority was authorized a demonstration fishery on Chum using

beach seines. The retention of Chinook salmon was not authorized during these openings, zero Chinook were retained and 46 Chinook were encountered and released.

Fraser River Economic Opportunity and Inland Demonstration Fisheries

Lower Fraser Area

In 2017, no Sockeye-directed economic opportunity or demonstration fisheries took place in the Fraser Area; therefore there was no incidental impact on Chinook from these fisheries.

In mid-October through mid-November economic opportunity/ demonstration fisheries to access available Chum salmon TAC were initiated. Although the retention of Chinook salmon was not authorized during these economic opportunity demonstration / fisheries, there was some by-catch retention reported. The total Chinook harvested in Chum economic opportunity/demonstration fisheries was 16 with 456 released.

Mid Fraser / Thompson Area

Economic opportunity or inland demonstration fisheries did not occur in 2017 for ISBM Chinook in either the upper or lower reaches of the Fraser River.

An inland commercial fishing enterprise (CFE) operated by Riverfresh (Secwepemc Fisheries Commission), received an allocation for Chinook in the BC Interior but did not conduct a fishery due to Sockeye constraints. Dual fishing is permitted for this fishery but low returns of Sockeye in the area resulted in the CFE deciding to not conduct the fishery.

7.5 EXCESS SALMON TO SPAWNING REQUIREMENTS (ESSR) FISHERIES

The Tseshaht and Hupacasath First Nations were issued a joint Excess Salmon to Spawning Requirements (ESSR) Licence for Chinook at the Robertson Creek Hatchery facility. The total harvested was 29,554 Chinook, including 5,589 jacks.

The Ditidaht First Nation was issued an ESSR Licence for Chinook at Nitinat Lake and the Nitinat Hatchery. The total harvested was 2,749 Chinook, including 15 jacks.

The Mowachaht/Muchalaht First Nation was issued an ESSR licence to harvest Chinook from the Conuma River and hatchery. A total of 10,185 Chinook (including 507 jacks) were harvested. In addition, 54 Coho and 22 Chum morts were kept for FSC.

The Ucluelet First Nation was issued an ESSR licence for Chinook at the Thornton Creek hatchery. The total harvested was 240 Chinook.

The total catch for all WCVI ESSR Chinook fisheries was 42,728 pieces.

ESSR harvest at the Big Qualicum hatchery included catch of 5,788 Chinook, including 1,334 jacks.

There were ESSR fisheries at the Capilano hatchery in 2017 that included Chinook salmon. The total ESSR harvest of Chinook salmon was 457 pieces, including 165 jacks.

There were ESSR fisheries at the Chilliwack hatchery in 2017 that included Chinook salmon. The total ESSR harvest of Chinook salmon was 6,176 pieces, including 3,758 jacks.

There were ESSR fisheries permitted at the Inch Creek and Chehalis hatcheries in 2017 however no harvests of Chinook salmon took place.

There were no Johnstone Strait ESSR opportunities on Chinook in 2017

7.6 RECREATIONAL FISHERIES

ISBM Chinook catch and release information from all fisheries can be found in Appendix 5.

West Coast Vancouver Island

WCVI recreational ISBM fisheries are managed to fall within Canada's 10% exploitation rate on WCVI wild Chinook. To help achieve this objective management measures are put in place along the coast in areas that tagging studies have shown to be the main WCVI Chinook migratory routes. Management measures in 2017 remained the same as those in 2016 which included increased finfish closed areas, increased terminal Chinook non-retention areas, and increased recreational access to areas where hatchery stock composition is considered to be the dominant portion of the harvest. Other management measures that are in effect to reduce recreational impacts on Chinook include barbless hooks, a minimum size limit, daily limits and annual limits.

WCVI Chinook management measures depend on forecasted abundance and can change annually based on the WCVI Chinook abundance forecasts. Management measures went into effect starting July 15 in those waters north of Estevan Point and August 1 for those waters south of Estevan Point. In 2017 a good return of 4 year old Chinook was expected to the WCVI. Actual returns were slightly above forecast, and provided good recreational fishing opportunities in many areas.

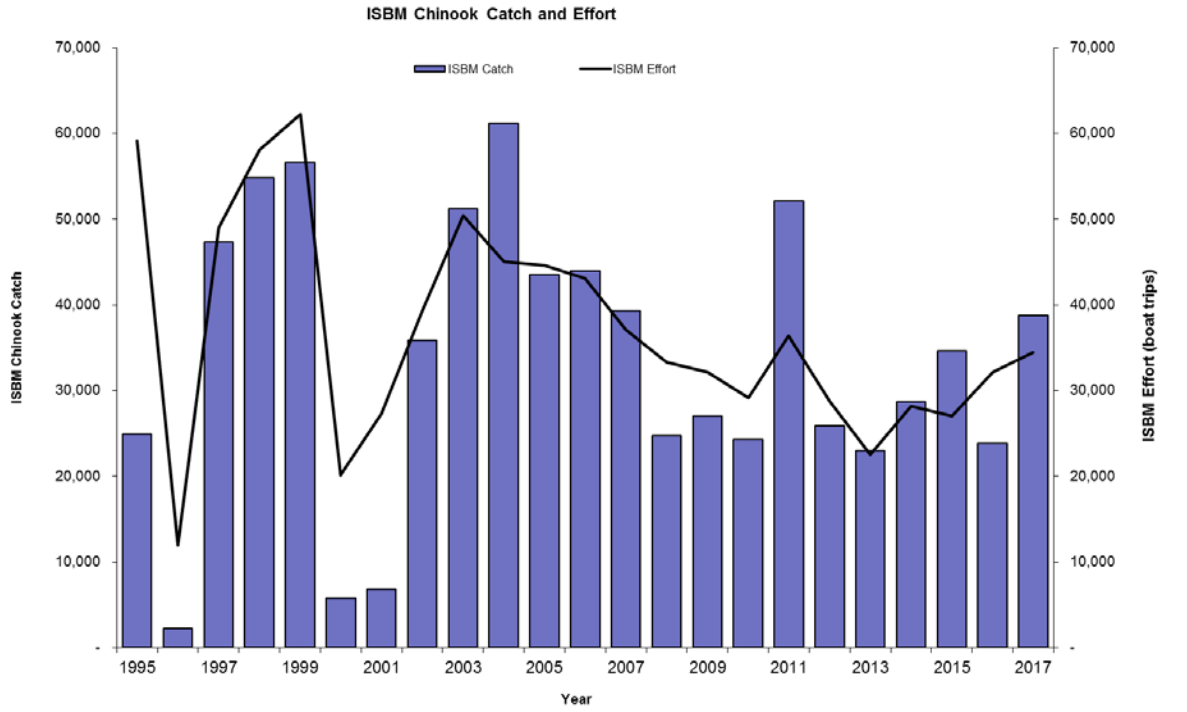


Figure 7-1 Recreational WCVI Chinook ISBM Catch and Effort, 1995 to 2017

Inside Areas: Johnstone Strait, Strait of Georgia, and Juan de Fuca Strait

The 2017 recreational fisheries in these areas were designed to minimize impact on returning Fraser River Spring 4-2, Spring 5-2, and Summer 5-2 Chinook. Management measures implemented to protect these stocks included mark selective fisheries and size limits in specific areas/times.

In those waters near Victoria between Cadboro Point and Sheringham Point (Subareas 19-1 to 19-4 and Subareas 20-4 and 20-5), retention regulations were adjusted from March 1 to June 16 (and March 29 to June 16 for Subareas 20-6 and 20-7) where anglers were permitted to retain two Chinook per day either wild or hatchery marked between 45 cm and 67 cm, or hatchery marked only Chinook over 67 cm in length. In this same waters, retention regulations were adjusted from June 17 to July 14 where anglers were permitted to retain two Chinook per day either wild or hatchery marked between 45 cm and 85 cm or hatchery marked only Chinook over 85 cm in length. The minimum size limit in these waters is 45 cm in length. This is the Zone 1 management measure for Fraser Chinook.

The Strait of Georgia "Chinook corridor" extending from Subareas 18-1 to 18-6, 18-9, 18-11, 19-5 and a portion of 29-4 and 20-5 that lies south from a point on the east side of Valdes Island and extending 57 degrees true for 5 nautical miles remained in place in 2017. In this corridor the daily limit was two Chinook of which only one could be over 67 cm from May 8 to June 16. Retention regulations in Subareas 18-1 to 18-6, 18-9 and 18-11, 19-5, and those portions of

Subareas 29-3 to 29-5 that lie southeasterly of a line from a point on the east side of Valdes Island located at 49 degrees 05.562'N and 123 degrees 39.989'W then extending approximately 57 degrees True to the North Arm Jetty Light located at 49 degrees 15.440'N and 123 degrees 16.778'W from June 17 1 to July 14 allowed anglers to retain two Chinook per day either wild or hatchery-marked between 62 cm and 85 cm. The minimum size limit is 62 cm. This is the Zone 1 management measure for Fraser Chinook.

For the Johnstone Strait and the other areas of the Strait of Georgia not described above, Chinook management measures included an annual limit of 15 Chinook, a daily limit of two Chinook and a minimum size limit of 62 cm. For the Canadian portion of Juan de Fuca Strait south of Cadboro Point, regulations include an annual limit of 20 Chinook, a daily limit of two Chinook and a minimum size limit of 45 cm.

In 2017, marine sport fisheries were monitored by creel surveys in three main areas; 1) Juan de Fuca including Victoria (south of Cadboro Point) and Juan de Fuca Strait through Subareas 20-1; 2) Portions of the Strait of Georgia including Areas 14 through 18, that portion of Area 19 north of Cadboro Point, Areas 28 and 29; and 3) Johnstone Strait including Areas 11 to 13. Creel survey monitoring of these fisheries includes using an access point (landing site) survey for collecting catch, CPUE, and biological information combined with an aerial survey for effort counts. In addition, logbook programs, directed at estimating the sport catch by fishing guides during guided trips, were conducted in the Campbell River and Victoria Areas in 2017. Electronic survey estimates from the iRec program will also be used to produce catch estimates for those areas where creel surveys did not take place.

The Johnstone Strait creel survey for Areas 11-12 was conducted from June through August.

The Strait of Georgia creel survey for Areas 13 and 14 was conducted from May to October. Areas 15 and 16 did not have a creel survey in 2017. Creel surveys were conducted in Areas 17 and 18 from May to July. Creel surveys were conducted for Areas 19 and the SOG portion of Area 20 from March to October.

Effort, catch and release information from marine fisheries are summarized in Table 7-1.

Table 7-1 Catch and Effort Estimates for Southern BC Inside Sport ISBM Fisheries in 2017 from the creel survey.

Fishing Area	Survey Period	Chinook Kept	Chinook Released
Strait of Georgia	May - Oct	39,188	62,574
Johnstone Strait	Jun - Aug	13,260	15,463
Juan de Fuca Strait	Mar- Oct	18,615	27,128
WCVI Inshore	Jun-Sep	48,933	21,827

Fraser River	Jul - Oct	2,322	209
TOTAL		122,318	127,201

** Catch estimates for times/areas not included in the creel survey are not included in the above estimates.

Region 1 Vancouver Island Tributaries-

River conditions in most tributaries on Vancouver Island were improved compared to 2015 and 2016 due to a larger snowpack, cooler temperatures over the summer and more precipitation during portions of the summer months. All systems in Region 1 that are typically open remained open in 2017. The Qualicum Nitinat, Somass and Conuma Rivers provided some recreational opportunities to harvest enhanced Chinook stocks during this time period.

Qualicum River

Qualicum River opened for Chinook on August 1 for four per day less than 62 cm. On October 16 the regulation changed to four Chinook per day of which 2 could be greater than 62 cm. The Qualicum River was not monitored by creel survey during 2017.

Somass/ Stamp

During 2017 there was a non-tidal opening on the Somass/Stamp River (Area 23) with Chinook retention. The fishery opened from August 25th until December 31, 2017, and the daily limit was one Chinook salmon greater than 77cm and one less than 77 cm. The Somass/Stamp Rivers were not monitored by creel survey during 2017.

Nitinat

During 2017 there was a non-tidal opening for the Nitinat River (Area 22) from August 25, 2017 to September 30, 2017. The daily limit was two with only one greater than 77 cm. The salmon fishery was closed for retention of Chinook from October 1 until October 14 to protect Chinook salmon during the peak spawning period. The salmon fishery re-opened from October 16 until December 31 with non-retention of Chinook salmon. The Nitinat River was not monitored by creel survey during 2017.

Conuma

During 2017 there was a non-tidal opening for the Conuma River from August 25, 2017 to December 31, 2017. The daily limit was two with only one greater than 77 cm.

Fraser River and Tributaries

Fraser River Spring 42, Spring 52, and Summer 52 Chinook stocks required additional management measures again in 2016 due to continued concerns about stock status.

In Subareas 29-6, 29-7, 29-9 and 29-10, the 2017 fishing regulations were as follows:

- May 1 to September 12, for the daily limit for Chinook salmon was zero per day.
- September 13th to December 31, the daily limit was two Chinook (wild or hatchery marked) with a minimum length of 62 cm.

Tidal Fraser and Region 2 Fraser River:

In the tidal waters of the Fraser River and in that portion of the Fraser River in Region 2 the following regulations were in place for 2017:

- January 1 to September 12, no fishing for salmon.
- September 13th to December 31 the daily limit for wild or hatchery marked Chinook salmon was four with only one over 62 cm allowed to be retained.

Fraser River Tributaries:

There were several tributaries to the Fraser River in which Chinook retention was permitted. These included:

- Alouette River: daily limit of one Chinook from September 1 to December 31;
- Chehalis River: daily limit of four with only one over 50 cm from June 1 until August 31 and a daily limit of four Chinook with only one over 62 cm from September 1 until December 31;
- Chilliwack/Vedder River: daily limit of four with only one over 62 cm from July 1 until August 31, daily limit of four with two over 62 cm from September 1 to December 31;
- Coquitlam River: daily limit of one Chinook from September 1 to December 31;
- Harrison River, there was no Chinook fishery on the Harrison River in 2017 due to a low forecast of terminal abundance.

Tributaries to the Fraser River above Sawmill Creek in which Chinook retention was authorized included:

Region 3 - Fraser River Tributaries

- Kamloops Lake August 22 to September 22, daily limit of four Chinook, only one over 50 cm.

- South Thompson River: August 16 to September 22, daily limit of four Chinook, only two greater than 50 cm. There is a monthly quota of six Chinook from the South Thompson River.

Region 5A

There were no recreational Chinook fisheries in 2017.

Region 7

There were no recreational Chinook fisheries in 2017.

Region 8

Note: there is a monthly limit of four Chinook in Region 8.

- Mabel Lake – July 25 to August 15, one per day minimum size limit of 77 cm. August 16 to September 12, four per day only two over 50 cm.
- Middle Shuswap River: July 15 to August 15 daily limit of one Chinook per day, with a minimum size limit of 77 cm.
- Lower Shuswap River: July 15 to August 15, one per day minimum size limit of 77 cm. August 16 to September 12 four per day only two over 50 cm.

8 FRASER RIVER SOCKEYE

8.1 OBJECTIVES AND OVERVIEW

In 2017 the Fraser River Panel (FRP) adopted the p50 probability run size forecast for all run timing groups (4.4M Fraser Sockeye) for pre-season planning purposes. At the p50 run size forecast TAC for international sharing was available and pre-season plans took this into consideration. At the p25 run size forecast there was less than 1 million Sockeye available and pre-season plans focused on First Nations Food, Social and Ceremonial (FSC) fisheries. All fishery planning focused on staying within constraints to minimize impacts on less abundant stock groups and species of concern. Actual in-season harvest opportunities were dependent on in-season stock assessments.

Fishing plans incorporate provisions to meet escapement objectives and meet conservation objectives for stocks of concern while considering international and domestic objectives. Fishing plans include the following assumptions and guiding principles in no particular order:

- The FRP operated in accordance with Chapter 4, Annex IV of the Pacific Salmon Treaty;

- The U.S. share of the annual Fraser River Sockeye salmon total allowable catch (TAC), harvested in the waters of Washington State was set at 16.5% of the aggregate. To the extent practicable, the FRP shall manage the United States fishery to implement a fishing plan that concentrates harvest on the most abundant management group or groups;

- It is understood that the U.S. harvest may exceed 16.5% of the TAC for one or more of the less abundant management groups by a small but acceptable amount despite concentrating the harvest in this manner;

- For computing TAC by stock management groupings, the Aboriginal Fishery Exemption (AFE) of 400,000 Fraser River Sockeye, shall be allocated to management groups as follows: The Early Stuart Sockeye exemption shall be up to 20% (80,000) of the Fraser River AFE, and the remaining balance of the latter exemption shall be based on the average proportional distribution of First Nations Food, Social and Ceremonial catch for the most recent three cycles and modified annually as required to address concerns for Fraser River Sockeye stocks and other species, and as otherwise agreed to by the Fraser River Panel;

- It was anticipated that an in-season run size estimate for Cultus Lake Sockeye would not be possible due to low abundance relative to co-migrating Sockeye stocks. As a result the Cultus exploitation rate is assumed to be the same as the exploitation rate from the similarly timed Late run stocks (excluding the Birkenhead and Birkenhead-type miscellaneous stocks), caught seaward of the confluence of the Fraser and the Vedder Rivers;

- The four run timing aggregates identified under the Pacific Salmon Treaty Annex generally contain stocks with similar timing in the marine area. Recent trends in timing of some stocks, including Raft River and North Thompson (in the Early Summer run prior to 2012), and Harrison River (in the Late run prior to 2012) Sockeye now differs substantially from the other stocks in their respective historical run timing groups. Fisheries and Oceans Canada continues to manage these stocks as part of the Summer run aggregate to better align these stocks with other stocks of similar run timing. Escapement plans, management adjustments and harvest rules have been adjusted to account for this change;

- Canada's escapement plan specified escapement requirements that varied with run size for each of the run timing aggregates;

- The Total Allowable Mortality (TAM) cap describes the upper range of the total mortality (including management adjustments and exploitation rate). The TAM cap was 60% for all run timing/management groups;

- At low abundances, low abundance exploitation rates (LAERs) are implemented to protect 90% of the run timing aggregate (10% LAER) while allowing for fisheries on more abundant co-migrating run timing groups and/or other species. The exception is the Late run aggregate where a 20% LAER has been implemented consistent with recent years' practice;

- The allowable harvest in a LAER situation is not a target and in most circumstances would be considered incidental harvest or bycatch only; however, in some circumstances limited directed terminal harvest in terminal areas may be considered.

- In 2017, Early Stuart Sockeye window closures and other fishing restrictions were planned for commercial, recreational and First Nations fisheries to protect a significant proportion (90%) of the Early Stuart return. These measures included a rolling window closure based on run timing of the Early Stuart Sockeye migration through various fishery areas. The closure window was extended by one week to protect anticipated weak returns of early timed stocks within Early Summer run management aggregate;

- Conservation concerns for other Sockeye stocks and species continued to impact the planning of Sockeye fisheries. The stocks and species of concern in 2017 were: Cultus Lake Sockeye, Nimpkish River Sockeye, Sakinaw Lake Sockeye, Interior Fraser River Coho, Fraser Spring 42 Chinook, Fraser Spring and Summer 52 Chinook, and Interior Fraser River Steelhead.

8.2 STOCK STATUS

Please Note: With the exceptions of Tables 8-1 and 8-3, all tables and figures are adapted from or courtesy of the Pacific Salmon Commission.

8.2.1 PRE-SEASON ASSESSMENT

Pre-season expectations were for a median run size (p50 level) of 4,432,000 Fraser River Sockeye salmon with a one in two chance that the run size would be between 2,338,000 (at p25) and 8,873,000 (at p75).

Table 8-1 Pre-season run size abundance forecast range by management group for Fraser Sockeye

	Probability that Return will be at/below Specified Run Size				
	p10	p25	p50	p75	p90
Early Stuart	42,000	64,000	99,000	158,000	253,000
Early Summer	95,000	166,000	343,000	792,000	1,971,000
Summer	1,065,000	1,861,000	3,407,000	6,631,000	12,560,000
Late	113,000	247,000	583,000	1,292,000	2,849,000
Total	1,315,000	2,338,000	4,432,000	8,873,000	17,633,000

Pre-season expectations of the diversion rate for Fraser River Sockeye through Johnstone Strait were 51%. Expected Area 20 50% migration timing dates were July 1 for Early Stuart, July 20 for Early Summer, August 6 for Summer, and August 14 for Late-run Sockeye.

Pre-season spawning escapement goals were 99,000 Early Stuart, 137,200 Early Summer, 1,375,100 Summer and 314,000 Late-run Sockeye for a total of 1,925,300 Sockeye spawners.

Table 8-2. Pre-season (top) and Post-Season (bottom) Values for TAC and Other Management Parameters.

				TAC*										50%
Date		Management Group	Total Abundance	Spawning Escapement Target***	pMA	Manage-ment Adjust.	Test Fishing ***	Aboriginal Fishery Exemption ***	Total Deductions	Total Allowable Catch	Allowable Harvest **	Catch to date	Mission Escape. to date	Migration Date Area 20
July 7	Pre-season	Early Stuart	99,000	99,000	NA	NA	320	9,600	99,000	0	9,900			1-Jul
		Early Summer	343,000	137,200	0.39	53,500	3,530	25,900	220,130	122,870	148,770			20-Jul
		Summer	3,407,000	1,375,100	0.06	82,500	27,200	347,200	1,832,000	1,575,000	1,922,200			6-Aug
		Late	583,000	314,000	0.92	288,900	3,950	17,300	583,000	0	116,600			14-Aug
		Sockeye	**4,432,000**	**1,925,300**		**424,900**	**35,000**	**400,000**	**2,734,130**	**1,697,870**	**2,197,470**	**0**	**0**	
October 7	TAC Date	Early Stuart	47,000	47,000	NA	NA	320	4,180	47,000	0	4,700	2,790	46,500	4-Jul
		Early Summer	165,000	137,000	0.39	53,400	1,500	13,400	165,000	0	16,500	3,320	161,300	4-Aug
		Summer	1,044,000	1,044,000	0.06	62,600	10,000	114,400	1,044,000	0	104,400	71,930	1,044,700	11-Aug
		Late	231,000	231,000	0.92	212,500	2,000	47,300	231,000	0	46,200	6,820	205,300	16-Aug
		Sockeye	**1,487,000**	**1,459,000**		**328,500**	**13,820**	**179,280**	**1,487,000**	**0**	**171,800**	**84,860**	**1,457,800**	

* The TAC is determined by the run sizes and TAC deductions (spawning escapement targets, management adjustments, projected test fishing catches and AF Exemptions) that were in effect when Panel control of the last U.S. fishery area was relinquished.

** In a no TAC situation, the allowable harvest is the maximum harvest allowed under LAER management as identified in Canada's Escapement Plan The allowable harvest (LAER) is not a target and is usually by-catch in fisheries directed at other stocks or species with some limited directed terminal harve

*** Spawning escapment target, test fishing deductionsand aboriginal fishery exemptions not in place until July 15 Panel meeting.

The goals for each Sockeye management group were established by applying Canada's Spawning Escapement Plan to the forecasted pre-season run size. For pre-season planning purposes, harvest rules for Early Stuart, Early Summer, and Summer run Sockeye were constrained by a Low Abundance Exploitation Rate (LAER) limit of up to10% while the Late-run LAER limit was up to 20%. Harvest rules were further constrained by a 60% Total Allowable Mortality (TAM) rate for all management groups.

Table 8-3 Fraser River Sockeye Salmon Escapement Plan and Application of the Plan to each Management Group across a Range of Forecast Abundances

	Harvest Rule Parameters				
Management Unit	**Low Abundance ER (LAER)**	**TAM Cap**	**Lower Fishery Reference Point**	**Upper Fishery Reference Point**	**Pre-season pMA @p50**
Early Stuart	10%	60%	108,000	270,000	0.89
Early Summer (w/o misc)	10%	60%	100,000	250,000	0.39
Summer (w/o misc)	10%	60%	1,250,000	3,125,000	0.06
Late (w/o misc)	20%-30%	60%	300,000	750,000	0.92

Management Unit		**Pre-season Forecast Return**				
		p10	p25	**p50**	p75	p90
Early Stuart	forecast	42,000	64,000	**99,000**	158,000	253,000
	TAM Rule (%)	0%	0%	**0%**	32%	57%
	Escapement Target	42,000	64,000	**99,000**	108,000	108,000
	MA	37,400	57,000	**88,100**	96,100	96,100
	Esc. Target + MA	79,400	121,000	**187,100**	204,100	204,100
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**0%**	0%	19%
	Allowable ER	10%	10%	**10%**	10%	19%
	Allowable Harvest	4,200	6,400	**9,900**	15,800	48,900
	2017 Performance					
	Projected S (after MA)	20,000	30,500	**47,200**	75,400	108,200
	BY Spawners	86,311	86,311	**86,311**	86,311	86,311
	Proj. S as % BY S	23%	35%	**55%**	87%	125%
	cycle avg S	210,606	210,606	**210,606**	210,606	210,606
	Proj. S as % cycle S	9%	14%	**22%**	36%	51%

Management Unit		**Pre-season Forecast Return**				
		p10	p25	**p50**	p75	p90
Early Summer (w/o RNT)	*lower ref. pt. (w misc)*	137,200	137,200	**137,200**	137,200	137,200
	upper ref. pt. (w misc)	343,000	343,000	**343,000**	343,000	343,000
	forecast (incl. misc)	95,000	166,000	**343,000**	792,000	1,971,000
	TAM Rule (%)	0%	17%	**60%**	60%	60%
	Escapement Target	95,000	137,200	**137,200**	316,800	788,400
	MA	31,400	48,000	**53,500**	129,900	323,200
	Esc. Target + MA	126,400	185,200	**190,700**	446,700	1,111,600
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	0%	**44%**	44%	44%
	Allowable ER	10%	10%	**44%**	44%	44%
	Allowable Harvest	9,500	16,600	**152,300**	345,300	859,400
	2017 Performance					
	Projected S (after MA)	64,100	110,600	**137,300**	317,200	789,200
	BY Spawners	210,690	210,690	**210,690**	210,690	210,690
	Proj. S as % BY S	30%	52%	**65%**	151%	375%
	cycle avg S	81,685	81,685	**81,685**	81,685	81,685
	Proj. S as % cycle S	78%	135%	**168%**	388%	966%

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Summer	*lower ref. pt. (w misc)*	1,375,100	1,375,100	**1,375,100**	1,375,100	1,375,100
(w. RNT & Har)	*upper ref. pt. (w misc)*	3,437,750	3,437,750	**3,437,750**	3,437,750	3,437,750
	forecast	1,065,000	1,861,000	**3,407,000**	6,631,000	12,560,000
	TAM Rule (%)	0%	26%	**60%**	60%	60%
	Escapement Target	1,065,000	1,375,100	**1,375,100**	2,652,400	5,024,000
	MA	53,300	68,800	**82,500**	159,100	401,900
	Esc. Target + MA	1,118,300	1,443,900	**1,457,600**	2,811,500	5,425,900
	LAER	10%	10%	**10%**	10%	10%
	Available ER at Return	0%	22%	**57%**	58%	57%
	Allowable ER	10%	22%	**57%**	58%	57%
	Allowable Harvest	106,500	417,100	**1,949,400**	3,819,500	7,134,100
	2017 Performance					
	Projected S (after MA)	910,600	1,371,700	**1,370,100**	2,642,800	5,046,100
	BY Spawners	1,928,582	1,928,582	**1,928,582**	1,928,582	1,928,582
	Proj. S as % BY S	47%	71%	**71%**	137%	262%
	cycle avg S	1,577,700	1,577,700	**1,577,700**	1,577,700	1,577,700
	Proj. S as % cycle S	58%	87%	**87%**	168%	320%

Management Unit		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
Late	*lower ref. pt. (w misc)*	314,000	314,000	**314,000**	314,000	314,000
(w/o Har)	*upper ref. pt. (w misc)*	785,000	785,000	**785,000**	785,000	785,000
	forecast	113,000	247,000	**583,000**	1,292,000	2,849,000
	TAM Rule (%)	0%	0%	**46%**	60%	60%
	Escapement Target	113,000	247,000	**314,000**	516,800	1,139,600
	MA	84,800	210,000	**288,900**	496,100	1,139,600
	Esc. Target + MA	197,800	457,000	**602,900**	1,012,900	2,279,200
	LAER	20%	20%	**20%**	30%	30%
	Available ER at Return	0%	0%	**0%**	22%	20%
	Allowable ER	20%	20%	**20%**	30%	30%
	Allowable Harvest	22,600	49,400	**116,600**	387,600	854,700
	2017 Performance					
	Projected S (after MA)	51,500	106,700	**242,500**	461,200	997,200
	BY Spawners	321,018	321,018	**321,018**	321,018	321,018
	Proj. S as % BY S	16%	33%	**76%**	144%	311%
	cycle avg S	177,190	177,190	**177,190**	177,190	177,190
	Proj. S as % cycle S	29%	60%	**137%**	260%	563%
Allowable Harvest (TF, US, CDN)		142,800	489,500	**2,228,200**	4,568,200	8,897,100
Total projected spawners		1,046,200	1,619,500	**1,797,100**	3,496,600	6,940,700

Management Adjustments (MAs) of 88,100 Early Stuart, 53,500 Early Summer, 82,500 Summer-run and 288,900 Late-run Sockeye were added to the spawning escapement targets to increase the likelihood of achieving the escapement targets. The application of a LAER for any management group indicates that spawning escapement targets are unlikely to be reached and therefore obviates the need for management adjustments. In 2017 this was the case pre-season for Early Stuart as it was apparent that for a range of pre-season run size forecasts LAER management was necessary

The preseason MAs were derived from historical proportional differences between estimates (pDBE). For the Early Summer and Summer-run aggregates the pre-season pDBE was the weighted average of each run component's median pDBE using historic data and their median preseason forecast abundances. For Early Summer-run, the three components consisted of Chilliwack, Pitt and the remaining Early Summer-run stocks while the Summer-run aggregate was divided into Harrison and non-Harrison components. The projected Total Allowable Catch (TAC) of Fraser River Sockeye for international sharing based on the median forecasted

abundances and bilaterally agreed deductions was 1,697,870 Sockeye, of which 16.5% were allocated to the United States (U.S.).

Pre-season model runs indicated that if the in-season return was less than the median forecast and similar to the p25 forecast commercial and recreational fisheries directed on Sockeye were unlikely and limited harvest opportunities would be available for First Nations FSC fisheries due to constraints required to achieve spawning escapement targets. Pre-season model runs also indicated it was unlikely the Summer-run TAC could be fully harvested due to fisheries constraints required to achieve spawning escapement targets for co-migrating Early Summer and Late-run stocks.

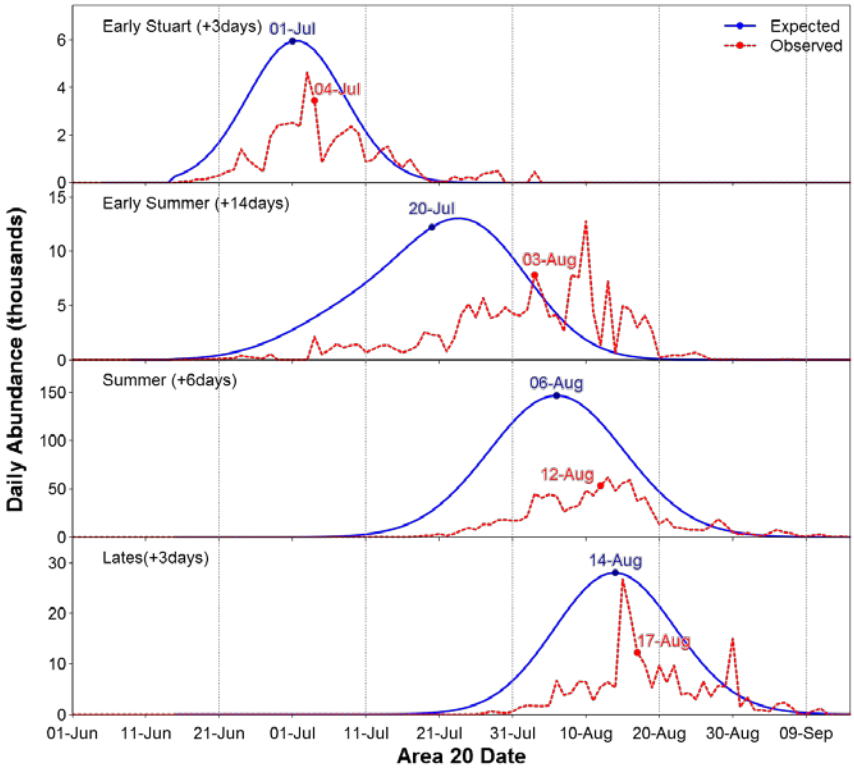


Figure 8-1 Pre-Season Projections and Post-Season Reconstruction of Daily Fraser River Sockeye Salmon Abundance by Management Group

8.2.2 IN-SEASON ASSESSMENT

Marine migration timing was later than pre-season expectations for all management groups: 3 days for Early Stuart, 14 days for Early Summer, 6 days for Summer and 3 days for Late-run. Sockeye.

The Johnstone Strait diversion rate was 71% compared to a pre-season forecast of 51%.

Returns for all management groups were substantially below median pre-season forecasts (Early Stuart run: 47,000, 53% below median forecast, Early Summer run: 165,000, 52% below median forecast, Summer-run: 1,044,000, 69% below median forecast and Late-run: 231,000, 64% below median forecast) (Table 8-2). In context to the pre-season forecast range, the Early Stuart and Summer returns were similar to the p10 forecast and the Early Summers and Lates were similar to the p25 forecast.

Fraser River discharge declined at the start of the season and remained low- near historical minimal discharge from late July to the end of the season. Fraser River daily water temperatures fluctuated a few degrees above the historical mean reaching historical maximum observations, twice. In-season model estimates of DBEs that take into account environmental conditions in the Fraser River were similar to pre-season medians adopted by the Panel with the exception of Summer runs where the model estimate was much larger (-25% vs -6%, respectively). However, low in-season run size estimates resulted in LAER management for all management groups and hence did not require changes to the pre-season pMA values (no management implications).

Table 8-4 Total Allowable Catch

		Sockeye	
TOTAL ALLOWABLE CATCH			
In-season Total Run Size		**1,487,000**	
Deductions		**1,980,700**	
In-season Spawning Escapement Target		1,459,000	
In-season Management Adjustment		328,600	
Aboriginal Fishery Exemption (AFE)		179,300	
Post-season Test Fishing Catch		14,100	
Total Allowable Catch	*1, 2*	**0**	
UNITED STATES			
Washington Share		**-900**	
Washington Share of TAC	*1, 3*	0	16.5%
Payback		-900	
Washington Catch		**1,400**	
Deviation		**-2,300**	
In-season Alaska Catch Estimate		0	
CANADA			
Canadian Share of TAC + AFE		**178,400**	
Canadian Catch excluding ESSR Catch		**69,300**	
Deviation		**109,100**	

1 TAC and Washington sockeye share according to Annex IV, Chapter 4 of the Pacific Salmon Treaty.

2 TAC may not equal the total run minus total deductions shown due to adjustments required when the run size of individual management groups is less than the nominal deductions.

3 United States share according to revised Annex IV of the Pacific Salmon Treaty:
Sockeye: 16.5% of the TAC - payback (maximum 5% of share).
Pink: 25.7% of the TAC - payback (maximum 5% of share).

8.2.3 POST-SEASON ASSESSMENT

The post season return of adult Fraser Sockeye was estimated to be 1,487,000. The run size was 65% below the brood year run size (4.2M) and 87% below the cycle line average (11M). The return was the second smallest (after 2016) over the last 70 years.

Fraser River Sockeye salmon catch in all fisheries totaled 85,000 fish, of which 69,000 fish were caught in Canadian fisheries, 1,400 fish were caught in U.S. fisheries and 14,000 fish were caught in test fisheries. All Canadian catch occurred in First Nations Food, Social and Ceremonial fisheries (FSC). In Washington, all catch occurred in Treaty Indian Ceremonial and Subsistence fisheries. Current estimates exclude anticipated bycatch of Fraser Sockeye in Alaskan fisheries directed at other species. A small amount of Fraser Sockeye by-catch in fisheries directed at other species has yet to be included as the stock of origin is uncertain. See Appendix 2 for additional bycatch estimates of Sockeye salmon in fisheries directed at other species. The post season exploitation rate is estimated to be 5.7%.

Table 8-5 Post-Season Catch and Exploitation Rate Estimates by Management Group by USA, Canada and Fraser Panel Test Fisheries

	Fraser Sockeye				
	Early Stuart	Early Summer	Summer	Late	Total
CANADIAN CATCH					
Panel Area	0	0	0	0	0
Non-Panel Areas	0	0	0	0	0
Commercial Catch	**0**	**0**	**0**	**0**	**0**
Marine FSC	0	510	6,300	2,400	9,200
Fraser River FSC	2,500	1,400	54,300	1,800	60,000
Economic Opportunity / Demo	0	0	0	0	0
First Nations Catch	**2,500**	**1,900**	**60,600**	**4,200**	**69,200**
Marine Recreational	0	0	0	0	0
Fraser Recreational	0	0	0	0	0
Charter (Albion, A12Chum)	0	10	100	40	140
ESSR	0	0	0	0	0
Non-commercial Catch	**0**	**10**	**100**	**40**	**140**
Canadian Total	**2,500**	**1,900**	**60,700**	**4,200**	**69,300**
UNITED STATES CATCH					
Treaty Indian (TI)	0	0	0	0	0
All Citizen (AC)	0	0	0	0	0
Commercial catch	**0**	**0**	**0**	**0**	**0**
TI Ceremonial	0	30	810	580	1,400
AC Recreational	0	0	0	0	0
Non-commercial Catch	**0**	**30**	**810**	**580**	**1,400**
Washington Total	0	30	810	580	1,400
Alaska	0	0	0	0	0
United States Total	**0**	**30**	**810**	**580**	**1,400**
TEST FISHING CATCH					
Canada	310	890	5,300	810	7,300
United States	0	10	270	70	350
Commission (Panel Areas)	310	900	5,600	880	7,700
Canada (non-Panel Areas)	10	530	4,800	1,100	6,500
Test Fishing Total	**320**	**1,400**	**10,400**	**2,000**	**14,100**
TOTAL CATCH and EXPLOITATION RATE					
Total Catch in All Fisheries	2,800	3,300	71,900	6,800	84,900
Preliminary Exploitation Rate	6.0%	2.0%	6.9%	2.9%	5.7%

DFO's near-final estimates of spawning escapements to streams in the Fraser River watershed are as follows:

Table 8-6: Near-final Sockeye Salmon Escapement Summary by Management Unit.Management Unit	Near-final Estimate of Adult Spawners	% Spawning Success	Effective Female Spawners

Early Stuart	15,423	83.6%	7,136
Early Summer	65,578	96.5%	33,668
Summer	783,661	96.3%	437,570
Late	75,360	91.0%	37,287
TOTAL	940,022	95.7%	515,661

There was no Total Allowable Catch (TAC) calculated for Fraser Sockeye, based on the calculation method set out in Annex IV, Chapter 4 of the Pacific Salmon Treaty and the July 7, 2017 Commission Guidance. All licensed Fraser Sockeye catch was bycatch in fisheries directed at other species with the exception of some directed FSC opportunities provided in areas where regular access was limited by wildfires or in areas where access to other species or stocks was limited. All harvest was managed and accounted for under the LAER limits set by Canada's Escapement Plan. In these calculations, the TAC is fixed on the date that Panel control of the last U.S. Panel Area was relinquished (October 7 in 2017), while catches are post-season estimates as of October 2.

8-7 Total Allowable Catch

		Sockeye	
TOTAL ALLOWABLE CATCH			
In-season Total Run Size		**1,487,000**	
Deductions		**1,980,700**	
In-season Spawning Escapement Target		1,459,000	
In-season Management Adjustment		328,600	
Aboriginal Fishery Exemption (AFE)		179,300	
Post-season Test Fishing Catch		14,100	
Total Allowable Catch	*1, 2*	**0**	
UNITED STATES			
Washington Share		**-900**	
Washington Share of TAC	*1, 3*	0	16.5%
Payback		-900	
Washington Catch		**1,400**	
Deviation		**-2,300**	
In-season Alaska Catch Estimate		0	
CANADA			
Canadian Share of TAC + AFE		**178,400**	
Canadian Catch excluding ESSR Catch		**69,300**	
Deviation		**109,100**	

1 TAC and Washington sockeye share according to Annex IV, Chapter 4 of the Pacific Salmon Treaty.

2 TAC may not equal the total run minus total deductions shown due to adjustments required when the run size of individual management groups is less than the nominal deductions.

3 United States share according to revised Annex IV of the Pacific Salmon Treaty:
Sockeye: 16.5% of the TAC - payback (maximum 5% of share).
Pink: 25.7% of the TAC - payback (maximum 5% of share).

8.3 First Nations FSC and Treaty DOMESTIC Fisheries

All licensed Fraser Sockeye catch occurred as bycatch in fisheries directed at other species or as limited directed Sockeye FSC opportunities in areas where regular access was limited by wildfire evacuations or in areas where access to other species or stocks was limited. For catch estimates see Table 8-6 of the total FSC catch (69,390) approximately 20,000 was catch in licensed, directed fisheries.

Please refer to Appendix 2 for additional Sockeye salmon catch estimates.

8.4 RECREATIONAL FISHERIES

There were no recreational fisheries directed on Fraser River Sockeye in 2017. For catch estimates, see Table 8-6. It is expected that a small amount of Fraser Sockeye by-catch may have been encountered in recreational fisheries directed at other species. See Appendix 4 for additional recreational Sockeye catch.

8.5 COMMERCIAL FISHERIES

There were no directed commercial fisheries on Fraser River Sockeye in Canada or the United States in 2017. For catch estimates, see Table 8-6 and Appendix 8 for Sockeye bycatch in commercial fisheries directed on other species.

There were no First Nations- directed commercial fisheries on Fraser River Sockeye in Canada or the United States in 2017. For catch estimates, see Table 8-6 and Appendix 8 for Sockeye bycatch in commercial fisheries directed on other species.

8.6 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

There were no ESSR opportunities directed on Fraser River Sockeye in 2017.

9 FRASER RIVER PINK SALMON

9.1 OBJECTIVES AND OVERVIEW

In 2017 the Fraser River Panel (FRP) adopted the p50 probability run size forecast for Fraser Pink salmon (8.69M) for pre-season planning purposes. At the p50 run size forecast TAC for international sharing was available and pre-season plans took this into consideration. All fishery planning focused on staying within constraints to minimize impacts on less abundant stock groups and species of concern. Actual in-season harvest opportunities were dependent on in-season stock assessments.

Fishing plans incorporate provisions to meet escapement objectives and meet conservation objectives for stocks of concern while considering international and domestic objectives. Fishing plans include the following assumptions and guiding principles (in no particular order):

- The FRP operated in accordance with Chapter 4, Annex IV of the Pacific Salmon Treaty;
- The U.S. share of the annual Fraser River Pink salmon total allowable catch (TAC), harvested in the waters of Washington State shall not exceed 25.7% of the TAC;
- Canada's escapement plan specified escapement requirements that varied with run size;
- The escapement target varies with run size and was set at 6M Fraser Pink at a run size greater than 7.059M and the maximum exploitation rate cap was 70%;
- Harvest of Fraser Pink salmon may be constrained by the management objectives for Fraser Sockeye and for stocks of concern, particularly Interior Fraser River (IFR) Coho salmon and IFR Steelhead;

- Due to conservation concerns alternative fishing gear and fishing strategies may be employed to access Fraser Pink TAC. Alternative gears used in the past have included beach seines and shallow seines in the Fraser River. In the marine areas, varying fishing strategies and gear are being considered such as allowing purse seines with independent observer coverage to access areas at the mouth of the river and possibly within the river.

- Further, when Pink TAC is available and there are bycatch constraints for other species (i.e. Fraser Sockeye) the Department may consider decision rules similar to recent years where the total Sockeye mortalities associated with a gear specific Pink fishery is 1% or less for Sockeye. This calculation takes into account the release mortality rate of the gear being used to harvest Pink salmon as well as the estimated proportion of Sockeye expected to be encountered in the fishery.

9.2 STOCK STATUS

9.2.1 PRE-SEASON ASSESSMENT

Pre-season expectations were for a median run size (p50 level) of 8.693 million Fraser River Pink salmon with a 50% chance that the run size would be between 6.177 million (at p25) and 12.353 million p75).

Pre-season expectations of diversion rate for Fraser River Pink through Johnstone Strait were 50% and the expected Area 20 50% migration timing date was August 28th.

The pre-season spawning escapement goal was 6 million Fraser River Pink spawners at the median forecast (p50).

Harvest constraints were established by applying Canada's Spawning Escapement Plan to the forecasted pre-season run size. The harvest rule for Fraser River Pink salmon varied with abundance and was constrained by a 70% exploitation rate.

The projected Total Allowable Catch (TAC) of Fraser River Pink for international sharing based on the median forecasted abundance and bilaterally agreed deductions was 2,581,000 Fraser Pink, of which 25.7% were allocated to the United States (U.S.).

9.2.2 IN-SEASON ASSESSMENT

Marine migration timing was 10 days earlier than pre-season expectations which created more run timing overlap with the weak Sockeye returns. The Pink salmon migration also declined precipitously after August 30th which decreased the run size and constrained Pink directed fisheries planning.

The Johnstone Strait diversion rate was 57% compared to a pre-season forecast of 50%.

The Pink return (3,700,000) was substantially below the median pre-season forecasts (58% below median forecastand approximately 20% below the p10 forecast).

The Total Allowable Catch (TAC) of Fraser River Pink for international sharing based on the final in-season run size was 270,900 Pinks of which 25.7% (69,600) were allocated to the United States (U.S.) and the remainder to Canada (201,300).

Fraser River discharge declined at the start of the season and remained low near historical minimal discharge from late July to the end of the season. Fraser River daily water temperatures fluctuated a few degrees above the historical mean reaching historical maximum observations twice. Although Fraser River discharge and temperature can have effects on salmon migration, environmental conditions rarely play a role in Pink management as they do for Fraser Sockeye.

9.2.3 POST-SEASON ASSESSMENT

The post season return of Fraser Pink was estimated to be 3,616,000. The run size was 36% below the brood year run size (5.8M) and was estimated to be the second smallest (after 1999) over the last 50 years.

Fraser River Pink salmon catch in all fisheries totaled 158,800 fish, of which 35,200 fish were caught in Canadian fisheries, 106,000 fish were caught in U.S. fisheries and 17,600 fish were caught in test fisheries. All Canadian catch occurred in First Nations Food, Social and Ceremonial fisheries (FSC). In Washington, nearly all catch occurred in commercial fisheries directed on Pink salmon. A small amount of Fraser Pink by-catch in fisheries directed at other species has yet to be included as the stock of origin is uncertain. Final catch estimates will be available in January 2018. See Appendix 3 for additional bycatch estimates of Pink salmon in fisheries directed at other species. The post season exploitation rate is estimated to be 4.4% which is the lowest since 1959.

DFO spawning escapement enumeration programs were not conducted on Fraser Pink salmon and will not be available. Spawner abundance was estimated indirectly at 3,457,200 Pink Salmon by subtracting the total catch from the run size.

Total Allowable Catch (TAC) calculated for Fraser Pink was based on the calculation method set out in Annex IV, Chapter 4 of the Pacific Salmon Treaty and the July 7, 2017 Commission Guidance. In these calculations, the TAC is fixed on the date that Panel control of the last U.S. Panel Area was relinquished (October 7 in 2017).

Tables and Figures

With the exceptions of Tables 9-1 & 4-3, all tables and figures are adapted from or courtesy of the Pacific Salmon Commission.

Table 9-1Pre-Season Run Size Abundance Forecast Range for Fraser Pink Salmon

	Probability that Return will be at/below Specified Run Size				
	p10	p25	p50	p75	p90
TOTAL PINK	4,447,000	6,177,000	8,693,000	12,353,000	16,682,000

Table 9-2 Pre-Season (top) and Post-Season (bottom) Values for TAC and Other Management Parameters

Date	Management Group	Total Abundance	TAC*				Available Harvest **	Catch to date	Mission Escape. to date	50% Migration Date
			Spawning Escapement Target***	Test Fishing ***	Total Deductions	Total Allowable Catch				Area 20
July 7 Pre-season	Pink	8,693,000	6,000,000	112,000	6,112,000	2,581,000	2,693,000			28-Aug
October 7 TAC Date	Pink	3,700,000	3,409,100	20,000	3,429,100	270,900	290,900	158,750	3,477,600	19-Aug

* The TAC is determined by the run sizes and TAC deductions (spawning escapement targets and projected test fishing catches) that were in effect when Panel control of the last U.S. fishery area was relinquished.

** Available Harvest = Total abundance minus spawning escapement target.

*** Spawning escapment target, test fishing deductions not in place until July 15 Panel meeting.

Table 9-3 2017 Fraser Pink Escapement Plan and Application Across a Range of Forecast Abundances

2017 Fraser Pink Escapement Plan	
Run Size	**Escapement Plan**
Less than 7.059M	Exploitation rate increases linearly from 0% at run size =0 to 15% at run size = 7.059M
Between 7.059M-20M	Fixed Escapement. Escapement goal = 6,000,000
Greater than 20M	Exploitation Rate Cap = 70%

	2017 Pre-season Forecast Return				
	p10	p25	**p50**	p75	p90
forecast	4,447,000	6,177,000	**8,693,000**	12,353,000	16,682,000
escapement target	4,027,000	5,366,000	**6,000,000**	6,000,000	6,000,000
allowable ER	9%	13%	**31%**	51%	64%
Available Harvest (TF, US, CDN)	420,000	811,000	**2,693,000**	6,353,000	10,682,000

Table 9-4 Post-Season Catch and Exploitation Rate Estimates by the USA, Canada, and Fraser Panel Test Fisheries.

CANADIAN CATCH	
Panel Area	0
Non-Panel Areas	0
Commercial Catch	**0**
Marine FSC	15,411
Fraser River FSC	16,836
Economic Opportunity / Demo	0
First Nations Catch	**32,246**
Marine Recreational	0
Fraser Recreational	0
Charter (Albion, A12Chum)	2,917
ESSR	0
Non-commercial Catch	**2,917**
Canadian Total	**35,163**
UNITED STATES CATCH	
Treaty Indian (TI)	94,989
All Citizen (AC)	10,941
Commercial catch	**105,930**
TI Ceremonial	26
AC Recreational	0
Non-commercial Catch	**26**
Washington Total	105,956
Alaska	0
United States Total	**105,956**
TEST FISHING CATCH	
Canada	11,798
United States	1,830
Commission (Panel Areas)	13,628
Canada (non-Panel Areas)	4,000
Test Fishing Total	**17,628**
TOTAL CATCH and EXPLOITATION RATE	
Total Catch in All Fisheries	158,747
Preliminary Exploitation Rate	4.4%

Table 9-5 Total Allowable Catch in 2017

		Pink
TOTAL ALLOWABLE CATCH		
In-season Total Run Size		**3,700,000**
Deductions		**3,426,800**
In-season Spawning Escapement Target		3,409,100
In-season Management Adjustment		n/a
Aboriginal Fishery Exemption (AFE)		n/a
Post-season Test Fishing Catch		17,700
Total Allowable Catch	*1, 2*	**273,200**
UNITED STATES		
Washington Share		**70,200**
Washington Share of TAC	*1, 3*	70,200
Payback		0
Washington Catch		**106,000**
Deviation		**-35,700**
In-season Alaska Catch Estimate		0
CANADA		
Canadian Share of TAC + U.S. Payback + AFE		**203,000**
Canadian Catch excluding ESSR Catch		**35,200**
Deviation		**167,800**

1 TAC and Washington sockeye share according to Annex IV, Chapter 4 of the Pacific Salmon Treaty.

2 TAC may not equal the total run minus total deductions shown due to adjustments required when the run size of individual management groups is less than the nominal deductions.

3 United States share according to revised Annex IV of the Pacific Salmon Treaty:
Sockeye: 16.5% of the TAC - payback (maximum 5% of share).
Pink: 25.7% of the TAC - payback (maximum 5% of share).

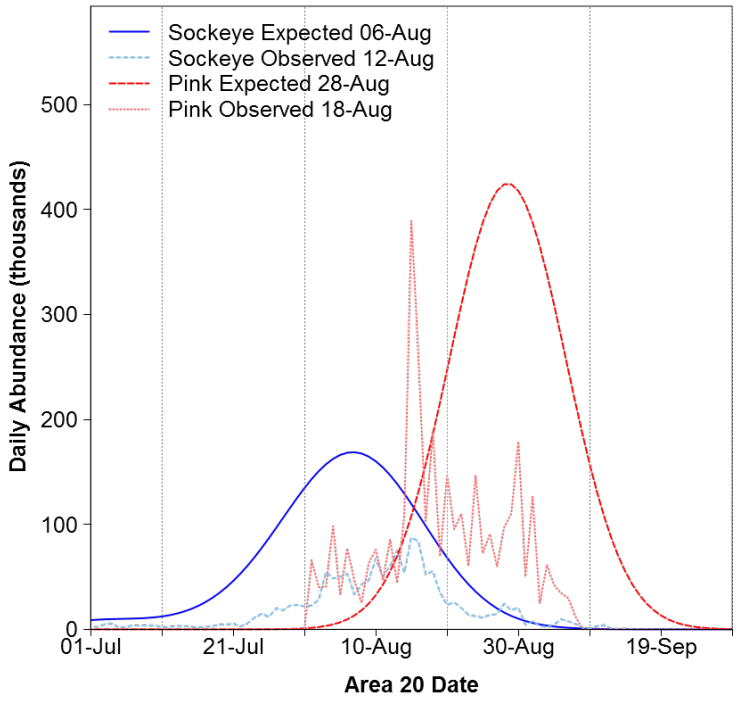


Figure 9-1 Pre-Season Projections and Post-Season Reconstructions of Daily Fraser River Sockeye and Pink Salmon Abundance

9.3 First Nations FSC Fisheries

There were no provisions for directed Pink harvest for FSC-type purposes in any Final Agreements.

There were directed harvest opportunities for Fraser Pinks in First Nations FSC fisheries. See Table 9-4 for estimates of kept Fraser Pink catch.

See Appendix 5 for additional Pink salmon catch estimates.

9.4 Recreational Fisheries

There were Pink retention opportunities in marine area recreational fisheries in 2017. For catch estimates, see Appendix 2. It is unknown how many Fraser Pinks were harvested as the stock of origin is currently unknown. See Appendix 8 for Pink bycatch in Commercial fisheries directed on other species.

9.5 COMMERCIAL FISHERIES

Although there was Fraser Pink Commercial TAC identified in-season there were no Commercial fishery openings in Canada due to the low abundance of Fraser Pink salmon and concerns for Fraser River Sockeye. See Table 9-4 for catch estimates. See Appendix 8 for Pink bycatch in Commercial fisheries directed on other species.

9.6 FIRST NATIONS COMMERCIAL HARVEST

There were no Comprehensive Fisheries Agreements signed for Pink salmon for commercial purposes in the Fraser but there were three Inland Commercial Fishing Enterprises (CFE) operating in the Lower Fraser and BC Interior: Upper Fraser Commercial Fishing Enterprise, Riverfresh (Secwepemc Fisheries Commission) and the Harrison Fisheries Authority that would have had limited in-season Pink TAC for commercial purposes. In 2017, none of these CFE's conducted a demonstration fishery due to low in-season Fraser Pink returns in the area. See Table 9-4 for catch estimates. See Appendix 8 for Pink bycatch in Commercial fisheries directed at other species.

9.7 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

There were no ESSR opportunities directed on Fraser River Pink salmon in 2017. See Table 9-4 for catch estimates.

10 SOUTHERN BC COHO

10.1 OBJECTIVES AND OVERVIEW

Coho stocks in Southern BC are managed domestically and through international Abundance Based Management provisions which are outlined in the Pacific Salmon Treaty. Harvest levels are outlined in the Treaty's Southern Coho Management Plan, which provides maximum exploitation rates dependent on abundance, and it is Canada's responsibility to ensure that its domestic stocks are not harvested beyond the maximum exploitation rate as outlined in the Treaty.

In Southern BC, Coho management measures in commercial and recreational fisheries are implemented based on their impacts to specific stocks. Southern BC Coho management is primarily based on managing Interior Fraser River, Lower Fraser, Strait of Georgia, Johnstone Strait and West Coast Vancouver Island (WCVI) Coho stocks or MUs.

In 2017 an exploitation rate of up to 10% was permitted in Canadian fisheries with an additional 10 percent permitted in U.S. fisheries (as per the Pacific Salmon Treaty management regime). Coho management measures varied in Southern BC in 2017, depending on the area of harvest and impact on specific Coho stocks.

The Canadian objective for Interior Fraser River Coho (including Thompson River Coho) was to manage Canadian fisheries in a highly precautionary manner with fisheries management measures similar to those in place prior to 2014. This approach is expected to achieve an overall exploitation rate in Canadian waters within the 3 to 5 % range.

Assessments of Interior Fraser River Coho salmon stocks in the mid-1990s revealed that alarming declines in spawning populations were occurring in many spawning sites. Low marine survival rates in combination with excessive fishery impacts were identified as key factors in this decline. Beginning in 1997, DFO implemented a number of fishery management measures to reduce the harvest impacts on these stocks, with more severe measures being implemented beginning in 1998. In most years since that time, Canadian fisheries impacting these stocks have been curtailed to limit the exploitation rate to 3 percent or less, with an additional 10 percent permitted in U.S. fisheries (as per the Pacific Salmon Treaty management regime).

Currently, there is no evidence that IFR Coho has departed from the 'low' productivity regime that has persisted since the 1994 return year. Current productivity is still well below that in the relatively high productivity period of 1978-1993.

While the status of Interior Fraser Coho stocks has generally remained poor in spite of the low total exploitation rate limit, there are indications in recent years that their condition might be

improving. In addition, there have been improved returns of Coho in Northern B.C., WCVI, and inside Strait of Georgia stocks in recent years.

No specific management measures were in place in 2017 to protect Strait of Georgia Coho stocks beyond measures put in place for Interior Fraser River Coho.

Management measures in place for WCVI Coho provided opportunities for recreational and commercial fisheries harvest in WCVI areas where Interior Fraser Coho were not considered to be impacted. These were largely terminal opportunities in portions of Area 23-27, where stock composition information showed that Interior Fraser River Coho were not found.

In WCVI areas/times where Interior Fraser River Coho are known to be prevalent, non-retention of unmarked Coho remained in effect. Commercial troll fishery plans permitted marked Coho retention on the WCVI once Interior Fraser River Coho were considered to have moved through the area.

Coho catch and release information from all fisheries can be found in Appendix 6.

10.2 STOCK STATUS

10.2.1 STOCK STATUS- UPPER FRASER RIVER

Interior Fraser

Estimated escapement to the Interior Fraser River in 2017 was 25,600, slightly more than the 2014 parent brood of 19,400. Based upon these escapements and estimated catches, estimated recruits per spawner indicate that we are still in a low productivity regime.

10.2.2 STOCK STATUS – LOWER FRASER RIVER

Currently there is no whole system escapement estimate available for Lower Fraser River (LFR) Coho.

A hatchery Coho indicator stock at Inch Creek hatchery provides estimated rates of survival and minimum estimates of exploitation on marked LFR Coho. For the 2014 brood, survival of hatchery progeny was estimated at 4.3% which is greater than the average since 1998 of 2.4%.

10.2.3 STOCK STATUS- STRAIT OF GEORGIA

Coho salmon production within the Strait of Georgia has declined dramatically since the early 1990s. Marine survivals have been fluctuating near replacement levels with recent estimates in the 1-4% range. 2017 escapement estimates were generally below average with the largest deviations observed in systems south of Nanaimo.

Hatchery stocks

Coho returns to facilities north of Nanaimo were below average in 2017. Escapement to the Puntledge River was less than half of the 12 year average at 2,756 and down from 2016 (3,138). The Big Qualicum River had a strong return in 2016 of over 13,000 fish but declined to 8,136 in 2017 (12 year average of 9,440). Swim surveys of the Little Qualicum River were met with challenging conditions but suggest abundance for this system was well below average at 1,250 fish. Nanaimo River escapement was approximately half of the four year average at 1,393 fish.

Escapements to southern Strait of Georgia stocks were particularly poor at 98 estimated in the Goldstream River (10% of the 4 year average). 618 fish were counted in Shawnigan Creek which was well below the four year average of 2,086.

Wild stocks

In the past, both Black Creek and Myrtle Creek have served as indicators of Strait of Georgia Coho. Myrtle Creek was discontinued as an indicator in 2014. Counts on the Englishman River were below average in 2017 and less than the previous two years. Camera operations in the Millstone River bypass channel totalled 18 fish which was well below expectations of 100-200. Returns to the Colquitz River (near Victoria) were reported to be 30% of average at 312 fish.

Black Creek

2017 Black Creek adult assessments are complete, but estimates still need to be finalized. A total of 605 adults were counted through the fence, but high waters allowed for fish to bypass the fence undetected. Based on a mark recapture program, an estimate of 1,300 adult Coho returned to Black Creek, plus 4,805 jacks that were counted through the fence. This is the highest reported number of jacks since inception of the Black Creek assessment program in 1985. Over the past 17 years (2000-2016), the average number of jacks is 926.

The smolt production contributing to 2017 brood year was 25,412. This is below the 22 year average smolt production of 51,800 smolts. The parental brood year estimate was 6,800 (2014) adults. The 2017 return indicates continued poor marine conditions during the 2016-2017 marine residence for Strait of Georgia Coho salmon.

2017 Strait of Georgia Coho Jacks Observations

In 2017, one major anomaly observed in many of the northern Strait of Georgia Coho streams was a higher than average number of Coho jacks. Black Creek reported 4,800, Oyster River 1,800, Quinsam River 2,100 and Village Bay Creek with 228, which is nearly double that of adults. This high jack rate appears to be limited to the northern Strait of Georgia, as many systems both to the north (Adam, Nimpkish, Keogh) and south (Puntledge, Big Qualicum, Englishman) reported average, or expected numbers of jacks. At this time it is unknown what this higher than normal jack rate in these systems means and further review is required.

10.2.4 STOCK STATUS- WEST COAST VANCOUVER ISLAND

In most recent years, spawning abundances for wild WCVI Coho populations are about historic levels. However, the overall production of WCVI Coho is also likely much lower than historic levels, so spawning levels are being maintained by reduced fishery impacts. . Hatchery production has also been reduced. Results suggest escapement near or slightly above recent year averages.

10.2.5 STOCK STATUS- JOHNSTONE STRAIT AND MAINLAND INLET

The Keogh River plays an important role as the wild Coho indicator stock for the upper Johnstone Strait area. Smolt production in 2016 was around 92,000, which continues the above average smolt output from this system since 2009. Adult escapement of 335 Coho in 2017 indicates that marine survival was again low compared to the steady improvements we had seen prior to 2015. Adult returns in 2017 are the lowest on record since the more intensive monitoring of adult escapement began in 1998. Smolt production from the Keogh in 2017 of approximately 82,000 is again above the long term average of 74,000. This strong smolt production could possibly buffer the poor marine conditions anticipated to persist through 2017 and 2018. Expectations in 2018 will be for below average returns.

The marine survival indicator for Area 13 is the Quinsam River Hatchery. Consistent with a continuation of poor marine conditions, the Quinsam Coho return was well below average, at approximately 3,200 adults. This return is less than half the 4- and 12-year average escapement for Quinsam. Notably, the jack component was extremely high, with nearly 2,100 Coho jacks reported. Village Bay Creek on Quadra Island also noted a very high jack to adult ratio (approx. 2:1) based on video monitoring at the fence. At this time it is unknown what this higher than normal jack rate in these systems means and further review is required.

Interestingly, the 2017 Tsitika River count of 930 adult summer-timed Coho was well above the 4- and 12-year average escapement for that system. The parental brood year (2014) peak count was 668 adults.

Extensive escapement reports for Coho in many systems are indicating low abundances, and a decline from parental brood years. The below average returns and continued poor marine survivals for Coho indicate continuing trends of low abundance of Coho in 2018.

10.3 FIRST NATIONS

WCVI FSC and Treaty Fisheries

FSC gill net and hook and line had openings during the summer and fall seasons. The Somass First Nations harvest was 587 Coho. The Maa-nulth domestic harvest was 603 pieces. The

WCVI NTC non-treaty First Nations' reported catch was 5,392 Coho. The remaining non-NTC First Nations harvest reported 1,907 Coho. The total combined harvest was 8,489 Coho.

Lower Fraser

There were no Coho-directed fisheries in the Lower Fraser in 2017. Lower Fraser FSC fisheries targeting other species of salmon encountered 856 Coho, of which 626 were kept and 230 were released. Both hatchery-marked and wild Coho were authorized to be retained in FSC fisheries after the Coho window closure.

BC Interior

There were no Economic Opportunity (EO), demonstration- or ESSR fisheries in the BC Interior (Fraser River above Sawmill Creek) targeting Coho in 2017. FSC fisheries in the area target Sockeye, Chinook or Pink salmon. This year, First Nations harvesters were requested to release unharmed any Coho incidentally caught. Directed opportunities were permitted subject to abundance, at the fence on McKinley Creek, a tributary of the Quesnel River; in the following tributaries to the Thompson River: Dunn Creek (fence) and the Bonaparte River (fishway); and at the Deadman River fence. Catch reports indicate 108 Coho were retained in directed FSC fisheries.

Strait of Georgia FSC Fisheries and Treaty Domestic Fisheries

First Nations catch in the Strait of Georgia is estimated at 684 Coho kept.

Johnstone Strait

First Nations catch in the Johnstone Strait is estimated at 130 Coho kept and 7 released.

10.4 RECREATIONAL

10.4.1 TIDAL RECREATIONAL FISHERIES

Tidal recreational fisheries can be categorized as occurring in: mixed stock areas, where multiple stocks are found concurrently in the same fishing area, and in terminal areas where local single stocks dominate the catch. Areas where mixed stocks occur typically have more restrictive management measures in place that are designed to protect Interior Fraser Coho stocks. In terminal areas, opportunities are provided based on abundance forecasts. From 1998-2013, all Canadian recreational, commercial and First Nations fisheries were managed to limit the exploitation rate on Interior Fraser Coho stocks to 3%. In 2014 DFO approved a temporary increase in the exploitation rate on Interior Fraser Coho up to 16%, based on improved abundance forecasts. In 2015 DFO reduced the Canadian exploitation rate to a maximum of 10%, again based on forecasted abundance. Since 2016 DFO has returned to a 3% to 5%

exploitation rate on Interior Fraser Coho. The table below outlines the areas in Southern BC and the general Coho regulations pertaining to them.

Table 10-1 Southern BC Coho Fishery Regulations in 2017

Mixed stock fishing area	Daily Limit (marked or unmarked)	Size Limit	Coho Season
Johnstone Strait	2, 1 may be unmarked	30 cm.	June 1 – Jul 31
Johnstone Strait	2 marked	30 cm.	Aug 1 – Dec 31
Northern Georgia Strait	2 marked	30 cm.	June 1 – Dec 31
Southern Georgia Strait	2 marked	30 cm.	June 1 – Dec 31
Southern Georgia Strait (19)	2, 1 may be unmarked	30 cm.	Oct 1 – Dec 31
Juan de Fuca Strait	2 marked	30 cm.	Jun 1 – Dec 31
Juan de Fuca Strait (20-5 to 20-7)	4, 1 may be unmarked	30 cm.	Oct 1 – Dec 31
WCVI - Inshore	2	30 cm.	June 1 – Dec 31
WCVI - Offshore	2 marked	30 cm.	June 1– Dec 31

* for specific management measures in specific areas refer to the information provided in the Fishery Notices.

The tables below displays Coho catch and release information for sport Coho fisheries in Southern BC. DFO uses the surfline as a boundary between distinguishing Coho catch in the mixed-stock fishery (offshore) and catch in the terminal area (inside the surfline).

Table 10-2 Retained (Kept) Catch and Release Estimates from Coho in Southern BC, 2017

Area	Kept	Released
WCVI – Inshore (20W – 27)	10,390	4,102
WCVI – Offshore (21 – 127)	13,953	23,428
Strait of Georgia (13-19 May – Sep*)	8,588	32,529
Fraser River**	0	0

Juan de Fuca (19-20 Feb – Oct)	7,618	14,588
Johnstone Strait (11-12 Jun-Aug)	5,350	11,596
TOTALS	45,899	86,243

** Tidal and Non-tidal Fraser R. catch estimates are not yet available.

10.4.2 NON-TIDAL RECREATIONAL FISHERIES

Region 1 Vancouver Island Tributaries

Fresh water conditions were improved in 2017 compared to past years and no additional restrictions were in effect on Vancouver Island due to drought like conditions.

Northern Vancouver Island

Typical non-tidal openings for Coho were available on:

- Cayeghle River (including the Colonial River) from April 1 to March 31 for one per day;
- Campbell/Quinsam River from October 1 to December 31 for four per day, two of which could be marked over 35 cm;
- Cluxewe River from April 1 to March 31 for two per day, hatchery marked only;
- Kokisilah River from April 1 to March 31 for one per day, maximum size limit of 35 cm;
- Nahwitti River from April 1 to March 31 for one per day; and
- Quatse River from June 15 to March 31 for two per day, hatchery marked only.

Anglers were restricted to the use of barbless hooks. Catch is not estimated in these fresh water fisheries.

Strait of Georgia

Typical Non-tidal openings for Coho are available on:

- Qualicum River from October 16 to December 31 for four per day, two of which could be over 35 cm;
- Chemainus River from October 15 to March 31 for one per day, maximum size limit of 35 cm;
- Nanaimo River from October 15 to March 31 for one per day, maximum size limit of 35 cm; and Catch is not estimated in these fresh water fisheries.

West Coast Vancouver Island

Typical Non-tidal openings for Coho were available on:

- Somass/Stamp River from August 25 to December 31 the daily limit was two, marked or unmarked. A single, barbless hook restriction is in effect all year and there is a bait restriction in the Upper Somass and Stamp from May 1 to October 31.
- Nitinat River from October 15 to December 31 the daily limit for Coho was two, marked or unmarked. The 2 week closure between October 1 and October 14 provides protection to Chinook salmon during the peak spawning period. The area above Parker Creek is closed to fishing. A single barbless hook restriction is in effect all year and there is also a bait restriction in effect.
- Conuma River opened August 25 with a daily limit of two Coho, marked or unmarked and was reduced to one per day from September 26 to December 31 in response to observations of a lower than expected abundance in-river.
- Washlawlis River and Waukwass River and other west coast rivers are open year-round with a daily limit of one Coho, marked or unmarked. Barbless hooks are required. No creel survey information is collected. Other rivers receiving some directed effort for Coho stocks are the Wakeman, Artlish, Zeballos, Tahsis, Burman, Ash, Taylor, Pacheena, Toquart and Leiner. The quota for all west coast streams unless identified above is zero (0).

Catch is not estimated in these fresh water fisheries.

Fraser River and Tributaries

During 2017, the retention of two hatchery-marked Coho per day was permitted once the majority of the Interior Fraser wild Coho population was through the area. The dates by area were as follows:

- From the CPR Bridge at Mission, BC upstream to the Highway #1 Bridge at Hope - October 10 to December 31.
- From the Highway #1 bridge at Hope to Sawmill Creek - October 15 to December 31.
- There are no directed Coho openings in the Fraser River or tributaries upstream of Sawmill Creek.

The following tributaries to the Fraser River were open during the dates stated below:

- Alouette River and De Boville Slough from October 1 to December 31 for one per day.
- Coquitlam River from September 1 to December 31 for one per day.
- Kanaka Creek from November 1 to November 30 for one per day.
- Chilliwack River/Vedder for four per day from July 1 to December 31.
- Chehalis River from January 1 to December 31 for four per day.
- Harrison River for four per day from September 1 to December 31.
- Nicomen Slough, Norrish Creek and the Stave River for four per day from January 1 to December 31 with only two over 35 cm.

During 2017, there were limited non-tidal openings for hatchery marked Coho on the following systems which enter Boundary Bay:

- Little Campbell River, Nicomekl River and the Serpentine River one per day from September 1 to December 31.

10.5 COMMERCIAL

In 2017, Southern BC commercial fisheries were regulated so that impacts on Coho, in particular Interior Fraser Coho stocks, were minimized. Retention of Coho by-catch in most of these fisheries was not permitted, including the Fraser River, with the exception of a few terminal seine and gill net fisheries targeting Chinook and Sockeye where Interior Fraser River Coho were not prevalent.

There was no Area G fishery directed on Coho in 2017. During harvest opportunities between September 15 and December 31 retention of marked Coho by-catch was permitted in the AABM Chinook fishery. For the 2016/2017 (October 1, 2016 to September 30, 2017) AABM Chinook fishing periods, the estimated total Coho retained was 311 and releases during this period were estimated at 5,619 Coho salmon.

WCVI Terminal Area Coho

In 2017, in Area 23 there were no targeted Coho commercial net fisheries. There were Area D gill net and Area B Seine fisheries in Alberni Inlet targeting Chinook terminal returns, which permitted Coho by-catch retention. Retention of both hatchery and wild Coho were permitted. The Area D gill net Chinook fisheries in Area 23 had a bycatch of 98 pieces of Coho.

The Area B seine Chinook fisheries in Area 23 had a bycatch of 684 pieces of Coho.

Coho retention in other terminal WCVI commercial fisheries was not permitted in 2017. The total WCVI Coho by-catch in commercial terminal fisheries was 782 pieces.

10.5.1 COMMERCIAL (A-H FISHERIES INCLUDES ATP)

10.5.2 FIRST NATIONS COMMERCIAL HARVEST

WCVI Economic Opportunity (EO)

In 2017, DFO with Hupacasath and Tseshaht First Nations reached an agreement for an Economic Opportunity fishery targeting Coho with Chinook by-catch in Subarea 23-1 and 23-2. The fishery took place in upper Alberni Inlet in the tidal portions of the Somass River south to Hocking point. The TAC for Coho was 3,000 pieces. Most of the Coho catch taken was caught as by-catch in EO-directed Chinook fisheries in late August and September. The total Coho bycatch in these fisheries was 1,223 pieces. There was one directed Coho EO fishery on October 15. The catch consisted of 353 Coho and 182 Chinook by-catch. There were no further economic Coho fisheries because the Somass First Nations had no remaining allocation of Chinook left for bycatch. The total EO catch of Coho was 1,576 pieces.

T'aaq-wiihak Salmon Demonstration Fishery

Five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht – have "aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck".

There was no T'aaq-wiihak salmon demonstration fishery directed for Coho in 2017. Coho releases in the AABM Chinook fishery were 989 pieces.

Lower Fraser

There were no directed Coho fisheries authorized in the Lower Fraser in 2017, however hatchery marked Coho were authorized to be retained in the Chum salmon EO and demonstration fisheries, and all wild Coho were to be released. In total, 318 hatchery-marked Coho were retained and 541 Coho were released from all EO and demonstration fisheries.

10.6 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

WCVI ESSR Fisheries

The Tseshaht and Hupacasath First Nations were issued a joint ESSR Licence for Coho at the Robertson Creek Hatchery facility. The total catch was 9,274 Coho which includes 1193 jacks. The Ditidaht First Nation was issued an ESSR Licence for Nitinat Lake and the Nitinat Hatchery, and 305 Coho were sold under the licence.

The total catch WCVI for the ESSR fisheries was 9,579 Coho.

Lower Fraser ESSR Fisheries

There were several ESSR fisheries in the Lower Fraser Area conducted by First Nations groups. These were conducted at Capilano, Chilliwack, and Inch Creek Hatcheries for a total Coho catch of 10,914 (total includes 1,772 jacks). Chehalis, Tenderfoot, and Weaver Creek Hatcheries reported no Coho harvest for ESSR in 2017.

Strait of Georgia ESSR Fisheries

ESSR harvest at the Big Qualicum hatchery included catch of 3,987 Coho (total includes 863 jacks).

Johnstone Strait ESSR Fisheries

For 2017, there were no ESSR opportunities on Coho in Johnstone Strait.

11 JOHNSTONE STRAIT CHUM SALMON

11.1 OBJECTIVES AND OVERVIEW

The Johnstone Strait Chum salmon fisheries primarily target Chum that spawn in Johnstone Strait, the Strait of Georgia, and the Fraser River areas. In order to improve the management of Johnstone Strait Chum fisheries and to ensure adequate escapement, a 20% fixed exploitation rate strategy was implemented in 2002. Of the 20% exploitation rate, 15% is allocated to the commercial fisheries and the remaining 5% is set aside for test fisheries, First Nations FSC, sport harvesters, and to also provide a buffer to commercial exploitation. Since the implementation of this management strategy, annual fisheries have been planned well in advance of the Chum return.

The pre-season commercial fishing plan was developed based on expectation of effort, exploitation levels by gear group, and historical run timing (peak was estimated as October 9). The fishing plan was developed to achieve the commercial allocation sharing guidelines of 77% for seine, 17% for gill net and 6% for troll. Adjustments to the fishing plan are made in-season, if warranted, and are typically based on effort and weather.

As outlined in Chapter 6 of the Pacific Salmon Treaty, commercial Chum fisheries in Johnstone Strait are suspended when an abundance estimate of less than 1 million Chum salmon migrating through Johnstone Strait is expected. As numbers exceeded 1 million Chum in 2017, all fisheries proceeded as scheduled.

This year, the Area B (seine) and Area D (gill net) were competitive (derby style) fisheries, and the Area H (troll) fleet was managed using an effort-based individual transferable effort (ITE) demonstration fishery.

Chum catch and release information from all fisheries can be found in Appendix 7.

11.2 STOCK STATUS

Mixed Stocks

The main components of the Inside South Coast (ISC) Chum return were expected to be both Fraser and non-Fraser stocks. These stocks are typically dominated by four year old fish which were from an average 2013 brood return that out-migrated in 2014. Other salmon species that also out-migrated in 2014 encountered poor survival conditions (i.e. local Pink and Coho returns in 2015). The pre-season expectation for ISC Chum suggested near target returns to the area but was highly uncertain.

The Johnstone Strait test fishery, which ran from September 11th through October 28th, provided timing and abundance information for the 2017 return, which is important in assessing the performance of the 20% fixed exploitation rate strategy. It also provided an index of abundance, used to determine the likelihood of the number of returning Chum being over the 1.0 million critical level (requirement for commercial openings). Chum catch per unit effort in the test fishery was higher than what was encountered in the low 2010 return and it was determined that the ISC index of abundance was likely above the 1.0 million critical level (Figure 11-1). The timing of the run also appeared to be earlier than average based on the peak CPUE observed in the test fishery. The age composition derived from the test fishery and commercial samples exhibited a lower than average contribution of 4 year olds throughout the season confirming the reduced survival of the 2013 brood.

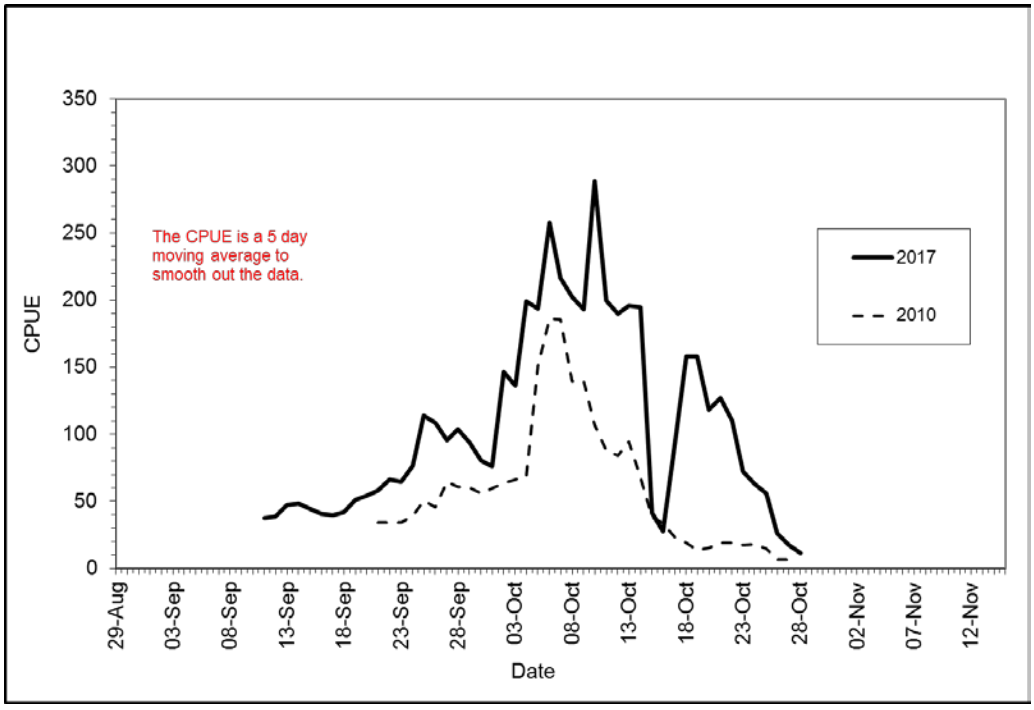


Figure 11-1 2017 Johnstone Strait Chum Test Fishery Catch Per Unit Effort (CPUE) compared to 2010, the lowest Chum return in recent years.

Terminal returns

Although escapement is poorly monitored, Summer Chum catch per unit effort (CPUE) in the 2017 Fraser Sockeye directed test fisheries were the highest on record through July and August. Status of summer run Chum in the Johnstone Strait area is unknown but the test fishing CPUE was promising. Assessments of terminal fall Chum, such as the Nimpkish, are ongoing but information suggests another poor return to that system.

Information on escapements and catches suggest ISC aggregate returns were below average but highly variable with some populations well below goal and others well above goal throughout the ISC area.

11.3 First Nations FSC Fisheries

First Nations fisheries for Chum were not restricted. The estimated catch by First Nations in the Johnstone Strait area is 18,818 Chum salmon.

11.4 Recreational Fisheries

11.4.1 TIDAL RECREATIONAL FISHERIES

The marine recreational daily limits for Chum are four (4) with a possession limit of eight salmon (8). Chum opportunities are typically opened at full limits in the Johnstone Strait area, but may be reduced if Chum returns are low. Peak participation in the recreational Chum fishery typically occurs over the Thanksgiving weekend in mid-October, and activity is usually driven by abundance. There was no creel survey during the month of October in Areas 11 to 13, but recreational catches were reported as fair, but lower than recent years due to the lower abundance of Chum available in these areas in 2017. The majority of the sport Chum salmon fishing effort occurs in Area 13 which is included in the Strait of Georgia catch estimate.

11.4.2 NON-TIDAL RECREATIONAL FISHERIES

There are no Chum retention fisheries in non-tidal waters in the Johnstone Strait area.

11.5 COMMERCIAL FISHERIES

The commercial Chum fisheries in Johnstone Strait were planned for September 28 to October 30, 2017. The total commercial Chum catch from Johnstone Strait during Chum directed fisheries is estimated at 401,957 pieces. Area and gear restrictions, including the mandatory use of revival tanks, were in place for commercial Chum fisheries. Catch monitoring included requirements for catch reporting and mandatory logbooks.

11.5.1 COMMERCIAL (A-H INCLUDES ATP)

Area B Seine

In 2017, there were two commercial seine openings for Chum salmon in portions of Areas 12 and 13. The first opening took place on October 2 for 12 hours. The second opening took place on October 16 for 10 hours.

The Chum catches for the first and second openings were estimated at 124,322 pieces and 163,789 pieces respectively; for a total catch of 288,111 Chum. Additionally, there were estimated to be 2 Sockeye, 186 Coho, and 676 Pink salmon kept during the first opening and 6 Pink and 105 Coho salmon kept during the second opening. The total releases from both the fisheries were estimated at 108 Sockeye, 742 Coho, 42 Pink, 85 adult Chinook, and 14 jack Chinook.

Area D Gill net

In 2017, there were three commercial gill net openings for Chum salmon in portions of Areas 12 and 13. The first opening was for 41 hours from 16:00 hours on October 5 to 09:00 hours on October 7. The second opening was for 41 hours from 16:00 hours on October 10 to 09:00 hours on October 12. The third opening was for 45 hours from 16:00 hours on October 24 to 13:00 hours on October 26.

Pre-season, each Area D gill net opening was planned for 41 hours in duration but was subject to change based on in-season assessment information, weather constraints, and effort information. Additional fishing time was granted on the third opening due to poor weather conditions that hampered fishing during the second day of the opening.

The estimated Chum catches for the three Area D gill net fisheries were 30,866 pieces, 37,664 pieces and 27,689 pieces respectively; for a total estimated catch of 96,219 Chum. Three Pink, 10 Coho, and one Chinook salmon were estimated to be retained in all three openings. One Steelhead was reported as retained.

Other species that were estimated to be released in all three openings combined were as follows: 759 Coho, 8 Pink, 16 Chinook, 43 Chum, 1 Sockeye and 7 Steelhead.

Area H Troll

In 2017, the Area H troll ITE demonstration fishery was divided into two fishing periods: September 28 to October 12 (Period 1) and October 14 to October 30 (Period 2); with a one day closure between the two periods on October 13, and closures during the Area B seine fisheries on October 2 and 16 (except a portion of Subarea 13-3). Each licence was initially allocated three boat days during the first fishing period and two boat days during the second fishing period. Boat days could be transferred between vessels within each fishing period but not between fishing periods.

The catch for the first fishing period was 9,913 Chum, and 7,714 Chum for the second fishing period, for a total catch of 17,627 Chum. Total effort for the Johnstone Strait fishery was 244 boat days; 149 in period 1 and 95 in period 2. There were 16 Pink salmon kept and an estimated 3 Sockeye, 132 Coho, 16 Pink, 16 legal Chinook, 17 sub-legal Chinook, and 26 Chinook grilse released during both fishing periods.

Table 11-1 Johnstone Strait Commercial Chum Catch by Date and Gear Type

Gear Type	Fishery Dates	Effort[a]	Catch
B – Seine	Oct 2	86	124,322
	Oct 16	89	163,789
D - Gill net	Oct 5-Oct 7	165	30,866
	Oct 10-Oct 12	167	37,664
	Oct 24-Oct 26	109	27,689
H – Troll	Sep 28-Oct 12	149	9,913
	Oct 14-Oct 30	95	7,714

[a] Number of unique vessels for each seine and gill net opening, and boat days for troll by fishing period.

Table 11-2 Johnstone Strait Fisheries Catch and Allocation

Gear Type	Total Catch	% of catch	J.S. Allocation Plan
Area B	288,111	71.7%	77%
Area D	96,219	23.9%	17%
Area H	17,627	4.4%	6%
Total Catch:	401,957		

11.5.2 FIRST NATIONS COMMERCIAL HARVEST

There was no First Nations commercial harvest of Johnstone Strait Chum in 2017

11.6 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERIES

For 2017, there were no ESSR opportunities on Chum salmon in Johnstone Strait.

12 FRASER RIVER CHUM

12.1 OBJECTIVES AND OVERVIEW

Chum salmon return to the Fraser River from September through December, with the typical peak of migration through the lower river occurring from mid to late-October. Spawning locations are predominately located in the Fraser Valley downstream of Hope, BC, with major spawning aggregations occurring within the Harrison River (including Weaver Creek and Chehalis River), the Stave River, and the Chilliwack River. No spawning locations have been identified upstream of Hell's Gate.

The escapement objective for Fraser River Chum is 800,000. Since 2001, this objective has been achieved in all but two years; escapements in 2009 and 2010 did not meet the escapement goal, with approximately 460,000 and 550,000 returning to spawn in those years, respectively.

Fraser River Chum are typically harvested in Johnstone Strait, the Strait of Georgia, U.S. waters of Area 7 and 7A, and in the Fraser River.

Within the Fraser River, Chum directed fisheries include: First Nations FSC fisheries; sport fisheries; and commercial fisheries. In recent years, significant conservation measures have been implemented in-river during the Fraser River Chum migration period, in order to protect co-migrating stocks of concern (including Interior Fraser Coho and Interior Fraser Steelhead). Depending on the fishery, these measures have included both time and area closures, as well as gear restrictions. These conservation measures have restricted Fraser River commercial Chum fishing opportunities in recent years.

Catch data from all Chum fisheries can be found in Appendix 7.

12.2 STOCK STATUS

The number of adult Chum Salmon returning to the Fraser River each fall is estimated in-season with a Bayesian model based on Albion test fishing catch.

The Fraser River Chum test fishery at Albion operated every other day from September 1 until October 19, alternating days with the Albion Chinook test fishery. From October 21 until November 9, the Chum net fished every day, and then every other day from November 10 until November 23. In 2017, the total number of Chum harvested during the Albion Chum test fishery was 7,473, and an additional 2,590 pieces were harvested during the the Albion Chinook test fishery.

For fishery planning purposes, DFO provided a provisional in-season update on October 16 of 1.29 million Chum Salmon. This estimate assumed that the peak date of the run was no later than October 15.

A subsequent estimate of Fraser River Chum abundance was provided on October 23. The estimated terminal return on that date was 1.32 million (80% probability interval of 0.60 to 2.85 million), with a 50% migration date through the lower river of October 17th. This peak date is consistent with timing in recent years (average peak date from 1997-2016 is October 17).

Additional in-season estimates were not provided, as subsequent test fishing information was consistent with a run size of 1.32 million.

Fraser River Chum salmon return to numerous spawning locations in the lower Fraser River and its tributaries. The escapement goal for Fraser Chum is 800K. Spawning escapement for Fraser River Chum salmon is currently assessed for five of the largest Chum producing systems, as well as for a number of smaller tributaries. The largest observed escapement of Fraser River Chum (greater than 3 million fish), was seen in 1998. From 1999 to 2010, Fraser Chum Salmon escapement (for the annually assessed systems) trended downward. The escapement decline was then halted and reversed with an estimated 1.1 million spawners reported in 2011. Spawning escapement had remained stable through 2016 and achieved the escapement goal in each year (2011-2016 estimated escapement averaged 1.3 million spawners).

The 2017 estimated escapement of 660,000 Fraser Chum Salmon was below the escapement goal.

12.3 FIRST NATIONS FISHERIES

First Nations Food, Social and Ceremonial (FSC) gill net fisheries commenced October 7 (below Mission) and October 13 (above Mission), following closures to protect co-migrating Interior Fraser Coho. The estimated Chum catch from the FSC fishery below Sawmill Creek was 47,051 with 50 Chum released. Additionally, the following allowable bycatch occurred during Chum targeted FSC openings: 319 Chinook kept and 20 released; 607 Coho kept and 126 Coho released; 49 Pink kept and 117 Pink released. Retention of Sockeye was not permitted, 7 Sockeye were released.

12.4 RECREATIONAL FISHERIES

In 2017 two of the major Fraser River watershed recreational salmon fisheries impacting Chum salmon were assessed, these were the lower Fraser River mainstem sport fishery and a significant salmon fishery occurring in the Chilliwack River (a tributary to the Fraser River in the lower Fraser Valley).

The lower Fraser River mainstem recreational fishery was open to the retention of Chum salmon from September 13 to December 31 (with a daily limit of two upstream and four downstream of Mission Bridge); the Fraser mainstem was closed to fishing for salmon prior to September 13. In 2017, this mainstem fishery was assessed in the period opened to the retention of Chum until October 31; this was the first time since 2012 the assessment continued past the first week of

October. Estimates of kept and released Chum salmon are not yet available. The Chilliwack River sport fishery was open to the retention of Chum salmon from July 1 to December 31 (with a daily limit of one). Similar to past years, this Chilliwack River fishery was assessed from September 15 to November 15 in 2017.

The Harrison River, Stave River and Nicomen Slough/Norrish Creek sport fisheries were open to the retention of Chum salmon year round (daily limit of two). In 2017, no assessment was conducted on the Harrison River or Stave River fisheries; however, the Nicomen Slough/Norrish Creek fishery was assessed from October 6 to November 30. Estimates of kept and released Chum salmon are not yet available.

12.5 COMMERCIAL FISHERIES

12.5.1 COMMERCIAL (A-H FISHERIES INCLUDES ATP)

Area B

There were no Area B fisheries in Area 29 (Fraser River) for Fraser Sockeye, Pink, or Chum in 2017 and therefore no catch or by-catch retention of Chum salmon to report.

Area E

Commercial salmon fisheries in the lower Fraser River (below Mission) remained closed during the Interior Fraser River Coho window closure, and further closures were in place until later in October to meet the Interior Fraser Steelhead management objectives. Two Area E gill net commercial openings took place in the Fraser River (Area 29) during the 2017 Chum season, consisting of an eleven (11) hour fishery on October 24 and an eleven (11) hour fishery on October 27, for a total estimated harvest of 77,139 Chum salmon retained and 11 were released. Additionally, there were estimated to be 68 Coho and 1 Pink salmon kept ; releases from the two fisheries were estimated at 104 Chinook, 740 Coho, 14 Pink, 8 Sockeye, 12 Steelhead and 264 White sturgeon.

There were no Area E fisheries for Fraser Sockeye in 2017 and therefore no by-catch retention of Chum salmon to report.

Area H

Area H was provided an opportunity in Area 29 that took place from October 25 to November 3 for a total estimated harvest of 14 Chum retained and none released.

12.5.2 FIRST NATIONS COMMERCIAL HARVEST

Fraser River First Nations commercial Chum fisheries for gill net and beach seine were conducted between October 19 and November 14. There were 109,522 Chum, 51 Sockeye, 472

Chinook, 859 Coho, and 122 Pink salmon caught in Economic Opportunity Harvest Agreement fisheries.

Musqueam and Tsawwassen First Nations Economic Opportunities consisted of two daylight only gill net opportunities with both First Nations fishing on October 23, and October 26. Tsawwassen First Nation caught 4,815 Chum, 0 Chinook, and 63 Coho salmon as part of their harvest agreement.

The First Nations above the Port Mann bridge (Sto:lo First Nations) Economic Opportunity fisheries were for beach seines and gill nets. The beach seine fisheries were authorized for 11 days on October 19 - 20, 27, 30 - 31, November 2 - 3, 7 - 10, 13 - 14. They also had a daylight-only gill net opportunity on October 30 - 31.

The Harrison Fisheries Authority (Sts'ailes and Scowlitz First Nation) Economic Opportunity fishery was authorized for 5 days of beach seine fishing on October 23 – 26 and November 1. They were no gill net opportunities authorized for their Economic Opportunity fishery. The retention of hatchery marked Coho was the only bycatch permitted.

12.6 EXCESS-TO-SPAWNING REQUIREMENT (ESSR) FISHERIES

There were several ESSR Chum fisheries in the Lower Fraser Area done by First Nations. These were conducted at Chehalis, Chilliwack, and Inch Creek Hatcheries for a total Chum catch of 13,447. Capilano, Tenderfoot, and Weaver Creek Hatcheries reported no Chum harvest for ESSR in 2017.

13 STRAIT OF GEORGIA CHUM

13.1 OBJECTIVES AND OVERVIEW

Strait of Georgia Chum fisheries consist of terminal opportunities for Chum returning to their natal spawning streams. Many of the terminal fishing areas have enhancement facilities and/or spawning channels associated with adjacent river systems. Terminal fishery strategies consist of monitoring and assessing stocks (escapement and returning abundance), with the objective of ensuring adequate escapement and providing harvest opportunities where possible. Stock assessments may include test fisheries, escapement enumeration including swim surveys, stream walks, channel entry counts, fence counts, Sonar (DIDSON) counts and over flights. In some areas where stocks receive considerable enhancement or where stocks have above average productivity, limited fishing may occur prior to escapement objectives being reached.

13.2 STOCK STATUS

Historically, Chum returns have been highly variable relative to brood year escapements. For 2017, the forecasts were as follows:

- Jervis/Narrows Inlet Chum abundance was expected to be below the target level,
- Mid-Vancouver Island systems were expected to vary from well below to above the target level,
- Nanaimo was forecasted to be well above target levels,
- Cowichan was forecasted to be slightly below to well above target level,
- And Goldstream Chum abundance was forecasted to be above to well above the target levels.

All of these forecasted expectations are highly uncertain and a review of the procedures and data used for forecasting these systems will be conducted in the near future.

Conditions for returning Chum migration and spawning were marginal throughout October due to lower than normal water levels. In November, water levels increased significantly possibly impacting Chum spawning conditions.

Monitoring spawning escapements of Chum are mostly completed now and data are currently being compiled and reviewed. Returns for the Jervis/Narrows Inlet aggregate (which includes Brittain River, Skwawka River, Deserted River, Vancouver River and Tzoonie River), the Mid-Vancouver Island systems, and Goldstream River were below the expected range and did not reach the target escapement. Nanaimo River and Cowichan River were at or above the expected range and reached the target escapements (Table 13-1).

Table 13-1 Strait of Georgia Chum Spawning Escapements

System	Target Escapement Target	2017 forecast Expected range	2017 Escapement	% of target
Jervis Inlet	85K	57K-85K	49K	58%
Mid-Island	230K	155K – 232K	74K	32%
Puntledge	60K		43K	72%
Little Qualicum	85K		11K	13%
Big Qualicum	85K		20K	24%
Nanaimo	40K	77K – 116K	105K	262%
Cowichan	160K	140K – 210K	228K	143%
Goldstream	15K	26K – 40K	14K	93%

13.3 First Nations FSC Fisheries

The FSC catch by First Nations in the Strait of Georgia is estimated to be approximately 2,337 Chum kept.

13.4 Recreational Fisheries

13.4.1 Tidal Recreational Fisheries

Marine recreational Chum fisheries are subject to the normal salmon daily and possession limits (limit of four per day and possession of eight), and are typically open throughout the area. The majority of the recreational effort directed at Chum salmon in the Strait of Georgia occurs in the lower portions of the Discovery Passage area, particularly in the waters around Campbell River. The annual Brown's Bay Charity Chum derby which took place on the weekend of October 14-15 is usually the most active Chum recreational fishery in the area. Catches in the derby were reported to be modest, likely based on the lower abundances of Chum available in 2017. There was no creel survey during the months of October and November in the Strait of Georgia.

Marine Chum fisheries also occur in the approach waters of the Puntledge, Qualicum, Little Qualicum, Nanaimo and Cowichan Rivers on Vancouver Island, as well as in Howe Sound. Marine recreational catch for the Strait of Georgia Creel survey from March through September was estimated to be 2,235 Chum (catch was from August and September). There was no Creel survey in the Strait of Georgia in October and November.

13.4.2 NON-TIDAL RECREATIONAL FISHERIES

Chum retention fisheries in the Strait of Georgia took place in 2017 in the Cowichan, Nanaimo, Qualicum, Little Qualicum and the Puntledge Rivers on Vancouver Island. Recreational freshwater opportunities are typically based on escapement estimates from hatchery operations, and where escapement goals are expected to be met, opportunities are provided.

Annually, but subject to in-season assessment information, retention opportunities are provided pre-season in the following Strait of Georgia rivers:

- Nanaimo River – October 26 to November 30 – 4 Chum per day
- Qualicum River - October 16 to November 30 – 1 Chum per day
- Puntledge River - October 1 to November 30 – 2 Chum per day

Catch is not estimated in these freshwater fisheries.

13.5 COMMERCIAL FISHERIES

Strait of Georgia commercial Chum fisheries for troll, gill net and seine were conducted in Areas 14, 17 and 18 between October 13 and November 24. The total commercial Chum catch from the Strait of Georgia is estimated at 309,521 pieces (see Table 13-2 below). A description of each fishery is provided in the following table. In Areas 17 and 18 there was non-retention of other species as by-catch and in Area 14 the only by-catch permitted to be retained was Pink salmon.

For the 2017 season in Area 17 estimated Coho releases were 183 and in Area 18, 161 Coho. By-catch species that were estimated to be released in Area 14 for all three openings combined were as follows: 10 Coho, 2 Chinook.

Area H Troll opened in Area 14 October 25, 2017 and closed November 10, 2017, no vessels fished during this time.

Area B Seine did not open in Area 14 for the 2017 season due to low stock abundance.

Chum salmon catch and release information from all fisheries can be found in Appendix 7.

Table 13-2 Strait of Georgia Commercial Chum Catch by Date and Gear Type (2017)

Fishery Date	Gear type	Area	Effort (boat days)	Catch
Oct 24-Nov 9	GN	17	745	88,944
Oct 24-Nov 9	SN	17	119	35,522
Nov 2-Nov 24	GN	18	1,119	91,767
Nov 2-Nov 24	SN	18	169	76,324

Nov 13 to Nov 15	GN	14	10	4,860
Nov 20 to Nov 22	GN	14	10	5,060
Nov 27	GN	14	69	7,044*

13.5.1 COMMERCIAL

Area 14

Chum returning to this area have been enhanced since the late 1960s and terminal fisheries have occurred in October and November since the 1970s. The returning Area 14 Chum abundance is forecasted pre-season using brood escapement, average survival and age composition. In-season run strength is assessed from any early catches, visual observations at river estuaries and by escapement counts to the three major river systems.

The Area 14 Chum fishery is directed at the enhanced stocks of three systems: Puntledge, Qualicum and Little Qualicum Rivers. The Qualicum River is often referred to as the 'Big' Qualicum River, to better distinguish it from the Little Qualicum River. The escapement goals for the three river systems are 60,000 for Puntledge River, 85,000 for Little Qualicum River, and 85,000 for Qualicum River, adding up to an overall interim escapement goal of 230,000 Chum, not including enhancement facility requirements (about 10,000 Chum, bringing the total escapement goal to 240,000).

In 2017, the Area D Harvest Committee submitted a proposal through the Commercial Salmon Allocation Framework (CSAF) process which was implemented as a demonstration fishery. Area 14 commercial Chum fisheries are managed based on forecasted abundance. In-season, the management strategy for considering fishery openings falls under one of two categories; Area 14 Pre-Season Forecast greater than 340,000 Chum or Area 14 Pre-Season Forecast less than 340,000 Chum. When pre-season forecast is greater than 340,000 early Chum openings would target up to 65% of the anticipated surplus above 340,000. When pre-season forecast is less than 340,000 an early timed small fleet gillnet fishery would be used to evaluate the MVI aggregate abundance.

In 2017 the Mid-Vancouver Island aggregate was managed based on the pre-season forecast of less than 340,000 Chum (see Table 13-1 for Mid-Vancouver Island Stock Status). Under this scenario, two-10 boat gill net assessment fisheries were held on October 13 to 15 and Oct 20 to 22. Based on the CPUE data from the assessment fishery and escapement surveys a forecasted small abundance was indicated in the Puntledge River, which led to a short duration full fleet opportunity on October 27, 2017 for Area D gill nets. Area D gill nets harvested a total of 16,964 Chum in Area 14.

The Area H troll fishery was open from October 25 to November 10 however there was no participation. The Area B seine fishery did not open due to low stock status in MVI systems.

Area 16

This fishery targets wild Chum stocks returning to river systems in the Jervis Inlet area. The main systems are Tzoonie, Deserted and Skwawka Rivers. The overall escapement goal for rivers in Jervis/Narrows Inlet is 85,000. These terminal fisheries occur when the individual or combined escapement goals have been assured. Fishing opportunities do not occur on a regular basis. There were no fisheries in Area 16 in 2017.

Area 17

This fishery is a terminal fishery targeting Nanaimo River stocks. The Nanaimo River Chum stocks are supplemented by the Nanaimo River hatchery (supplementation is on a sliding scale), where increased enhancement occurs during poor escapement years. Escapements fluctuate annually and fishery openings are planned in-season based on escapement estimates. The overall escapement goal for the Nanaimo River is 40,000.

Nanaimo River assessments include swims by Nanaimo River Hatchery staff, a sonar counting system (DIDSON) and spot counts or helicopter counts by DFO during the peak of the return when possible. The DIDSON was installed and operational on September 29 until November 21; due to heavy storms and debris the DIDSON was not operational from October 14 until October 19 when the water level decreased enough to remain operation. The escapement estimate based on DIDSON data is approximately 83,000.

In 2017 there were Area E Gill Net, Area B Seine and Area H Troll openings for Nanaimo River Chum. The Area E Gill Net and Area H Troll fisheries opened October 24 and the Area B Seine fishery opened on October 25; the Area E gill net and H Troll fisheries were open daily until November 9 and the Area B Seine fishery opened daily from October 25 until November 9. The fisheries closed for the season on November 17. The catches in the fisheries were 88,944 for gill nets and 35,522 for seines and 0 for troll.

Area 18

This fishery is directed primarily at Cowichan River stocks; however incidental catches of Goldstream bound Chum are also harvested. Fishery openings in mid to late November are limited to Satellite Channel, in order to minimize impacts on Goldstream stocks. Chemainus River stocks could also be impacted if the fisheries are earlier in November, but likely to a lesser extent.

Fishery openings are planned in-season based on escapement estimates from a DIDSON counter and information from a test fishery. Management is also guided by advice from the Cowichan Fisheries Roundtable and the Mid Vancouver Island (MVI) Chum Subcommittee, and an in-

season Chum Escapement Forecast Tool based on the DIDSON count and date. The overall escapement goal for the Cowichan River is currently 160,000 Chum passing by the DIDSON counter.

The DIDSON was installed on October 11.The escapement estimate was 187,000 Chum.

A weekly conference call was held with the Cowichan Fisheries Roundtable to discuss stock status and potential fishing opportunities in Area 18. In 2017, a commercial opportunity was triggered on November 2 when the Didson Chum count went from below 50% to reaching the escapement target of 160,000 Chum within 3 days. A Cowichan Tribes commercial demonstration fishery began October 31 for approximately 13% of the forecasted surplus for the week. The Cowichan Tribes demonstration fishery was licenced to fish on October 31 daily until November 30. The Cowichan Tribes commercial demonstration catch is approximately 11,000 Chum. Area E gill nets, Area B Seine and Area H Troll fished in Area 18 daily from November 2 until November 24. The total Area E commercial Chum catch is estimated at 91,767 Chum. The total Area B commercial Chum catch is estimated at 76,324 Chum. Area H Troll was open but there were no vessels active for the duration of the fishery.

Area 19

This fishery is directed primarily at Goldstream River stocks, although some Cowichan River Chum salmon are also harvested. Fishery openings set for mid to late November are limited to the portion of Saanich Inlet (Sub area 19-8) which is outside or to the north of Squally Reach. This area restriction is implemented to minimize impact on Goldstream Chinook and Coho stocks.

Fisheries are planned in-season based on escapement estimates. Area 19 falls under the same management regime as Area 18. The overall escapement goal for the Goldstream River is 15,000. Weekly (or bi-weekly in 2017) stream walks are conducted on Goldstream River by Goldstream Hatchery staff to estimate Chum escapement. In 2017, enumerations began on October 18. The escapement estimate is 14,900.

There were no commercial Chum fisheries in Area 19 in 2017.

Chum catch and release information from all fisheries can be found in Appendix 7.

13.5.2 FIRST NATIONS COMMERCIAL HARVEST

A weekly conference call was held with the Cowichan Fisheries Roundtable to discuss stock status and potential fishing opportunities in Area 18. In 2017, a commercial opportunity was triggered on October 31 when the Didson Chum count was near 50% of the escapement target of 160,000 Chum. The Cowichan Tribes commercial demonstration fishery began October 31. The Cowichan Tribes Demonstration fishery was licensed to fish on October 31 daily until November 30. The Cowichan Tribes Commercial Demonstration catch is approximately 11,025 Chum. No other species were reported to be encountered in the fishery.

13.6 EXCESS SALMON-TO-SPAWNING REQUIREMENTS (ESSR) FISHERY

The Cowichan Tribes First Nation had an ESSR harvest at the CEDP hatchery on the Cowichan River. The First Nation harvested 5,000 Chum salmon.

The Qualicum First Nation was issued an ESSR Licence for Chum, Coho and Chinook at the Big Qualicum River hatchery. No Chum were reported as harvested.

The Snuneymuxw First Nation was issued an ESSR licence in portions of the Nanaimo River (Area 17-14). The First Nation harvested 229 Chum salmon.

14 WEST COAST VANCOUVER ISLAND CHUM

14.1 OBJECTIVES AND OVERVIEW

Commercial Chum salmon fisheries normally occur on the WCVI from late September to early November in years of Chum abundance. The majority of Chum fishing on WCVI takes place adjacent to Nitinat Lake (Area 21), in Nootka Sound and Tlupana Inlets (Area 25). In some years there have been limited-fleet gill net fisheries in Barkley Sound (Area 23), Clayoquot Sound (Area 24), Nootka Sound and Esperanza Inlet (Area 25) and Kyuquot Sound (Area 26).

Commercial fisheries for WCVI Chum employ a two-tiered strategy for controlling removals; either a constant harvest rate strategy or a surplus-to-escapement goal strategy.

Fixed Harvest Rate Strategy (fisheries targeting natural origin stocks, hatchery stocks at low abundance):

For those fisheries where a significant component of the target stock is from naturally spawning populations, a constant harvest rate strategy of 10-20% is implemented. The maximum harvest rate is set at a precautionary level relative to stock-recruit derived optimal exploitation rates for WCVI Chum; which are in the order of 30-40%. This approach allows limited harvest while protecting the biodiversity of Chum stocks and permitting rebuilding when the population is low. In areas of low quality data or only naturally spawning stocks, including Barkley (Area 23), Clayoquot (Area 24), Esperanza Inlet (Area 25) and Kyuquot Sound (Area 26), the maximum allowable harvest rate is 10 to 15%. In Nootka Sound, up to 20% harvest is permitted given the prevalence of hatchery stock in the area. The harvest rate is controlled by limiting effort (i.e. number and duration of openings and, in some areas, the number of permitted vessels) and limiting fishing areas to approach areas only (i.e. to those areas where fish are migrating not holding).

Note: since 2013, a fixed harvest rate strategy has also been used to harvest Nitinat Hatchery Chinook when the stock abundance is considered above the lower fishery reference point but below the target fishery reference point. The maximum harvest rate for the Nitinat stock is 25% when it is below the target fishery reference point.

Surplus-to-Escapement Goal Strategy (fisheries targeting hatchery stocks at high abundance):

For fisheries that target primarily hatchery surpluses, the allowable harvest rate is determined by the escapement goal when it is determined the stock is forecasted in-season to be above the Upper Fishery Reference Point and broodstock capture targets have been or will be met. These fisheries occur only in 'terminal areas', defined as an area in close proximity to the origin watershed of the target stock where little or no interception of other stocks occurs. Surplus to escapement goal fisheries for Conuma Hatchery stock have occurred within the Tlupana Inlet

portion of Area 25. Surplus to escapement goal fisheries for Nitinat Hatchery stock have occurred in Area 21 near the mouth of Nitinat Lake or in Area 22 in Nitinat Lake. All Nitinat and Conuma hatchery Chum are thermally marked, which allows for assessment of the hatchery contribution to fisheries and spawning.

14.2 STOCK STATUS

The current stock status is considered poor. Over the last three brood cycles, naturally spawning populations have been below target abundance in many years despite the precautionary harvest regime. In addition, hatchery production levels have declined in recent years partially as a result of low abundance (i.e. hatcheries have not been able to achieve brood-stock targets in some years.) In recent years, overall catches have declined relative to historic levels. There was some improvement observed for the Nitinat Hatchery stock in 2015 and 2016 but information indicates low returns in 2017.

14.3 EXCESS SALMON TO SPAWNING REQUIREMENTS (ESSR) FISHERIES

The Ditidaht First Nation was issued an ESSR Licence for Chum at Nitinat Lake and Nitinat hatchery. The catch by gill net in the lake was 23,082. The catch collected for Broodstock was 30,267. The total was 53,349 Chum.

There were no other Chum ESSR fisheries on the WCVI in 2017.

14.4 FIRST NATIONS FSC FISHERIES

Somass First Nations FSC catch was 203 Chum. Maa-nulth domestic harvest was reported as 904 Chum. The WCVI NTC non-treaty First Nations harvest reported is 1,685 Chum (this includes totals from the T'aaq-wiihak fishery and FSC fishery for those non-treaty NTC Nations that reported). The remaining non-NTC First Nations harvest reported 135 Chum. The total combined catch for the WCVI First Nations was 2,927 Chum.

14.5 RECREATIONAL FISHERIES

14.5.1 TIDAL RECREATIONAL

The WCVI recreational fishery is open year-round with a daily limit of four (4) and possession of eight (8) Chum. Anglers are restricted to the use of barbless hooks and there is a minimum size limit of 30 cm. In both offshore and inshore areas of WCVI, sport catch of Chum is very low (estimated at less than 200 for all areas combined).

14.5.2 NON-TIDAL RECREATIONAL

Chum retention fisheries took place in the Nitinat River on Vancouver Island from October 16-Dec 31, with a limit of two (2) /day and four (4) in possession. Recreational freshwater opportunities are typically based on escapement estimates from hatchery operations, and where escapement goals are expected to be met, opportunities are provided. Chum returns to the WCVI were low to moderate in most systems in 2017. Daily and possession limits are typically half of those provided in marine waters, with daily limits on most rivers being 2/day and 4 in possession. Catch is not estimated in these freshwater fisheries. Chum catch and effort from this fishery is expected to be marginal.

14.6 COMMERCIAL FISHERIES

Commercial fisheries on the WCVI targeted four Chum stocks in 2017: Nitinat (Area 21/121), Nootka (Area 25), Esperanza (Area 25) and Kyuquot (Area 26).

Nitinat (Area 21/121)

In 2017, the preseason forecast of 510,000 allowed for full fleet fisheries for both gill net and seine fisheries. These fisheries target Nitinat Chum with a bycatch of Pink only.

The Area E gill net fisheries in the first two weeks of October are used to further predict the run size through catch per unit and effort (CPUE). These fisheries indicated the run may be lower than 510,000. Low CPUE in conjunction with failing to meet the weekly escapement milestones after the second week of October prevented any further fisheries. Area E gill net had three 12 hour days of fishing and Area B seine did not fish. The run size was approximately 200,000 which is slightly below the lower reference point. The catch by Area E gill net was 36,051 Chum.

Nootka Sound (Area 25)

Based on pre-season forecasts, a limited effort gill net Chum fishery opened in Nootka Sound on September 26, 2017. Effort was limited to a maximum of 4 vessels fishing two days per week during daylight hours only. CPUE's from the first two weeks suggested that the return size was too small for a full fleet fishery and so the fishery remained limited to four vessels for the remaining two weeks. The total catch for the Area D gill nets was 5,770 Chum retained with 135 Coho and 10 Chinook reported released.

Esperanza Inlet (Area 25)

Based on pre-season forecasts, a limited effort gill net Chum fishery opened in Esperanza Inlet on September 26, 2017. Effort was limited to a maximum of 4 vessels fishing 2 days per week

during daylight hours only. The fishery was open for four weeks. The total catch for the Area D gill nets was 6,353 Chum retained with 209 Coho and 8 Chinook reported released.

Kyuquot Sound (Area 26)

Based on pre-season forecasts, a limited effort gill net Chum fishery opened in Kyuquot Sound on September 26, 2017. Effort was limited to a maximum of 4 vessels fishing 2 days per week during daylight hours only. The fishery was open for four weeks. The total catch for the Area D gill nets was 8,284 Chum retained with 196 Coho and 7 Chinook reported released.

14.7 FIRST NATIONS COMMERCIAL HARVEST

In 2017, an agreement was reached with the Hupacasath and Tseshaht First Nations (Somass First Nations) for an Economic Opportunity fishery targeting Chum (Area 23). The pre-season forecast was 38,000, which was below the lower reference point of 48,000 and no commercial surplus was identified in-season, therefore there was no EO fishery for Chum in 2017.

There were no Chum directed fisheries during the 2017 T'aaq-wiihak salmon demonstration fishery.

15 APPENDICES

15.1 APPENDIX 1: CATCHES IN CANADIAN TREATY LIMIT FISHERIES, 1997 TO 2017

Fisheries/Stocks	Species	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
Stikine River (all gears)	Sockeye	41,749	86,729	60,046	42,800	36,146	30,352	55,623	50,543	48,049	33,614	59,237	101,209	85,890	84,866	58,784	17,294	25,600	27,468	38,055	43,803	65,559	74,281
	Coho	5,502	5,346	5,619	4,992	4,835	5,748	4,703	4,952	5,061	2,398	47	72	276	275	190	82	233	301	181	726	401	1,404
	Chinook-lg	593	2,731	4,157	3,308	3,415	4,573	2,307	1,766	2,330	7,860	10,576	15,776	18,997	3,857	1,396	1,362	1,480	3,086	2,916	2,164	4,483	2,471
	Chinook-jk	788	794	1,537	759	1,594	1,213	1,165	1,001	714	1,067	1,735	2,078	2,177	2,574	1,052	578	103	628	1,264	423	286	421
Taku River (commercial gill net)	Sockeye	30,209	37,624	19,747	17,872	21,163	30,209	24,012	20,211	11,057	19,445	16,564	21,093	21,932	19,860	32,730	31,053	47,660	28,009	20,681	19,038	24,003	41,665
	Coho	7,726	9,513	7,886	14,568	10,374	8,689	6,102	10,349	5,649	4,866	5,399	9,180	6,860	5,954	3,168	3,082	2,568	4,395	4,416	5,090	2,594	5,028
	Chinook-lg	246	1,021	868	2,472	738	1,909	2,333	4,658	7,031	1,184	862	7,312	7,534	2,074	1,894	1,561	1,458	1,576	908	1,107	2,731	3,331
	Chinook-jk	88	205	0	657	N/A	478	514	697	1,183	330	337	198	821	334	547	291	118	87	257	227	84	144
Alsek River (all gear)	Sockeye	644	815	1,084	1,140	508	1,786	2,110	1,716	717	0	1,340	1,327	594	2,122	2,795	2,255	1,177	745	554	585	520	1,361
	Coho	0	0	0	0	29	N/A	29	7	3	34	1	0	71	127	192	289	99	52	28	112	5	65
	Chinook	74	10	87	39	73	85	214	294	125	7	41	19	114	185	228	2,194	277	142	412	346	530	1,098
Areas 3 (1-4)* (commercial net)****	Pink	704,450	430,435	80,266	450,671	1,249,570	118,164	160,757	30,686	404,460	8,330	1,740,270	228,378	878,552	402,459	667,103	876,631	473,318	127,000	2,162,280	61,000	329,000	987,000
Area 1 (commercial troll)****	Pink	38,763	32,343	41,551	31,775	84,216	57,013	52,221	19,948	60,402	29,295	61,276	34,854	39,430	27,751	98,347	41,418	175,000	28,295	25,000	0	261,000	732,000
North Coast** (troll + sport)	Chinook	143,330	190,180	158,903	221,001	115,914	120,305	122,660	136,613	109,470	95,647	144,235	215,985	243,606	241,508	191,657	150,137	43,500	32,048	70,701	144,650	145,568	26,900
		97,730 + 45,600	147,381+ 42,800	106,703 + 52,200	172,001 + 49,000	69,264 + 46650	80,256 + 40050	74,660 + 48000	90,213 + 46400	75,470 + 34,000	52,147 + 43500	83,235 + 61000	151,485 + 64500	174,806 + 68,800	167,508 + 74,000	137,357 + 54,300	103,037 + 47,100						
West Coast Vancouver Island (troll + sport + FN)	Chinook	103260	93,294	113,293	178,558	108,710	130,719	206,569	137,660	125,488	143,817	139,150	145,970	195,791	210,875	179,706	165,824	102,266	89,139	28,540	10,855	59,796	3677
		54,411 + 46,707 + 2143	55,168 + 37,809 + 317	60,572 + 48,775 + 3,946	127,177 + 48,365 + 3655	43,043 + 61,712 + 3955	62,573 + 61,822 + 4300	123,930 + 78,350 + 4289	79,123 + 52,698 + 5839	53,191 + 68,775 + 3381	89,704 + 50,319 + 3794	87,921 + 46,229 + 5,000	103,978 + 36,992 + 5,000	143,614 + 52,177	168,837 + 42,038	152,677 + 27,029	134,308 + 31516	78,302 + 23964	64,216+ 24923	6,906 + 21634	6,678 + 4177	53,396 + 6400	4 + 3673
Fraser River Canadian Commercial Catch	Sockeye	0	0	0	7,945,474	2,124	0	443,000	9,305,104	0	16,942	0	4,633,623	137,000	1,993,800	1,042,986	2,182,700	295,000	953,000	54,000	1,295,000	8,737,000	1,019,000
	Pink	0	0	452	0	2,855,441	0	4,751,800	0	1,442,840	0	333,300	68,325	338,000	0	1,149,189	0	579,000	0	3,000	0	3,660,000	0
Fraser River	Sockeye	0	0	44,100	691,000	4,009	105,100	266,000	1,970,000	0	49,800	3,900	701,300	0	192,200	244,000	434,600	240,000	494,000	41,000	707,000	1,578,000	257,000
U.S. Commercial Catch	Pink	105,930	0	334,700	0	3,057,222	0	2,893,400	0	2,726,230	0	377,600	0	0	0	773,000	0	427,000		3,000	0	1,565,000	0
West Coast Vancouver Island (commercial troll)	Coho	331	774	18,126	32,992	5,489	1,988	0	458	0	369	1,424	2,399	5,989	0	0	0	0	0	0	0	0	761,000
Johnstone Strait (commercial catch)****	Chum	401,957	1,333,478	492,841	318,984	597,003	391,324	751,560	62,510	510,708	298,931	494,944	800,363	787,226	1,089,100	1,026,029	700,000	236,000	161,000	41,411	1,820,000	104,593	101,971

*AREA 5-11 CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1995-1998 INCLUSIVE. NOT PART OF 1999 ANNEX IV PROVISIONS.

** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 ('91), 6,100 ('92), 7,400 ('93), 6,400 ('94), 1,702 ('95), 16,000 ('96), 5,943 ('97), and 2,182 in 1998. NO TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT; CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS.

*** CANADIAN CATCH INCLUDES COMMERCIAL, FSC AND TEST-FISH CATCHES IN AREAS 11-13 FOR 1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2004 INCLUSIVE. 2002-PRESENT, CATCHES FROM FISHERIES MANAGED TO FIXED HARVEST RATE OF 20%.

**** ALL PINK CATCHES FOR ALL YEARS (1995-2012) IN AREAS 3(1-4) AND AREA 1 HAVE BEEN UPDATED TO REFLECT FINAL ESTIMATES.

NOTE 1: WCVI CHINOOK CATCHES FROM 1995-1998 ARE REPORTED BY CALENDAR YEAR; CATCHES FROM 2008-1999 ARE REPORTED BY CHINOOK YEAR (OCT-SEPT)

NOTE 2: 1999 CATCHES ARE REPORTED ACCORDING TO FISHERIES/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS.

15.2 APPENDIX 2: 2017 SOUTH COAST AABM CHINOOK CATCH BY FISHERY AND AREA

AABM Chinook

PST Regime	Fishery	Month	Numbers	
			Kept	Released
WCVI-AABM	Area G Troll *	Oct-15	0	0
Commercial		Nov-15	0	0
		Dec-15	0	0
		Jan-16	72	35
		Feb-16	276	142
		Mar-16	358	132
		Apr-16	4,065	732
		May-16	23,557	2,876
		Jun-16	0	0
		Jul-16	8,169	237
		Aug-16	6,758	387
		Sep-16	4,279	933
First Nations Commercial Harvest	T'aaq-wiihak	May - Sep	6,877	305
Total			**54,411**	**5,779**
Recreational	Sport	WCVI - Inshore (20W-27)	5,520	10,073
	Sport	WCVI - Offshore (121-127)	41,185	23,216
Total			**46,705**	**33,289**
First Nations FSC and Treaty	Johnstone Strait		0	0
	Strait of Georgia		0	0
	WCVI Offshore		3,093	9
	WCVI Inshore		826	0
	Fraser River		0	0
Total			**3,919**	**9**
All Total			**105,035**	**39,077**

15.3 APPENDIX 3: 2017 SOUTH COAST ISBM CHINOOK CATCH - BY FISHERY AND AREA

ISBM CHINOOK

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI Chinook	0	0
	Area H Troll	Fraser Sockeye (12,13)	0	0
	Area H Troll	Fraser Sockeye (29)	0	0
	Area H Troll	Fraser Pink (12, 13, 29)	0	0
	Area H Troll	JST Chum (12,13)	0	59
	Area H Troll	Fraser Chum (29)	0	0
	Area H Troll	MVI Chum (14-19)	0	0
	Area B Seine	Barkley Sockeye (23)	0	25
	Area B Seine	Fraser Sockeye (12,13)	0	0
	Area B Seine	Fraser Sockeye (16)	0	0
	Area B Seine	Fraser Sockeye (29)	0	0
	Area B Seine	Mainland Pink (12, 13, 16)	0	0
	Area B Seine	Howe Sound Pink (28)	0	0
	Area B Seine	Fraser Pink (12, 13, 29)	0	0
	Area B Seine	Nitinat Chum (21, 121)	0	0
	Area B Seine	JST Chum (12,13)	0	99
	Area B Seine	Fraser Chum (29)	0	0
	Area B Seine	MVI Chum (14-19)	0	10
	Area B Seine	Somass Chinook (23)	3,152	210
	Area D Gillnet	Barkley Sockeye (23)	73	16
	Area D Gillnet	Barkley Chum (23)	0	0
	Area D Gillnet	Somass Chinook (23)	7,059	0
	Area D Gillnet	Clayoquot Chum (24)	0	0
	Area D Gillnet	Esperanza Chum (25)	0	8
	Area D Gillnet	Tlupana Chinook (25)	20,202	0
	Area D Gillnet	Nootka Chum (25)	0	10
	Area D Gillnet	Kyuquot Chum (26)	0	7
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0
	Area D Gillnet	JST Chum (12,13)	1	16
	Area D Gillnet	MVI Chum (14)	0	2
	Area E Gillnet	Fraser Sockeye (29)	0	0
	Area E Gillnet	Fraser Chum (29)	0	104
	Area E Gillnet	Nitinat Chum (21, 121)	0	0
	Area E Gillnet	MVI (Area 17-19)	0	7
Commercial Harvest Total			**30,487**	**573**
First Nations Commercial	T'aaq-wiihak	WCVI ISBM Chinook (25)	1,598	0
	T'aaq-wiihak	WCVI AABM Chinook (24-26, 124-126)	n/a	n/a
	Maa-nulth HA	Henderson Sockeye (23)		
	Harvest Agreement	Fraser River	0	0
	EO	Johnstone Strait		
	EO	Strait of Georgia	0	0
	EO	WCVI	11,560	0
	EO	Fraser River	16	410
	Demo	Johnstone Strait		
	Demo	Strait of Georgia	0	0
	Demo	WCVI		
	Demo	Fraser River	0	46
First Nations Commercial Total			**13,174**	**456**
Total Combined Commercial Catch			**43,661**	**1,029**
Recreational	Sport	Juan de Fuca (19,20)	18,615	27,128
	Sport	Strait of Georgia (13-19,28,29)	39,188	62,574
	Sport	Johnstone Strait (11-12)	13,260	15,463
	Sport	WCVI - Inshore (20W-27)	48,933	21,827
	Sport	Fraser River	2,322	209
Total Recreational Catch			**122,318**	**127,201**
First Nations FSC and Treaty		Johnstone Strait	216	7
		Strait of Georgia	1,086	2
		WCVI	6,757	21
		Fraser River	16,345	109
Total First Nations FSC Catch			**24,404**	**139**
ESSR		Johnstone Strait		
		Strait of Georgia*	5,788	
		WCVI	42,728	
		Fraser River	6,633	0
Total First Nations ESSR Catch			**55,149**	**0**
TOTAL - ALL FISHERIES			**245,532**	**128,369**

15.4 APPENDIX 4: 2017 SOUTH COAST SOCKEYE CATCH BY FISHERY AND AREA

SOCKEYE*						
			Numbers			
Fishery	Gear	Fishery (Area)	Non-Fraser Kept	Unknown Origin	Fraser Kept	All Stocks Released
Commercial	Area G Troll	WCVI AABM Chinook (23-27, 123-127)	0	0	0	13
	Area H Troll	Fraser Sockeye (12,13)	0	0	0	0
	Area H Troll	Fraser Sockeye (29)	0	0	0	0
	Area H Troll	Fraser Pink (12, 13, 29)	0	0	0	0
	Area H Troll	JST Chum (12,13)	0	0	0	3
	Area H Troll	Fraser Chum (29)	0	0	0	0
	Area H Troll	MVI Chum (14)	0	0	0	0
	Area B Seine	Barkley Sockeye (23)	16,461	0	0	7
	Area B Seine	Fraser Sockeye (12,13)	0	0	0	0
	Area B Seine	Fraser Sockeye (16)	0	0	0	0
	Area B Seine	Fraser Sockeye (29)	0	0	0	0
	Area B Seine	Mainland Pink (12, 13,16)	0	0	0	0
	Area B Seine	Howe Sound (28)	0	0	0	0
	Area B Seine	Fraser Pink (12, 13, 29)	0	0	0	0
	Area B Seine	Nitinat Chum (21, 121)	0	0	0	0
	Area B Seine	JST Chum (12,13)	0	2	0	108
	Area B Seine	Fraser Chum (29)	0	0	0	0
	Area B Seine	MVI Chum (14-19)	0	0	0	0
	Area B Seine	Somass Chinook (23)	0	0	0	4
	Area D Gillnet	Barkley Sockeye (23)	9,936	0	0	0
	Area D Gillnet	Barkley Chum (23)	0	0	0	0
	Area D Gillnet	Somass Chinook (23)	8	0	0	6
	Area D Gillnet	Clayoquot Chum (24)	0	0	0	0
	Area D Gillnet	Esperanza Chum (25)	0	0	0	0
	Area D Gillnet	Tlupana Chinook (25)	0	0	0	0
	Area D Gillnet	Nootka Chum (25)	0	0	0	0
	Area D Gillnet	Kyuquot Chum (26)	0	0	0	0
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0	0	0
	Area D Gillnet	JST Chum (12,13)	0	0	0	1
	Area D Gillnet	MVI Chum (14)	0	0	0	0
	Area E Gillnet	Fraser Sockeye (29)	0	0	0	0
	Area E Gillnet	Fraser Chum (29)	0	0	0	0
	Area E Gillnet	Nitinat Chum (21, 121)				
	Area E Gillnet	MVI Chum (Area 17-19)	0	0	0	0
Commercial Harvest Total			**26,405**	**2**	**0**	**142**
First Nations Commercial	T'aaq-wiihak	WCVI ISBM Chinook (25)	0	0	0	0
	T'aaq-wiihak	WCVI AABM Chinook (24-26, 124-126)	0	0	0	0
	Maa-nulth	Henderson Sockeye (23)	0	0	0	0
	Harvest Agreement	Fraser River			0	0
	EO	Johnstone Strait				
	EO	Strait of Georgia				
	EO	WCVI	26,554	0	0	0
	EO	Fraser River			3	38
	Demo	Johnstone Strait				
	Demo	Strait of Georgia				
	Demo	WCVI				
	Demo	Fraser River			0	10
First Nations Commercial Total			**26,554**	**0**	**3**	**48**
Total Combined Commercial Catch			**52,959**	**2**	**3**	**190**
Recreational	Sport	Juan de Fuca (19,20)			128	949
	Sport	Strait of Georgia (13-19,28,29)			17	1,469
	Sport	Johnstone Strait (11-12)			73	246
	Sport	WCVI - Inshore (20W-27)	12,420	0	0	0
	Sport	WCVI - Offshore (121-127)			160	190
	Sport	Fraser River			0	0
Total Recreational Catch			**12,420**	**0**	**378**	**2,854**
First Nations FSC and Treaty		Johnstone Strait	100		9,031	5,000
		Strait of Georgia	0		314	53
		WCVI	24,672	394	0	0
		Fraser River			60,045	1,283
Total First Nations FSC and Treaty Catch			**24,772**	**394**	**69,390**	**6,336**
ESSR		Johnstone Strait				5,000
		Strait of Georgia				53
		WCVI	0	0	0	0
		Fraser River			0	0
ESSR Catch			**0**	**0**	**0**	**5,053**
TOTAL - ALL FISHERIES			**90,151**	**396**	**69,771**	**14,433**
*Fraser/Non-Fraser stock compositions are not final						

15.5 APPENDIX 5: 2017 SOUTH COAST PINK CATCH BY FISHERY AND AREA

PINK

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)	25	48
	Area H Troll	Fraser Sockeye (12,13)	0	0
	Area H Troll	Fraser Sockeye (29)	0	0
	Area H Troll	Fraser Pink (12, 13, 29)	0	0
	Area H Troll	JST Chum (12,13)	16	16
	Area H Troll	Fraser Chum (29)	0	0
	Area H Troll	MVI Chum (14-19)	0	0
	Area B Seine	Barkley Sockeye (23)	0	0
	Area B Seine	Fraser Sockeye (12,13)	0	0
	Area B Seine	Fraser Sockeye (16)	0	0
	Area B Seine	Fraser Sockeye (29)	0	0
	Area B Seine	Mainland Pink (12, 16)	0	0
	Area B Seine	Howe Sound Pink (28)	0	0
	Area B Seine	Fraser Pink (12, 13, 29)	0	0
	Area B Seine	Nitinat Chum (21, 121)	0	0
	Area B Seine	JST Chum (12,13)	682	42
	Area B Seine	Fraser Chum (29)	0	0
	Area B Seine	MVI Chum (14-19)	0	0
	Area B Seine	Somass Chinook (23)	0	1
	Area D Gillnet	Barkley Sockeye (23)	0	0
	Area D Gillnet	Barkley Chum (23)	0	0
	Area D Gillnet	Somass Chinook (23)	0	1
	Area D Gillnet	Clayoquot Chum (24)	0	0
	Area D Gillnet	Esperanza Chum (25)	0	0
	Area D Gillnet	Tlupana Chinook (25)	0	0
	Area D Gillnet	Nootka Chum (25)	0	0
	Area D Gillnet	Kyuquot Chum (26)	0	0
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0
	Area D Gillnet	JST Chum (12,13)	3	8
	Area D Gillnet	MVI Chum (14)	0	0
	Area E Gillnet	Fraser Sockeye (29)	0	0
	Area E Gillnet	Fraser Chum (29)	1	14
	Area E Gillnet	Nitinat Chum (21, 121)	0	0
	Area E Gillnet	MVI Chum (Area 17-19)	0	0
Commercial Harvest Total			**727**	**130**
First Nation Commercial Harvest	T'aaq-wiihak	WCVI ISBM Chinook (25)	0	0
	T'aaq-wiihak	WCVI AABM Chinook (24 - 26, 124 - 126)	0	0
	Maa-nulth HA	WCVI		
	Harvest Agreement	Fraser River	0	0
	EO	Johnstone Strait		
	EO	Strait of Georgia		
	EO	WCVI	0	0
	EO	Fraser River	4	117
	Demo	Johnstone Strait		
	Demo	Strait of Georgia	0	0
	Demo	WCVI		
	Demo	Fraser River	0	1
Total First Nations Commercial Catch			**4**	**118**
Total Commercial Catch			**731**	**248**
Recreational	Sport	Juan de Fuca (19,20)	9,706	4,135
	Sport	Strait of Georgia (13-19,28,29)	14,098	4,641
	Sport	Johnstone Strait (11-12)	3,550	2,168
	Sport	WCVI - Inshore (20W-27)	801	394
	Sport	WCVI - Offshore (121-127)	1,761	760
	Sport	Fraser River	0	0
Total Recreational Catch			**29,916**	**12,098**
First Nations FSC and Treaty		Johnstone Strait	24,670	6
		Strait of Georgia	387	0
		WCVI	20	0
		Fraser River	18,820	8,694
Total First Nations FSC Catch			**43,897**	**8,700**
ESSR		Johnstone Strait		
		Strait of Georgia	411	0
		WCVI	0	1
		Fraser River	0	0
Total First Nations ESSR Catch			**411**	**1**
TOTAL - ALL FISHERIES			**74,955**	**21,047**

15.6 APPENDIX 6: 2017 SOUTH COAST COHO CATCH BY FISHERY AND AREA

COHO

Fishery	Gear	Fishery (Area)	Numbers Kept	Numbers Released
Commercial	Area G Troll*	WCVI AABM Chinook (23 - 27, 123 - 127)	331	5,619
	Area H Troll	Fraser Sockeye (12,13)	0	0
	Area H Troll	Fraser Sockeye (29)	0	0
	Area H Troll	Fraser Pink (12, 13, 29)	0	0
	Area H Troll	JST Chum (12,13)	0	132
	Area H Troll	Fraser Chum (29)	0	0
	Area H Troll	MVI Chum (14-19)	0	0
	Area B Seine	Barkley Sockeye (23)	0	3
	Area B Seine	Fraser Sockeye (12,13)	0	0
	Area B Seine	Fraser Sockeye (16)	0	0
	Area B Seine	Fraser Sockeye (29)	0	0
	Area B Seine	Mainland Pink (12, 16)	0	0
	Area B Seine	Howe Sound Pink (28)	0	0
	Area B Seine	Fraser Pink (29)	0	0
	Area B Seine	Nitinat Chum (21, 121)	0	0
	Area B Seine	JST Chum (12,13)	291	742
	Area B Seine	Fraser Chum (29)	0	0
	Area B Seine	MVI Chum (14-19)	0	181
	Area B Seine	Somass Chinook (23)	684	84
	Area D Gillnet	Barkley Sockeye (23)	1	10
	Area D Gillnet	Barkley Chum (23)	0	0
	Area D Gillnet	Somass Chinook (23)	98	1
	Area D Gillnet	Clayoquot Chum (24)	0	0
	Area D Gillnet	Tlupana Chinook (25)	0	9
	Area D Gillnet	Esperanza Chum (25)	0	209
	Area D Gillnet	Nootka Chum (25)	0	135
	Area D Gillnet	Kyuquot Chum (26)	0	196
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0
	Area D Gillnet	JST Chum (12,13)	10	759
	Area D Gillnet	MVI Chum (14)	0	10
	Area E Gillnet	Fraser Sockeye (29)	0	0
	Area E Gillnet	Fraser Chum (29)	68	740
	Area E Gillnet	Nitinat Chum (21, 121)	0	39
	Area E Gillnet	MVI Chum (Area 17-19)	0	163
Commercial Harvest Total			**1,483**	**9,032**
First Nations Commercial	T'aaq-wiihak	WCVI ISBM Chinook (25)	0	0
	T'aaq-wiihak	WCVI AABM Chinook (24 - 26, 124 - 126)	0	989
	Maa-nulth HA	Henderson Sockeye (23)	0	0
	Harvest Agreement	Fraser River	63	0
	EO	Johnstone Strait		
	EO	Strait of Georgia		
	EO	WCVI	1,576	0
	EO	Fraser River	182	450
	Demo	Johnstone Strait		
	Demo	Strait of Georgia	0	0
	Demo	WCVI		
	Demo	Fraser River	73	91
Total First Nations Commercial Catch			**1,894**	**1,530**
Total Commercial Catch			**3,377**	**10,562**
Recreational	Sport	Juan de Fuca (19,20)	7,618	14,588
	Sport	Strait of Georgia (13-19,28,29)	8,588	32,529
	Sport	Johnstone Strait (11-12)	5,350	11,596
	Sport	WCVI - Inshore (20W-27)	10,390	4,102
	Sport	WCVI - Offshore (121-127)	13,953	23,428
	Sport	Fraser River	0	0
Total Recreational Catch			**45,899**	**86,243**
First Nations FSC and Treaty		Johnstone Strait	126	7
		Strait of Georgia	646	
		WCVI	8,489	0
		Fraser River	734	230
Total First Nations FSC Catch			**9,995**	**237**
ESSR		Johnstone Strait		
		Strait of Georgia	3,987	
		WCVI	9,579	241
		Fraser River	10,914	0
Total First Nations ESSR Catch			**24,480**	**241**
TOTAL - ALL FISHERIES			**83,751**	**97,283**

*Area G coho harvest estimate is based on the chinook year (Oct 1, 2016 to Sept 30, 2017). All retained coho are from September 331 coho retined were in September 2017 fisheries.

15.7 APPENDIX 7: 2017 SOUTH COAST CHUM CATCH BY FISHERY AND AREA

Chum

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)	156	17
	Area H Troll	Fraser Sockeye (12,13)	0	0
	Area H Troll	Fraser Sockeye (29)	0	0
	Area H Troll	Fraser Pink (12, 13, 29)	0	0
	Area H Troll	JST Chum (12,13)	17,627	0
	Area H Troll	Fraser Chum (29)	14	0
	Area H Troll	MMI Chum (14 -19)	0	0
	Area B Seine	Barkley Sockeye (23)	0	21
	Area B Seine	Fraser Sockeye (12,13)	0	0
	Area B Seine	Fraser Sockeye (16)	0	0
	Area B Seine	Fraser Sockeye (29)	0	0
	Area B Seine	Mainland Pink (12,16)	0	0
	Area B Seine	Howe Sound Pink (28)	0	0
	Area B Seine	Fraser Pink (29)	0	0
	Area B Seine	Nitinat Chum (21, 121)	0	0
	Area B Seine	JST Chum (12,13)	288,111	0
	Area B Seine	Fraser Chum (29)	0	0
	Area B Seine	MMI Chum (14-19)	111,846	0
	Area B Seine	Somass Chinook (23)	0	10
	Area D Gillnet	Barkley Sockeye (23)	1	0
	Area D Gillnet	Barkley Chum (23)	0	0
	Area D Gillnet	Somass Chinook (23)	0	1
	Area D Gillnet	Clayoquot Chum (24)	0	0
	Area D Gillnet	Tlupana Chinook (25)	27	1
	Area D Gillnet	Esperanza Chum (25)	6,353	0
	Area D Gillnet	Nootka Chum (25)	5,770	0
	Area D Gillnet	Kyuquot Chum (26)	8,284	0
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0
	Area D Gillnet	JST Chum (12,13)	96,219	43
	Area D Gillnet	MMI Chum (14)	16,964	0
	Area E Gillnet	Fraser Sockeye (29)	0	0
	Area E Gillnet	Fraser Chum (29)	77,139	11
	Area E Gillnet	Nitinat Chum (21, 121)	36,051	0
	Area E Gillnet	MMI Chum (Area 17-19)	180,711	0
Commercial Harvest Total			**845,273**	**104**
First Nations Commercial	T'aaq-wiihak	WCVI ISBM Chinook (25)	0	0
	T'aaq-wiihak	WCVI AABM Chinook (24 - 26, 124 - 126)	5	1
	Maa-nulth HA	Henderson Sockeye (23)		
	Harvest Agreement	Fraser River	4,815	0
	EO	Johnstone Strait		
	EO	Strait of Georgia		
	EO	WCVI	0	0
	EO	Fraser River	91,068	5
	Demo	Johnstone Strait		
	Demo	Strait of Georgia	11,025	
	Demo	WCVI	0	0
	Demo	Fraser River	13,639	0
Total First Nations Commercial Catch			**120,552**	**6**
Total Commercial Catch			**965,825**	**110**
Recreational	Sport	Juan de Fuca (19,20)	261	9
	Sport	Strait of Georgia (13-19,28,29)	2,235	73
	Sport	Johnstone Strait (11-12)	111	27
	Sport	WCVI - Inshore (20W-27)	27	29
	Sport	WCVI - Offshore (121-127)	9	24
	Sport	Fraser River		
Total Recreational Catch			**2,643**	**162**
First Nations FSC and Treaty		Johnstone Strait	14,313	
		Strait of Georgia	2,861	
		WCVI	2,927	0
		Fraser River	42,256	51
Total First Nations FSC Catch			**62,357**	**51**
First Nations ESSR		Johnstone Strait		
		Strait of Georgia	5,000	0
		WCVI	53,349	46
		Fraser River	13,447	0
Total First Nations ESSR Catch			**71,796**	**46**
TOTAL - ALL FISHERIES			**1,102,621**	**369**

15.8 APPENDIX 8: 2017 SOUTHERN BC COMMERCIAL CATCH TOTALS BY GEAR AND AREA

Commercial total, all species											
Licence Group	**Fishing Area**	**Adult Sockeye Kept**	**Sockeye Released**	**Coho Kept**	**Coho Released**	**Pink Kept**	**Pink Released**	**Chum Kept**	**Chum Released**	**Chinook Kept**	**Chinook Released**
Area G Troll*	WCVI AABM Chinook (23-27,123-127)	0	13	331	5,619	25	48	156	17	54,411	5,779
Area H Troll	Fraser Sockeye (12,13)	0	0	0	0	0	0	0	0	0	0
Area H Troll	Fraser Sockeye (29)	0	0	0	0	0	0	0	0	0	0
Area H Troll	Fraser Pink (12, 13, 29)	0	0	0	0	0	0	0	0	0	0
Area H Troll	JST Chum (12,13)	0	3	0	132	16	16	17,627	0	0	59
Area H Troll	Fraser Chum (29)	0	0	0	0	0	0	14	0	0	0
Area H Troll	MVI Chum (14)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Barkley Sockeye (23)	16,461	7	0	3	0	0	0	21	0	25
Area B Seine	Fraser Sockeye (12,13)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Fraser Sockeye (16)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Fraser Sockeye (29)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Mainland Pinks (12, 13, 16)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Howe Sound Pink (28)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Fraser Pink (12, 13, 29)	0	0	0	0	0	0	0	0	0	0
Area B Seine	Nitinat Chum (21, 121)	0	0	0	0	0	0	0	0	0	0
Area B Seine	JST Chum (12,13)	2	108	291	742	682	42	288,111	0	0	99
Area B Seine	Fraser Chum (29)	0	0	0	0	0	0	0	0	0	0
Area B Seine	MVI Chum (14-19)	0	0	0	181	0	0	111,846	0	0	10
Area B Seine	Somass Chinook (23)	0	4	684	84	0	1	0	10	3,152	210
Area D Gillnet	Barkley Sockeye (23)	9,936	0	1	10	0	0	1	0	73	16
Area D Gillnet	Barkley Chum (23)	0	0	0	0	0	0	0	0	0	0
Area D Gillnet	Somass Chinook (23)	8	6	98	1	0	1	0	1	7,059	0
Area D Gillnet	Clayoquot Chum (24)	0	0	0	0	0	0	0	0	0	0
Area D Gillnet	Esperanza (25)	0	0	0	209	0	0	6,353	0	0	8
Area D Gillnet	Tlupana Chinook (25)	0	0	0	9	0	0	27	1	20,202	0
Area D Gillnet	Nootka Chum (25)	0	0	0	135	0	0	5,770	0	0	10
Area D Gillnet	Kyuquot Chum (26)	0	0	0	196	0	0	8,284	0	0	7
Area D Gillnet	Fraser Sockeye (11,12,13,14)	0	0	0	0	0	0	0	0	0	0
Area D Gillnet	JST Chum (12,13)	0	1	10	759	3	8	96,219	43	1	16
Area D Gillnet	MVI Chum (14)	0	0	0	10	0	0	16,964	0	0	2
Area E Gillnet	Fraser Sockeye (29)	0	0	0	0	0	0	0	0	0	0
Area E Gillnet	Fraser Chum (29)	0	0	68	740	1	14	77,139	11	0	104
Area E Gillnet	Nitinat Chum (21, 121)	0	0	0	39	0	0	36,051	0	0	0
Area E Gillnet	MVI Chum (Area 14-19)	0	0	0	163	0	0	180,711	0	0	7
T'aaq-wiihak	WCVI AABM Chinook (24-26,124-126)	26,407	0	0	989	0	0	5	1	6,877	305
T'aaq-wiihak	WCVI ISBM Chinook (25)	0	0	0	0	0	0	0	0	1,598	0
Maa-nulth HA	Henderson Sockeye (23)	0	0	0	0	0	0	0	0	0	0
Harvest Agreement	Fraser	0	0	63	0	0	0	4,815	0	0	0
EO	Johnstone Strait	0	0	0	0	0	0	0	0	0	0
EO	Strait of Georgia	0	0	0	0	0	0	0	0	0	0
EO	WCVI	0	0	1,576	0	0	0	0	0	11,560	0
EO	Fraser River	26,554	38	182	450	4	117	91,068	5	16	410
Demo	Johnstone Strait	3	0	0	0	0	0	0	0	0	0
Demo	Strait of Georgia	0	0	0	0	0	0	11,025	0	0	0
Demo	WCVI	0	0	0	0	0	0	0	0	0	0
Demo	Fraser River	0	10	73	91	0	1	13,639	0	0	46
TOTALS		**79,371**	**190**	**3,377**	**10,562**	**731**	**248**	**965,825**	**110**	**104,949**	**7,113**

*Area G coho harvest estimate is based on the chinook year (Oct 1- Sept 30- the following year).

15.9 APPENDIX 9: 2017 SOUTHERN BC RECREATIONAL CATCH TOTALS BY AREA

Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
Juan de Fuca (19,20)	128	949	7,618	14,588	9,706	4,135	261	9	18,615	27,128		
Strait of Georgia (13-19,28,29)	17	1,469	8,588	32,529	14,098	4,641	2,235	73	39,188	62,574		
Johnstone Strait (11-12)	73	246	5,350	11,596	3,550	2,168	111	27	13,260	15,463		
WCVI - Inshore (20W-27)	12,420	-	10,390	4,102	801	394	27	29	48,933	21,827	5,520	10,073
WCVI - Offshore (121-127)	160	190	13,953	23,428	1,761	760	9	24	-	209	41,185	23,216
Fraser River *	0	-	-	-	-	-	-	-	2,322	209		
TOTAL	**12,798**	**2,854**	**45,899**	**86,243**	**29,916**	**12,098**	**2,643**	**162**	**122,318**	**127,410**	**46,705**	**33,289**

NOTES:
All totals are preliminary.
SOG includes a portion of Area 19 (19 GS).
JDF includes a portion of 19 and a portion of Area 20 (20 JDF).
WCVI Inshore contains a portion of 20W (West of Sherringham)
* estimates not yet available for some lower Fraser River recreational fisheries

15.10 APPENDIX 10: 2017 SOUTHERN BC FIRST NATIONS (FSC AND TREATY) AND ESSR CATCH ESTIMATES BY AREA

Fishery type	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
First Nations FSC and Treaty	Johnstone Strait	9,131	5,000	130	7	24,670	6	18,818	0	232	7	0	0
	Strait of Georgia	314	53	684	0	387	0	2,337	0	801	2	0	0
	WCVI	24,672	0	4,573	0	20	0	1,559	0	4,375	21	3,093	9
	Fraser River	60,045	1,283	734	230	18,820	8,694	42,256	51	16,345	109	826	0
TOTAL		**94,162**	**6,336**	**6,121**	**237**	**43,897**	**8,700**	**64,970**	**51**	**21,753**	**139**	**3,919**	**9**

Fishery type	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released
ESSR	Johnstone Strait	0	0	0	0	0	0	0	0	0	0
	Strait of Georgia	0	53	3,987	0	411	0	5,229	0	5,788	0
	WCVI	0	0	9,579	241	0	1	53,349	46	42,728	0
	Fraser River	0	0	10,914	0	0	0	13,447	0	6,633	0
TOTAL		**0**	**53**	**24,480**	**241**	**411**	**1**	**72,025**	**46**	**55,149**	**0**

15.11 APPENDIX 11: 2017 SOUTH COAST TEST FISHERY CATCHES

Test-Fisheries	Start Date	End Date	Boat Days	Sockeye kept	Sockeye released	Coho kept	Coho released	Pink kept	Pink released	Chum kept	Chum released	Chinook kept	Chinook released	GRAND TOTAL
Albion Chinook Gillnet	23-Apr-17	20-Oct-17	156	87	0	16	0	102	0	2,590	0	539	0	**3,334**
Albion Chum Gillnet	1-Sep-17	23-Nov-17	50	35	1	141	0	533	0	7,469	0	298	0	**8,477**
Mquqwin / Brooks Chinook Troll	10-Jul-17	29-Aug-17	27	0	0	15	99	0	0	0	0	945	56	**1,115**
Juan De Fuca Chum Seine	25-Sep-17	7-Nov-17	24	0	5	0	369	0	2	1,538	8,039	0	32	**9,985**
Area 12 Chum Seine	11-Sep-17	28-Oct-17	67	22	364	1	671	3,270	57	35,367	6,916	0	40	**46,708**
Naka Creek Sockeye Gillnet **	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Area 13 Sockeye Seine	31-Jul-17	14-Aug-17	15	1524	9536	0	41	4108	14637	322	1367	0	49	**31,584**
Area 23 Sockeye Seine	12-Jun-17	25-Jul-17	14	4,048	5,615	0	9	0	0	0	11	0	436	**10,119**
Blinkhorn Sockeye Seine	24-Jul-17	6-Sep-17	45	4,585	27,726	0	308	11,527	79,453	356	5,616	0	543	**130,114**
Round Island Sockeye Gillnet *	11-Jul-17	13-Aug-17	34	451	2	150	97	492	2	44	4	11	11	**1,264**
San Juan Sockeye Seine	25-Jul-17	7-Sep-17	45	3,289	664	0	1,788	16,696	1,271	0	351	0	1,936	**25,995**
San Juan Sockeye Gillnet	7-Jul-17	10-Aug-17	34	1,210	0	6	77	588	0	7	0	46	98	**2,032**
Whonnock Gillnet	28-Jun-17	30-Sep-17	95	1,026	15	137	2	1,681	45	605	5	505	18	**4,039**
Cottonwood Gillnet	12-Jul-17	10-Sep-17	61	749	36	0	14	416	21	7	0	60	18	**1,321**
Qualark Gillnet	2-Jul-17	24-Sep-17	85	1,369	11	43	5	1,022	310	1	0	330	14	**3,105**
Grand Total				**18,395**	**43,975**	**509**	**3,480**	**40,435**	**95,798**	**48,306**	**22,309**	**2,734**	**3,251**	**279,192**

* coho given to local First Nations
All test fish catches include assessment and non-assessment sets
** Did not operate in 2017
Note: Jacks are included in the above test fishing catches, if encountered

Discussion paper on hatchery add-ons and terminal area exclusions

Prepared by the Secretariat and national section experts[1]

July 3rd, 2018

Background

Negotiations are ongoing for amendments to Annex IV of the Pacific Salmon Treaty (Treaty), including changes to Chapter 3 (Chinook salmon). As part of these negotiations, delegates wish to understand the origins of specific text in Chapter 3 that has persisted since the 1999 amendments. The text in question refers to hatchery add-ons and terminal area exclusions as noted below in the version of Chapter 3, paragraph 12 currently in force:

The Parties agree:

> *(a) to continue the procedures and accepted exclusions previously established by the Commission to allow for the exclusion of Chinook salmon catches in selected terminal areas from counting against Treaty catch limitations; and*
> *(b) to continue the procedures previously established by the Commission to allow for hatchery add-ons harvested in AABM fisheries.*

Similar language is under consideration for an amended version of Chapter 3, but it is not clear which "procedures" are referenced in this text nor when they were established. The Parties have asked the Executive Secretary to investigate this, and the current report responds to that request.

Terminal area exclusions (TAE's)

The Treaty's 1985 original Chinook catch ceiling approach contemplated adjustments to those ceilings based on national proposals, Commission review, and acceptance by the Parties. The Parties began considering TAE's as a means to exclude certain catches from the fixed ceilings by 1989/1990. The May 1990 letter of transmittal conveying the agreed fishing regimes and amended Annex IV language to the Parties is the earliest record of such exclusions (for the Kitimat, Bella Coola, and Skeena regions), and states in pertinent part:

In October 1990, Canada will provide a report for the 1989 and 1990 seasons to the Commission containing the following elements: the number of chinook harvested in each of the exclusion areas, by age, size, maturity, time, area, and gear; the methods and data employed for determining exclusion area catches; effort statistics by time, area, gear, and target species; estimates of stock composition for each of the exclusion areas, accompanied by the data and

[1] John Carlile, John H. Clark, Jim Scott (USA), and Brian Riddell (CAN)

procedures employed to derive these estimates; and estimates of spawning escapements for natural chinook stocks.

The CTC shall review the report and provide comments and recommendations regarding the exclusion program, including, but not limited to: (a) the methods and procedures employed to monitor the fishery and estimate catches and stock compositions; (b) the delineation of exclusion areas; (c) potential impacts on depressed chinook stocks; and (d) alternative ways of establishing a base period catch level for exclusion areas. By February 1991, the Chinook Work Group will evaluate the CTC report and provide recommendations to the Commission regarding continuation of the terminal exclusion program, including procedures for estimating base period catches, and criteria to be used for selecting candidates for future terminal exclusion areas.

Canada submitted a report dated February 4, 1991 entitled "Review of 1989 and 1990 terminal area exclusion of Chinook catches from the Northern B.C. catch ceiling". In report TCCHINOOK (91)-02, the CTC reviewed Canada's submission and expressed certain concerns about the analysis and procedures used to monitor fisheries for catch and stock composition. In that same report, the CTC summarized procedures for successful implementation of TAE's as follows:

In selected areas, the catch of large (> 5 Ibs.) chinook in excess of a base catch level would not count against the all-gear catch ceiling if the following conditions are satisfied:

- *Spawning escapements of stocks targeted in the exclusion area are meeting or exceeding the interim escapement goal (larger domestic management goals may be used to limit the fishery when an exclusion is implemented);*
- *The harvest is comprised of mature chinook returning to local stocks while minimizing the harvest of immature and non-local fish.*
- *Management capabilities must exist to accurately account for and sample current and future harvest occurring exclusively in the exclusion area. In addition, capabilities to account for historical harvest are needed.*

Subsequently, the May 17, 1991 letter of transmittal recommending new fishing regimes to the Parties stated this about TAE's:

"with respect to terminal exclusions, the Commission agrees that the Chinook Working Group with the assistance of the Chinook Technical Committee and the findings reported in TCCHINOOK (91)-2, shall recommend standards and criteria to the Commission by January 1993, to govern consideration for future proposals for terminal exclusions."

The Secretariat cannot locate records of a Chinook Working Group report to the Commission on this topic. It is possible that this effort was pre-empted by the difficult negotiations on equity and other issues from 1994 to 1998, but the record is unclear on this point.

The May 17, 1991 letter of transmittal goes on to state the following conditions to be satisfied for acceptance of 1991 and 1992 TAE's in Bella Coola, Kitimat, and Skeena areas:

"a) Canada collects catch, coded-wire-tag, and biological sampling data from the exclusion area and provides preliminary catch and CWT data to the Commission in the January following the fishery and the remainder of the data by June of the year following the fishery:

b) the terminal exclusions satisfy the following general conditions:

i) spawning escapements of stocks targeted in the exclusion area are meeting or exceeding the interim escapement goal;
ii) the harvest in the exclusion area is comprised of mature chinook returning to local stocks while minimizing the harvest of immature and non-local stocks; and
iii) management capabilities accurately account for and sample harvest occurring exclusively in the exclusion area.

The text in (b) above repeats the CTC recommendation from TCCHINOOK (91)-2, and it appears in subsequent CTC reports as criteria for TAE adoption. It thus appears that the Commission adopted these as "procedures" for accepting new TAE's.

The language in the current Chapter 3 also mentions "accepted exclusions" being continued. After the Canadian terminal areas noted above switched to ISBM management in the 1999 agreement, TAE's became obsolete for them. However, also in 1999, Alaska adopted TAE's in the Situk, Taku, and Stikine rivers. Those exclusions generated debate in the CTC[2] and eventually yielded Commission agreement (via CIG recommendations) for certain exclusions for each of the three systems[3]. The 2004 amendments to Chapter 1 (Transboundary Rivers) adopted terminal fishery caps for Chinook in the Stikine and Taku systems and thus eliminated the need to calculate TAE's for them each year. Therefore, the only remaining TAE allowed under Chapter 3 is for the Situk River, although it is seldom used.

Hatchery add-ons

An add-on for Alaska hatchery production has been allowed for Southeast Alaska (SEAK) each year since implementation of the Treaty, including periods of fixed catch ceilings and aggregate abundance based management (AABM) regimes. No AABM fisheries beyond SEAK have a hatchery add-on calculated.

Procedures for estimating Alaska hatchery contributions of Chinook and determining an appropriate new production add-on have been essentially the same since 1986. The hatchery add-on, calculated in-season, is estimated in three steps[4]:

1. the total hatchery contribution of Chinook to all affected fisheries is estimated from coded-wire tags (CWTs) recovered during random in-season sampling of commercial and recreational catches;

[2] See TCCHINOOK (02)-1, TCCHINOOK (03)-1, and TCCHINOOK (04)-2 for relevant discussions.
[3] See PSC 20th Annual Report, p. 8 and 2004 Letter of Transmittal
[4] The earliest archived description of these procedures in the PSC archives is found in the report "Preliminary review of 1987 Alaska hatchery addon of Chinook salmon for Southeast Alaska fisheries and projected 1988 hatchery addon", prepared by ADF&G and dated December 18, 1987. This report is mentioned as the basis of the approval for the addon in the 1988 letter transmitting amendments to Annex IV on February 19, 1988.

2. the harvest of new hatchery production is then calculated by subtracting a level of "old hatchery production"[5] taken in the relevant fishery prior to Treaty implementation from the total contribution calculated in step 1 above; and
3. the allowable hatchery add-on is calculated as the new hatchery production harvest estimated in step 2 minus a "risk adjustment factor"[6] for a potential overestimate of the total hatchery contributions due to sampling variability.

Given this history, the reference to "procedures previously established by the Commission" for calculating hatchery add-ons refers to steps 1-3 above.

[5] The CTC has recommended that "old" or base-level pre-Treaty hatchery production should be no less than the average enhancement harvest during the approximate period 1977-1984. Currently, the base-level amount used in SEAK calculations is 5,500 fish, which is more conservative than the 1977-1984 average enhancement harvest of 3,000 fish.

[6] The Commission originally adopted a risk of 1 in 20 (i.e., there would be a risk of overestimating hatchery contribution once in twenty years). The final "risk adjustment factor" for 1 in 20 is expressed as 1.64 (the one-sided normal variate value for 1 in 20) x the coefficient of variation of the hatchery harvest estimate each season x estimated total hatchery fish harvest. In 1996, the CTC began accepting a 1 in 10 risk adjustment factor (reported as the value 1.282) and this has been reported in all subsequent CTC reports on the matter. The Secretariat has not confirmed whether the Commission formally approved this change, but the change has been clearly transmitted via CTC reports to the Commission.

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Attachment six

OCT 0 2 2018

Mr. Robert Turner (Co-Chair PSC)
National Marine Fisheries Service
510 Desmond Drive SE
Lacey, WA 98503
Tel: (360) 359-3580
Email: bob.turner@noaa.gov

Dear Mr. Turner:

I am writing to provide an update on Canada's approach for determining status reference points and corresponding exploitation rate (ER) caps for Canadian Southern Coho Management Unities (MUs) under Chapter 5, Annex IV of the Pacific Salmon Treaty (PST). This work addresses Canada's commitment under the PST to complete this work by December 2018.

As outlined in Chapter 5, allowable ERs for Canada and the U.S. are identified based on the status of Coho MUs. Canada is responsible for determining the status level for Canadian MUs and setting the corresponding ER caps for both parties. Scientific advice to inform this work was provided by a Canadian Science Advisory Secretariat (CSAS) process in the fall of 2017. I understand U.S. members of the Coho Technical Committee participated in that process and made very useful contributions. A draft Science Advisory Report (SAR), based on the CSAS process, was then used to inform extensive consultations with Canadian First Nations and stakeholders from January to June 2018.

Based on the results of the SAR and our domestic consultation process, Canada's management approach will be driven by the status of Interior Fraser River (IFR) Coho MUs, based on an integration of marine survival rates (with break points at 3% and 6%) and spawner abundance. Under this approach, ER caps will be set at 20%, 30% and 45% for Low, Moderate and Abundant status.

This approach will not result in a change to the US ER caps on Canadian MUs of 10% (Low); 12% (Moderate); or 15% (Abundant). In addition, Canada or the U.S. may choose to manage to a lower ER based on domestic fisheries management considerations.

Status determination and corresponding ER caps and are not contemplated for the Strait of Georgia and Lower Fraser MUs at this time, due to insufficient data. However, we may revisit this approach in the future.

Canada

A summary of Canada's approach for the IFR MU under the PST Southern Coho Management Plan is summarized in the table below:

	Low	Moderate	Abundant
Survival	S <= 0.03	Three consecutive years 0.03 < 0.06	Three consecutive years S > 0.06
Escapement	Monitored in CU's and sub-populations but no thresholds	and Three consecutive years: - Half of sub-pop'ns in each CU > 1000; or - Aggregate MU esc. objective (e.g., 27,000)	And Three consecutive years: - All IFR sub-pop'ns in each CU > 1000; or - Aggregate MU esc. objective (e.g., revised 40,000)
ER cap (US/Can)	**0.20** (0.10/0.10)	**0.30** (0.12/0.18)	**0.45** (0.15/0.30)

Additional background information as well as a summary report from domestic consultations may be found here: http://www.pac.dfo-mpo.gc.ca/consultation/smon/pst-coho-tsp/index-eng.html.

Should you have any questions, please don't hesitate to contact me or Laura Brown, Canadian co-chair of the PST Southern Panel. In addition, I would be happy to provide an update on this work and answer any questions at the upcoming PSC Executive Session in Vancouver, October 15 – 19, 2018.

I look forward to continued collaboration and engagement between Canadian and US representatives in support of successful Treaty implementation.

Yours sincerely,

Rebecca Reid
Regional Director General
Pacific Region

cc: Sukhraj Sihota, PSC Canadian National Correspondent
Patti Vandetta, PSC U.S. National Correspondent
John Field, PSC Executive Secretary
Laura Brown, Canadian Co-chair, PSC Southern Panel
Laurie Peterson, U.S. Co-chair, PSC Southern Panel

Canada

Draft: Oct 1st 2018

PACIFIC SALMON COMMISSION WORK PLAN 2018-19

Panel / Committee:

- *Southern Panel; reports to the Pacific Salmon Commission.*
  - *Coho Technical Committee (CoTC); reports to the Southern Panel.*
  - *Chum Technical Committee (ChumTC); reports to the Southern Panel.*

This work plan includes a summary of the work plans submitted by both the Coho and Chum technical committees, and as such does not include all of the detail in those work plans. This is not intended to deny the importance of that detail, only to provide a high level summary of it for Commissioners.

Date: *October 15-19, 2018 -- PSC Executive Session, Vancouver, BC.*

Update on Bi-lateral Tasks Assigned Under Current PSC Agreement:

Southern Panel:

- *Annual Post Season Review – A detailed bilateral review of the 2018 coho, chum and chinook salmon abundances, fishery performances, and preliminary estimates of escapement levels will be conducted at the January 2019 PSC post-season meeting.*
- *Present updates on the development of management objectives/breakpoints for Coho management units for the Southern Coho Management Plan of Chapter 5.*
- *Conduct pre-season data exchanges.*
- *Work on developing a bilateral process per the new Southern Coho Agreement (Chapter 5, Paragraph 11b and 11c new language)*
- *Review and recommend priorities for Southern Endowment Fund Committee consideration.*
- *Update reporting requirements, and assign work as required for completion.*

Coho Technical Committee:

The following list includes updates on the status of ongoing tasks from previous work plans, as well as descriptions of bilateral tasks planned for 2018-19:

(1) Post Season ER Estimates for Coho Management Units. In 2018, the CoTC completed the annual post-season report for the 2016 fishing season.

(2) Work to update a periodic report to cover the years 2010-2015 continued; held discussions with the Coho Workgroup and Southern Panel on producing an electronic form of the Periodic report. Programs were developed to facilitate generation of tabular summaries of data for the Periodic Report.

(3) The annual information exchange for fishery planning was performed.

(4) Regional fishery planning model development. Bilateral interaction for the CoTC was centered on model improvements to improve efficiencies in production of estimates of post-season exploitation rates provided to the Southern Panel.

(5) CoTC provided informational presentations on Ocean conditions, electronic hosting of the periodic report, and ideas for assessing environmental change at the February 2018 PSC meeting.

(6) Documentation and development of reference points for determining status and associated exploitation rate caps for individual management units Canadian (MUs) is proceeding in coordination with implementation of the Wild Salmon Policy (WSP) (in progress) and CSAP review.

(7) Develop agreed upon criteria and procedures for determining MU status. A common approach to data collection and parameter estimation, where feasible and appropriate, will facilitate implementation, but has not been developed.

(8) Complete MU descriptions. An outline of requirements was developed in 2003 and reviewed in 2009. A Coho database has been developed for U.S. stocks. Draft descriptions were prepared for Canadian MUs and will be finalized once reference points are determined. Draft descriptions for most US MUs were completed in 2012, reviewed by local fishery managers, and are currently being finalized.

(9) Criteria for defining MUs: A draft discussion paper has been prepared and is available as a publication from the PSC. No further work on MU delineation is anticipated for the foreseeable future.

(10) Assessment Framework. A presentation was made to the Southern Panel at the February 2012 Annual Meeting in Vancouver describing a draft framework to identify the biological and fishery assessments required for implementation of the Treaty provisions for Coho. No subsequent modifications have been made. The framework provides guidelines or criteria to help evaluate the adequacy of available information and the capacity of assessment programs to produce information required to implement the current Southern Coho Agreement and develop a new Southern Coho Agreement, highlights issues relating to CWT data for coho, and presents information needs within a decision-theoretic framework to help inform policy deliberations of relationships between uncertainty, risk, and potential requirements for assessment programs. Criteria discussed include: 1) conservation risk and stock outlook; 2) loss of fishing opportunity; and 3) costs for monitoring and assessment.

Chum Technical Committee:

- *Begin working on the draft report covering 2016 fisheries and research as a principal focus during the PSC meetings in January 2018.*
- *Review of new treaty language to evaluate data and analysis needs to conform to the information required.*
    - *Determine actual assessment program needs to effectively implement the Chapter 6 language.*
    - *Describe assessment program coverage needed by region/country to effectively implement the Chapter*
    - *Create a table and narrative of what is actually being implemented by region/country.*
    - *Summarize significant gaps*

  - *Develop an annual reporting tool to provide a summary of the activities and identified gaps.*

- *The committee's other focus will be to continue developing the following aspects of the strategic plan (see attached Figure).*
- *To provide updates on any approved 2018 SEF projects: Currently 4 Chum salmon projects are being conducted in 2018:*
  - **Further development of the run reconstruction module for Southern BC and Washington State Chum (ChumGEM model).**
  - **Sampling program in the Strait of Juan de Fuca (Year 3)**
  - **Estimate of total Fraser River escapement using GSI information at Albion Test Fishery and enumeration of Chilliwack River escapement (Year 3)**
  - **Mixed stock GSI in Southern BC and Puget Sound (Year 3)**
- *Work on 2018 reports associated with SEF projects for later submission*
- *Review of SEF priorities and ensure projects are ready for 2019 implementation should funding materializes.*
- *Identify additional sampling requirements to complete and/or update the existing baseline collections seeking other funding opportunities or resources to help with the database development, and other priority items such as the Escapement Reference Point development (Update on Holt et al. work).*

Obstacles to Completing above Bi-lateral Tasks:

Southern Panel:

- *To accomplish the above bi-lateral tasks, we will need the Commissioners' support to hold the requested number of meetings during 2019 that are noted below in the subsection, "Proposed Meeting Dates and Draft Agendas."*

Coho Technical Committee:

- *A draft replacement for the Southern Coho Agreement has been completed. Once adopted, the Agreement will redirect efforts of the CoTC away from routine reporting and toward improving CoTC efficiencies, stock and fishery assessments, and proactively dealing with uncertainties relating to environmental change.*
- *The basic structure of fishery regimes under the new Coho Agreement remains unchanged from the current CoABM in that status-dependent ER constraints on interceptions of naturally spawning MUs are established. However, the revised CoABM will presume that the status of the Interior Fraser Management Unit will remain "low" until methods to determine MU status and allowable ERs are completed. In addition, the new Agreement also contains a provision requiring the Parties to bilaterally exchange projected ERs upon completion of their respective domestic preseason fishery planning processes. Canada needs to complete two domestic approval processes for implementation of the new Coho Agreement. First, a domestic consultation process for establishing a framework for determining the status and allowable ERs for its Coho MUs is currently underway and it is expected to be completed and the framework approved for*

implementation by the end of December 2018. Second, Canada must determine the technical and policy details for exchanging projected ERs on Coho MUs and obtain administrative approval; the timeframe for completion of this process has not yet been established.

- *Staffing and funding levels to support implementation of the new Coho Agreement are uncertain. The CoTC is concerned about: (1) the capacity of both Parties to maintain catch sampling and stock monitoring programs, and to provide required inputs into joint management planning models; (2) the need for additional dedicated staff to participate in activities of the CoTC; (3) the need to improve information exchange on preseason FRAM runs for impact projections (preseason model runs from Canada are needed to provide projections of planned fishery impacts on MUs); and (4) the lack of established monitoring and reporting systems to assess impacts of environmental change.*

Chum Technical Committee:

- *While support from the Southern Endowment Fund has facilitated our efforts to implement the ChumTC strategic plan, time constraints for committee members remain a challenge for task completion.*

Outline of Other Panel / Committee Tasks or Emerging Issues:

Coho Technical Committee:

Budget availability and timing remain of concern. The capacity of the Parties to undertake assignments is being challenged by agency staffing and budget constraints and limitations of funding to support PSC related activities. Uncertain appropriations and budget allocation decisions for both the U.S. and Canada impede the capacity of the CoTC to plan its schedule and complete tasks. The CoTC and CoWG may need to revise the workplan once budgetary and staffing limitations and requirements are clarified.

Potential Issues for Commissioners

Coho Technical Committee:

(1) Transition to a new Southern Coho Agreement. The draft Southern Coho Agreement contains provisions that differ significantly from those in the current Agreement. This proposed workplan anticipates that CoTC efforts during this cycle reflect a transition and redirection of some old assignments and redirection of resources to new tasks in anticipation that PSC annex renegotiations will be put in place within the current cycle. Policy direction from the Coho Workgroup or Commissioners may be needed regarding CoTC priorities.

(2) Guidance will be needed regarding establishment of a process to provide the CoTC with the opportunity to review relevant proposals that are submitted for Southern Endowment Fund support. In addition, progress and final reports for Southern Endowment Fund projects involving Coho should be routinely provided to CoTC for information.

Potential Issues for Committee on Scientific Cooperation

The PSC should consider establishing a coast-wide, multi-species forum under the oversight of the Committee on Scientific Cooperation to share developments and advice

regarding adaptation of Pacific salmon management approaches to environmental change. There is strong evidence that environmental change is occurring and accelerating to a degree such that past experience cannot be expected to serve as a reliable basis to forecast the future. Increases in uncertainty, variability, and directional change are expected to alter hydrologic, precipitation, and temperature patterns which, in turn, are likely to affect the productivity, abundance, distribution, and migration patterns of Pacific salmon. The forum should provide reporting of significant developments in the knowledge base as well as vetting of recommendations for monitoring and reporting systems, and potential adaptation strategies.

Proposed Meeting Dates and Draft Agendas

Proposed meeting dates and key activities planned for Southern Panel, Coho Technical Committee (CoTC), Coho Working Group (CoWG), and Chum Technical Committee (ChumTC) are listed in the following section. Additionally, a summary table by meeting date in the 2018-19 work cycle is provided below. Attendance of panel and committee members may be dependent on available resources.

Southern Panel Meeting Schedule:

- *January 14-18, 2019 – PSC Post Season Meeting, Vancouver, BC.*
- *February 11-15, 2019 – PSC Annual Meeting, Portland, OR.*
- *Also, see Coho Working Group meeting schedule in the table below, which will include a subset of Southern Panel members.*

Coho Technical Committee (CoTC) and Coho Working Group Proposed Meeting Schedule:

- *November, 2018 – CoTC meeting, Olympia, WA.*
  - *Initiate preparation of mock-up of Periodic Report and electronic hosting system. Discuss Coho DIT report with SFEC.*
- *January 14-18, 2019 – PSC Post Season Meeting, Vancouver, BC.*
  - *Continue work on assignments, specifically preparing for estimation of 2017 exploitation rates and work with CoWG to revise workplan in light of instructions from PSC Executive Session*
- *February 11-15, 2019 – PSC Annual Meeting, Portland, OR.*
  - *Use Coho Model to perform 2016 post-season assessment of impacts.*
  - *Present annual review of exploitation rates to Southern Panel.*
  - *Briefing on ocean environmental conditions to Southern Panel.*
  - *Briefing on Periodic Report (years 2010-2015) to Southern Panel.*
- *March 2019 – Coho Working Group; Panel chairs and select members. (Location TBD; possibly Arlington, WA)*
  - *Annual manager-manager information exchange. Exchange preseason stock forecasts and fishery plans.*
- *July 2019 – Coho Working Group, Bellingham, WA*
  - *Review draft strategic plan for Southern Coho.*

- *Review methods for determining status of Canadian MUs, bilateral exchange of projected ER caps upon completion of domestic preseason fishery planning processes, and stock and fishery assessment programs for implementation of the new Coho Agreement.*
- *Review estimates of ERs for MUs resulting from domestic planning processes.*
- *Review Periodic Report and CoTC priorities. Initiate discussion of implications environmental change for Southern Coho Management.*

- *Sept 2019 – CoTC meeting, Seattle, WA*
  - *Initiate exploration of alternative approaches for addressing environmental change for management of Southern Coho.*

Chum Technical Committee Proposed Meeting Schedule:

- *January 14-18, 2019 – PSC Post-Season Meeting, Vancouver, BC*
  - *Review and discuss preliminary post-season 2018 fisheries information.*
  - *Collate and review report items for 2016 final post-season report.*
  - *Continue work on Southern Chum genetic baseline inventory and expansion for adequately identifying stock origin of fish in mixed stock fisheries on both sides of the border.*
  - *Continue to evaluate and test the ChumGEM model; presentation on ChumGEM progress, issues and next steps.*
  - *Updates on any completed SEF programs related to Chum.*
  - *Review and discuss research and analysis activities essential to the Committee tasks.*
  - *Review Chum Strategic plan and update.*
  - *Provide any bilateral analyses, as requested by the Southern Panel.*

- *February 11-15, 2019 – PSC Annual Meeting, Portland, OR*
  - *Continue work on 2016 annual report.*
  - *Address any specific tasks assigned to the Committee by the Southern Panel at the January meeting.*
  - *Continue work on tasks not completed at the January meeting.*
  - *Assign workgroups and workgroup tasks for items still pending at the end of the February meeting.*
  - *SEF projects for 2019-2020 should be identified and program planning initiated.*
  - *Start to develop new SEF priorities document for upcoming call*
  - *Initiate 2017 annual report*

- *May 2019 – PSC Chum TC Spring Meeting, location to be determined*
  - *Finalize 2016 annual report for submittal.*
  - *Continue to define and develop Tier 2 components of the Southern Chum Strategic Plan.*
  - *Review status of all SEF related projects and develop plan for new submission following identified priorities.*

Proposed Schedule of Meetings for 2018-19: PSC Southern Panel, CoTC, CohoWG, ChumTC			
When	**Who**	**Location**	**Purpose/ Primary Tasks**
November 2018 (dates TBD; 4 days)	CoTC	Olympia, WA	Initiate preparation of mock-up of Periodic Report and electronic hosting system. Discuss Coho DIT report with SFEC.
Jan 14-18, 2019 PSC Post Season Meeting	Southern Panel CoTC ChumTC	Vancouver, BC	Southern Panel • Annual Post Season Review • Work on developing a bilateral process per the new Southern Coho Agreement (Chapter 5, Paragraph 11b and 11c new language). • Present updates on the development of management objectives/breakpoints for Coho management units for the current Southern Coho Management Plan of Chapter 5. • Plan priority activities for future work. Coho Tech Committee • Continue work on assignments, specifically preparing for estimation of 2017 exploitation rates and work with CoWG to revise workplan in light of instructions from PSC Executive Session. Chum Tech Committee • Review and discuss preliminary post-season 2018 fisheries information • Collate and review report items for 2016 final post-season report • Continue work on Southern Chum genetic baseline inventory and expansion for adequately identifying stock origin of fish in mixed stock fisheries on both sides of the border. • Continue to evaluate and test the ChumGEM model o Presentation on ChumGEM progress, issues and next steps. • Updates on any completed SEF programs related to Chum • Review and discuss research and analysis activities essential to the Committee tasks • Review Chum Strategic plan and update • Provide any bilateral analyses, as requested by the Southern Panel.
Feb 11-15, 2019 PSC Annual Meeting	Southern Panel CoTC ChumTC	Portland, OR	Southern Panel: • Pre-season data exchanges. • SEF priorities developed and presented by technical committees and endorsed by Panel. • Ocean Indicators presentation. • Update reporting requirements, and assign work as required for completion. Coho Tech Committee: • Use Coho Model to perform 2017 post-season assessment of impacts. • Present annual review of exploitation rates to Southern Panel. • Briefing on ocean environmental conditions and progress on Periodic Report. Chum Tech Committee: • Continue work on 2016 annual report. • Address any specific tasks assigned to the ChumTC by the Southern Panel at the January meeting • Continue work on tasks not completed at the January meeting • Assign workgroups and workgroup tasks for items still pending at the end of the February meeting • SEF projects for 2019-2020 should be identified and program planning initiated • Start to develop new SEF priorities document for upcoming call • Initiate 2017 annual report
March 2019 (1 day; date TBD)	Coho Working Group (CoWG);	(TBD; possibly Arlington, WA)	Annual manager-manager information exchange. Exchange preseason stock forecasts and fishery plans.

Proposed Schedule of Meetings for 2018-19: PSC Southern Panel, CoTC, CohoWG, ChumTC			
When	**Who**	**Location**	**Purpose/ Primary Tasks**
	Panel chairs, select members		
May 2019 (dates TBD)	ChumTC	TBD	• Finalize 2016 annual report for submittal • Continue to define and develop Tier 2 components of the Southern Chum Strategic Plan • Review status of all SEF related projects and develop plan for new submission following identified priorities
July 2019 (4 days; dates TBD)	Coho Working Group + CoTC	Bellingham, WA	• Review draft strategic plan for Southern Coho. • Review methods for determining status of Canadian MUs, bilateral exchange of projected ER caps upon completion of domestic preseason fishery planning processes, and stock and fishery assessment programs for implementation of the new Coho Agreement. • Review estimates of ERs for MUs resulting from domestic planning processes. • Review Periodic Report and CoTC priorities. Initiate discussion of implications environmental change for Southern Coho Management.
Sept 2019 (dates TBD)	CoTC	Seattle, WA	Initiate exploration of alternative approaches for addressing environmental change for management of Southern Coho.

Status of Technical or Annual Reports:

Southern Panel:

- *To be reviewed at the January 2019 Post Season meeting, with a plan developed to complete outstanding reporting requirements.*

Coho Technical Committee:

- *Work plans and status were reviewed through presentations at the 2018 PSC meetings.*
- *Tools were developed to improve report generation capabilities using data generated by Backwards FRAM. 2016 post-season estimates of exploitation rates were presented to the Southern Panel at the February 2018 meeting in Portland.*
- *Efforts to update the periodic report and transition to electronic hosting were initiated.*
- *Draft descriptions for most U.S. MUs undergoing review. Completion of Canadian MU descriptions are pending determination of MU reference points anticipated in 2018.*
- *Annual report on CoTC priorities were developed for the Southern Fund Committee.*

Chum Technical Committee:

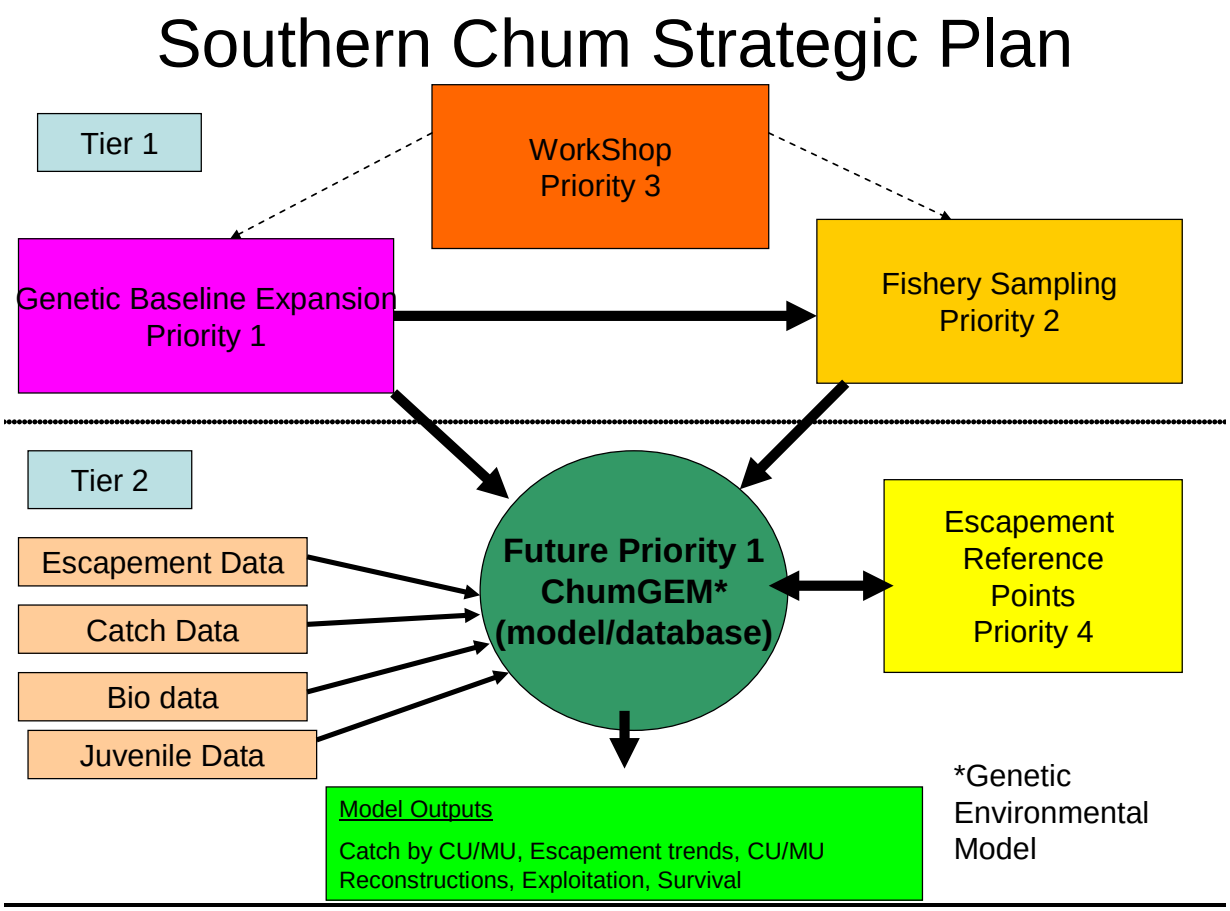
- *The committee anticipates having the 2016 Annual Report complete at the May 2019 ChumTC meeting.*
- *The committee anticipates having the 2017 Annual Report complete by the end of the February meeting in 2020.*

Comments:

Coho Technical Committee:

The CoTC workplan reflects redirection of efforts to support emphasis areas anticipated under the Southern Coho Agreement expected to be approved this cycle. The proposed priority list for CoTC during the 2018-2019 cycle follows (high to low): (1) Generate estimates of 2017 ERs for MUs; (2) Informational outlook for 2019 ocean conditions; (3) Information exchange for 2019 preseason fishery planning; (4) Update periodic report; (5) Evaluate and improve performance of Coho FRAM; (6) explore alternative approaches for addressing environmental change and management of Southern Coho; (7) initiate deliberations regarding status determinations for Canadian MUs; (8) all other assignments to be undertaken on time available basis.

Chum Technical Committee:



PACIFIC SALMON COMMISSION WORK PLAN
2018-2019

Panel / Committee: Fraser River Panel and Fraser River Panel Technical Committee

Date: Provided at PSC Executive Session in Vancouver, BC on October 15-19, 2018.

Update on Bi-lateral Tasks Assigned Under Current PSC Agreement:
The Panel continued implementation of Chapter 4 of the Pacific Salmon Treaty for the 2018 sockeye salmon season.

Obstacles to Completing above Bi-lateral Tasks:
There were no obstacles to Panel implementation of the Fraser River Sockeye Salmon chapter (Chapter 4 of the Pacific Salmon Treaty) in 2018.

Outline of Other Panel / Committee Tasks or Emerging Issues:
As directed by the Commission, the Panel has undertaken work in support of the hydro-acoustics review being shepherded by the Fraser Strategic Review Committee (FSRC). During 2015 Dr. Carl Walters provided a report with recommendations for the FSRC to "*examine alternative hydroacoustic monitoring configurations for the Mission Bridge and Qualark Creek stations – both as independent and as complementary operations, as well as other assessment methodologies*." The Panel created both a Steering Committee of Panel members and a technical working group with the Panels Technical Committee members, PSC staff and staff from the Department of Fisheries and Ocean Canada. A significant number of work items to address Dr. Walters's recommendations have been completed to date and others are currently in progress. In 2018 specific issues at both Mission and Qualark were to be evaluated in-season with a report from the technical working group expected at the January session in Vancouver. The Panel will continue this work as needed until the strategic review is completed.

Outcomes and recommendations from the Test Fishery Review process require further consideration and in some cases, further progress on implementation. As well, outcomes need to be considered in conjunction with the hydro-acoustics review in providing recommendations for an overall Fraser sockeye and pink salmon assessment approach for the future.

The Fraser River Panel will continue activities associated with chapter renegotiation. At this time the Fraser Panel does not anticipate significant issues with chapter renegotiations but is considering planning to schedule additional time (1 day meeting) prior to the January 2019 meeting if necessary.

Potential Issues for Commissioners:
One issue for the Commissioners following the 2018 fishing season is the cost of Panel-related test fisheries and the use of revolving funds in 2019 and beyond to cover potential shortfalls. Returns of Fraser sockeye were slightly lower than forecast in 2018 however sufficient numbers of fish were retained in test fisheries to cover the cost of the 2018 program with a small surplus anticipated. Both countries contributed resources to the Test Fishery Revolving Fund (TFRF) for 2018. While a forecast for the 2019 sockeye and pink return year will not be available until January or February, parent year sockeye escapement in 2015 and pink escapement in 2017 were low suggesting that the 2019 returns may not be sufficient for the retention of payfish to cover the entire cost of the 2019 test fishery program. Thus, if the historical test fishing program on this cycle was conducted, potential net revenues in 2019 would range from a $3,000,000 surplus (if returns were similar to 2011 and all fish encountered could be retained and sold) to a potential deficit exceeding $900,000 (if returns were more similar

to 2015, and catches were very poor and restricted. The TFRF has a current balance of approximately $1,306,496. The 2018 program is expected to generate surplus revenues, which subject to Commission approval, would add to this balance. It is anticipated that the TFRF balance should be sufficient to cover the deficit associated with the worst case scenario described above for 2019. Given the prospects for poor returns in 2019-2021 future contributions to the TFRF may be required to address potential deficits in those years. The Panel's test fishery review did not identify significant cost savings which would reduce the size of the potential deficit (or increase the size of the potential surplus) beyond the actions the Panel has taken in recent years.

Potential Issues for Committee on Scientific Cooperation

The work of the Committee on tracking environmental anomalies will be of great interest to the Fraser River Panel.

Proposed Meeting Dates and Draft Agendas:

October 15-19, 2018 PSC Executive Session

Present the 2018/2019 Fraser Panel/Fraser River Panel Technical Committee Work Plan to the Commission.
Present updates on the hydro-acoustic work underway to the FSRC.
Provide an update on the test fishery review conducted by the Fraser Panel and follow-up actions under consideration.
Provide update on chapter 4 renegotiations and items to be addressed.

Special issues the Panel will address by the conclusion of the Annual meeting cycle include:

1. Review and provide a report to the Commission on the 2018 implementation of Chapter 4 of the Pacific Salmon Treaty.
2. Address management performance and accountability issues, including a review of "2018 Fraser Management Plan Principles and Constraints" and consistency in managing all fisheries to meet bilateral objectives.
3. Continue to review the technical information and modeling work being used as the basis for the Fraser Panel's Management Adjustments, as well as additional in-season information that has been used when applying Management Adjustments in-season. Review the procedure for incorporating these adjustments into in-season management of Fraser sockeye.
4. Compare in-season estimates of sockeye run size by management group with observed spawning escapements, catches and any applied management adjustments, including review of upstream migration timing, en-route mortality and spawning success of late-run stock components. Where differences are observed, evaluate the potential causes of observed differences, including consideration of the potential contribution of fishery induced mortalities to any discrepancies. Compare the observed differences to the projected differences based on the Management Adjustments adopted by the Panel in-season.
5. The Panel will prepare recommendations on 2019 Fraser sockeye and pink related proposals to the Southern Endowment Fund (SEF) Committee. The Panel developed a list of specific funding priorities, which was used in the SEF call for proposals, so that applications will be focused on work of the most value to the Panel.

6. Review issues concerning the management of Fraser sockeye and pink salmon, including escapement goal determination, documentation of escapement levels, and variations in marine area migration timing and diversion that result in stock and/or species overlap and management complications in Panel fishery harvest areas.
7. The Panel will continue discussions on methods for determining allowable impacts on non-targets stocks and species, and necessary conservation actions, in Panel Area fisheries.
8. The Panel will continue to review and discuss data and management implications relating to the placement of stocks within the Fraser River Sockeye Management Groups, including the changes made to the stock aggregations in 2012. As an outcome of this discussion and review, the Panel will determine whether further revision of stock management group assignments for individual stocks is warranted, and whether the stocks would be more appropriately managed as part of other stock management groups for 2019 or longer term.

January, 2019 PSC Post-Season Meeting

Each National Section shall conduct detailed reviews of the 2018 Fraser River sockeye salmon return, fishery performance, special conservation actions and escapement levels and provide a summary of this information to the Commission.

February, 2019 PSC Annual Meeting

The Panel shall continue discussions of any unresolved special issues.

The Panel shall address "Other Activities" identified for the Panel in the 2018/2019 Work Plan.

The Panel will initiate the 2019 Pre-Season Planning process consistent with the provisions of the renewed Annex IV, Chapter 4 of the Pacific Salmon Treaty, and any guidance provided by the Commission. The Panel will require meetings in April and June 2019 in addition to the PSC Annual Meetings to complete pre-season planning tasks.

Outline of Other Activities of the Fraser River Panel for the 2018/2019 Cycle
This list includes special items/topics of less time sensitive nature or one-time projects.

Continue development of an improved Fraser sockeye and pink fishery planning model. The Panel will facilitate, monitor and provide guidance as necessary to the efforts of the PSC Staff and Fraser River Panel Technical Committee to develop the new Fraser Fishery Pre-season Planning Model.

Continue work on Hydro-acoustics: The Panel will continue work on Hydro-acoustics as directed by the Commissioners.

Continue with work to advance recommendations from the Test Fishing review and to implement test fisheries in the most cost-effective manner possible, while obtaining information required to inform run size decisions.

Evaluate Panel-Approved Test Fisheries and potential use of data from other sources. Using resources provided through the SEF, workshops were held in the Fall 2016 and

Spring 2017 to develop criteria to evaluate the relative merits of both current as well as alternative test fishery programs. The workshops identified a number of areas for priority research of which some were supported by SEF in 2018. Results of these initiatives will be reviewed by the Panel.

Review 2018 Test Fisheries and Develop a Test Fishing Plan for the 2019 Season. Plan will incorporate any changes and recommendations from the Test Fishery Review and follow-up projects, and/or use of data from other sources that could improve in-season assessments.

Review Progress in Completing the Canadian Sockeye Escapement Initiative: The Panel may receive a presentation on changes and updates to the Fraser River Sockeye Spawning Initiative (FRSSI) following up on work identified from a workshop that occurred in January 2018.

PSC staff will provide a progress report on the sampling programs at Mission, including any issues that arose from modifications made to the program in 2018. The Panel will also receive a report on the 2018 Qualark acoustic program. Results from the 2018 experiments at both locations will be reviewed by the Panel in January 2019.

The Technical Committee will review data updates to the Fraser sockeye catch and exploitation rate files, and make revisions as needed. Work will include advancement on the Run Size Adjustment process.

The Technical Committee will draft a memo on data sharing and co-ordination so that changes to production data can be tracked from various data sources.

Administrative Issues: Review and approve outstanding Panel minutes and Fraser River Panel Annual Reports.

Review the PSC proposed budget for 2019 Fraser River Panel Programs.

Status of Annual Reports:

In January 2016, the Panel adopted a new process for completing the annual reports that focuses on the recent years first and then completes the backlog. The 2015 annual report was published in November of 2016, the 2016 annual report was published in October of 2017 and the 2014 annual report was published in May of 2018. The 2017 annual report has been reviewed and comments have been received from both countries. It is anticipated that it will be published fall 2018. The 2018 annual report will be sent for review by March 31, 2019 and should be published fall 2019. The 2013 report still needs to be sent for review, but it is anticipated this will happen by December 2018.

Fraser River Panel Meeting Schedule[1]

January 14-18, 2019	PSC Post-Season Meeting	Vancouver
February 11-15, 2019	PSC Annual Meeting	Portland
March, 2019 – 1 day	Fraser River Panel Technical Committee	TBD
April, 2019 – 2 days	Fraser River Panel Technical Committee	TBD
April, 2019 – 2 days	Fraser River Panel Pre-Season Planning	TBD
May, 2019 – 2 days	Technical Modeling Meeting	Vancouver
June, 2019 – 2 days	Fraser River Panel Technical Committee	TBD
June, 2019 – 2 days	Fraser River Panel Pre-Season Planning	TBD
July 5, 9, 12, 16	Fraser River Panel – In-Season Meeting	Calls
July 19, 23, 26	Fraser River Panel – In-Season Meeting	Calls
July 30, 2019	Fraser River Panel – In-Season Meeting	Richmond
August 2, 9, 16, 23, 30	Fraser River Panel – In-Season Meeting	Calls
August 6, 2019	Fraser River Panel – In-Season Meeting	Richmond
August 13, 2019	Fraser River Panel – In-Season Meeting	Richmond
August 20, 2019	Fraser River Panel – In-Season Meeting	Richmond
August 27, 2019	Fraser River Panel – In-Season Meeting	Richmond
September 3, 6, 10	Fraser River Panel – In-Season Meeting	Calls
September 24-26, 2019	Fraser River Panel – Post-Season Meeting	TBD

1 – This schedule will be reviewed for opportunities to improve upon efficiency and reduce Panel costs.

PACIFIC SALMON COMMISSION WORK PLAN
2018-2019

Panel / Committee:
Transboundary Panel (reporting to the Pacific Salmon Commission)
Transboundary Technical Committee (reporting to the Transboundary Panel)
Enhancement Sub-Committee (Reporting to the Transboundary Panel and Transboundary Technical Committee)

Date: *For review at the Executive Session of the Commissioners on October 15-19, 2018 (in Vancouver, B.C.), with updates provided at the Executive Session and reporting presented at the Annual Meeting on February 11-15, 2018 (in Portland, OR).*

Update on Bi-lateral Tasks Assigned Under the Current Agreement:

1) Review and discuss implementation strategy for renewed and new Pacific Salmon Treaty Chapter 1 elements (i.e. Transboundary Panel and Transboundary Technical Committee areas of focus).

The Transboundary Rivers Chapter (Chapter 1) of Annex IV of the Pacific Salmon Treaty was revised and recommended for renewal (with Changes) effective January 1, 2019. The Agreement calls for implementation of revised and new initiatives to facilitate achieving bilateral fishery management, enhancement, research and conservation goals.

2) Review and Implement Abundance Based Management Fishery Regimes.

Under Chapter 1, abundance-based management fishery regimes are in place for: Taku River Chinook, sockeye, and coho salmon; and Stikine River Chinook and sockeye salmon. Harvest sharing agreements are in place for respective U.S. and Canadian fisheries and are regulated with the objective of achieving agreed escapement and harvest sharing goals. The Agreement calls for development and implementation of abundance-based regimes for Stikine River coho salmon and for Alsek River Chinook and sockeye salmon within the current annex period. In addition, the Parties have committed to review and to provide recommendations for both the maximum sustained yield goal and assessment programs for Taku River sockeye salmon prior to the 2020 fishing season.

3) Continue existing and expand joint enhancement programs designed to produce annually 100,000 returning sockeye salmon to each of the Taku and Stikine rivers.

On the Stikine River, enhanced production has contributed significantly to existing fisheries harvesting sockeye salmon (combined catch 45,000/year). Taku River sockeye salmon enhancement has been limited to date, with total combined annual catches averaging 6,500/year. With support from the Northern Endowment Fund, new and expanded enhancement options on both the Stikine and the Taku rivers are being pursued to achieve progress towards the bilateral enhancement goal. The Agreement calls for annual development of a Stikine Enhancement Production Plan (SEPP) and a Taku

Enhancement Production Plan (TEPP), which are finalized and recommended by the Transboundary Panel at the Pacific Salmon Commission Annual meeting.

4) Harvest sharing performance.

Pursuant to Paragraph 4, Chapter 1, of the Pacific Salmon Treaty, the Transboundary Panel completes an annual review of catch and escapement performance (overage/underage) for treaty-defined stocks and fisheries. The review is intended to identify any occurrences of harvest overage or underage, and in cases where situations exist, enable the respective Party to develop and present proposed actions in response for implementation in the upcoming season. The Paragraph 4 review is concluded by the Transboundary Panel at the Pacific Salmon Commission Annual meeting with specific recommendations presented to commissioners.

Obstacles to Completing above Bi-lateral Tasks:

1) The Parties shall improve procedures for coordinated and cooperative management of the fisheries on transboundary river stocks.

With the renewal of Chapter 1 effective 2019, the Transboundary Panel will review the commitment to advance development of an abundance-based management regime for Stikine coho salmon and Alsek Chinook and sockeye salmon with the objective of identifying specific actions and activities required to achieve progress. In addition, the Transboundary Panel will continue to review and explore enhancement program initiatives to achieve progress towards achieving bilateral sockeye salmon objectives (100,000 annually) in both the Taku and Stikine rivers. The principle obstacle to completing these tasks is a lack of funding. The Parties' ability to support development and implementation of these new initiatives has been hampered with the uncertainty of fiscal resources available from the Northern Endowment Fund (which has been, and is anticipated to continue to be, oversubscribed).

The review and recommendation for modification or renewal of the Taku River sockeye salmon maximum sustained yield goal and assessment programs are contingent on completion of requisite scientific and technical analysis within the specified timeline. Work is actively underway, the timing of finalization of recommendations and the Parties' subsequent agreement on specific actions is intended to achieve the 2020 completion date.

Outline of Other Panel / Committee Tasks or Emerging Issues:

A recent lengthy period of poor survival and production for northern British Columbia and Southeast Alaska Chinook stocks has resulted in significant challenges to fishery management strategies and harvest opportunities. These challenges extend to ancillary fisheries that may incidentally intercept Chinook salmon as a non-target species (i.e. sockeye salmon fisheries). Despite conservative management actions and implementation of reduced time and other measures to minimize Chinook salmon interceptions, the

minimum spawning escapement goal has not been achieved for either Taku or Stikine stocks since 2015. The Transboundary Panel will continue to monitor this situation and provide recommendations to the Parties for specific management and/or stock restoration measures.

Potential Issues for Commissioners, including enhancement activities reported under Article V:

The loss of use of Tuya Lake for sockeye salmon enhancement beyond 2014 has precluded achieving the 100,000 enhanced production objective identified for the Stikine River. In addition, domestic regulatory uncertainty (i.e. provincial permitting/approvals) in Canada have created delays in advancing progress on the Trapper Lake sockeye re-introduction project in the Taku River, limiting progress on expanding enhanced salmon production within the watershed.

Potential Issues for Committee on Scientific Cooperation: *None*

Proposed Meeting Dates and Draft Agendas:

Transboundary Panel:

1. Pacific Salmon Commission Post-Season (January 14 – 18, 2019; Vancouver, BC): [1]
    - Summary of juvenile Chinook and coho salmon coded wire tagging on the Taku and Stikine rivers
    - Review of the 2018 U. S. and Canadian fisheries in the Taku, Stikine and Alsek Rivers and resultant spawning escapements.
    - Summary of salmon passage in 2018 past the Stikine (Tahltan) River landslide including update on remediation.
    - Review 2018 Taku River Chinook and sockeye salmon radio tagging results.
    - Review of Taku and Stikine rivers enhanced production returning in 2018.
    - Review of enhanced sockeye salmon fry out-plants in the Taku and Stikine rivers completed in 2018.
    - Review of egg takes and other enhancement activities that took place in 2018.
    - Review of preliminary SEPP and TEPP (2019).
    - Review overage/underage fishery and escapement performance; discuss any overage/underage in 2018.
    - Northern Endowment Fund – update on projects under consideration for funding in the Transboundary Rivers geographic area (2019).
    - Status of the "*Transboundary Panel Strategic Salmon Plan, 2019-2028*"

[1] Monday is anticipated to be individual Canadian and U.S. Section Panel meetings, Tuesday and Wednesday are anticipated to be Bilateral Panel meetings. Panel attendance is expected to be 100% on Monday-Wednesday with support from 10 USTTC members and 6 CDNTTC members.

2. Pacific Salmon Commission Annual (February 11 – 15, 2019; Portland, OR): [2]

- Follow-up to questions and issues that arose from post-season review.
- Presentation of bilateral 2018 Stikine, Taku and Alsek rivers salmon outlooks.
- Final Panel review of SEPP and TEPP and development of recommendations to the Parties concerning SEPP and TEPP for 2019.
- Update on Taku River sockeye salmon stock assessment review (2020 completion target).
- Discussion of management measures being planned by both Parties to address Chinook salmon conservation for the Taku, Stikine, and Alsek rivers stocks.

Transboundary Technical Committee:

1. Fall Post-Season (November 13-16, 2018; Seattle, WA; full committee meeting with up to 13 USTTC and 13 CDNTTC in attendance):
   - Finalize 2018 Preliminary post-season report including:
     - Review Canadian and U.S. Fisheries (catches, management actions, PST compliance): Stikine, Taku, Alsek rivers
     - Stock assessment projects: juvenile tagging, MR, Chinook and sockeye salmon radio-telemetry, Nahlin DIDSON, CPUE, aerial surveys, CWT, GSI, weir counts, assessment fisheries, wild/enhanced components, creel/catch sampling, spawning ground surveys
     - Escapements: Stikine: drainage-wide Chinook salmon and Tahltan Lake and mainstem sockeye salmon; Taku: drainage-wide Chinook, sockeye, and coho salmon; Alsek: drainage-wide and Klukshu River Chinook and sockeye salmon
   - Taku and Stikine rivers 2019 Chinook salmon forecasts
   - Tahltan River landslide and remediation update
   - Alsek River salmon assessment programs
   - Sockeye Enhancement projects and programs
     - Review of 2019 activities (proposed/planned)
     - 2019 SEPP and TEPP development (draft)
     - Enhancement planning: 2019 egg-takes and out-plants (from 2018 egg takes)
   - Review overage/underage fishery performance and escapement spreadsheet
   - Review/finalize outstanding final catch and escapement reports
   - Discuss Northern Endowment Fund projects in the Transboundary Rivers area
   - Report publication schedule

2. Late Winter (late February/early March 2019; Vancouver, BC; full committee meeting with up to 13 USTTC and 13 CDNTTC in attendance):
   - 2019 stock assessment program planning - Stikine, Taku, Alsek rivers

[2] Monday is anticipated to be individual Canadian and U.S. Section Panel meetings, Tuesday and Wednesday are anticipated to be Bilateral Panel meetings. Panel attendance is expected to be 100% on Monday-Wednesday with support from 10 USTTC members and 6 CDNTTC members.

- Run outlooks (Chinook, sockeye, and coho salmon) – Stikine, Taku, Alsek rivers
- Preliminary fishery management plans 2019
- Genetic baseline update and sampling plan 2019
- Enhancement sub-committee sockeye salmon enhancement programs and projects (planning for 2019) including hatchery activities, egg-take targets, assessment studies, data summary updates and 2019 management plan.

3. Spring Management (March 2019; partial committee attendance via teleconference):

- Transboundary Technical Committee Management Plan 2019
  - U.S. management plans and activities
  - Canadian management plans and activities
  - Joint activities
  - SEPP and TEPP
  - Follow-up and final publication

Status of Reports:

Transboundary River Panel:

- *"Transboundary Panel Strategic Salmon Plan, 2019-2028"* – March 2019

Transboundary

- *"Final Estimates of Transboundary River Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2018"* – January 2019

- *"Salmon Management and Enhancement Plans for the Stikine, Taku, and Alsek Rivers, 2019"* – April 2019

Comments: The Transboundary Panel will seek to conclude bilateral meeting sessions over a two-day period (Tuesday and Wednesday of PSC meetings) in each January and February 2019.

PACIFIC SALMON COMMISSION WORK PLAN
2018-2019

Panel / Committee:

Northern Panel (reporting to the Pacific Salmon Commission)

Northern Boundary Technical Committee (reporting to the Northern Panel)

Date:

For review at the Executive Session of the Commissioners on October 15 - 19, 2018 (in Vancouver, BC)

Update on Bi-lateral Tasks Assigned Under Current PSC Agreement:

Northern Panel:

1. Review Northern Boundary Area fisheries for 2018 and discuss compliance with provisions of the 2009 PST Agreement.
2. Review and approve the Northern Boundary Technical Committee's update of the 2017 allowable and actual harvests of sockeye salmon, and 2018 allowable and actual harvests of pink salmon, as specified in Annex IV, Chapter 2. Depending upon the availability of a report from the NBTC, may also review preliminary 2018 allowable and actual harvests of sockeye salmon.
3. Review and discuss implementation strategy for renewed and new Pacific Salmon Treaty Chapter 2 elements (i.e., Northern Boundary Panel and Northern Boundary Technical Committee areas of focus). The Northern Boundary Chapter (Chapter 2) of Annex IV of the Pacific Salmon Treaty was revised and recommended for renewal (with Changes) effective January 1, 2019. The Agreement calls for implementation of revised and new initiatives to facilitate achieving bilateral fishery management, enhancement, research and conservation goals.

Northern Boundary Technical Committee:

Complete the 2017 Boundary Area sockeye salmon and 2018 pink salmon run reconstructions, update the cumulative Annual Allowable Harvest sharing agreements, and submit to the Northern Panel for approval. Depending upon availability of data, may also present a preliminary 2018 Boundary Area sockeye salmon run reconstruction.

Commence a review and discussions regarding coho abundance, data, and factors that may affect coho management issues pertaining to the PST. This review includes NBC, SEAK and Transboundary rivers in the SEAK area.

Obstacles to Completing above Bi-lateral Tasks:

None.

Outline of Other Panel / Committee Tasks or Emerging Issues:

Northern Panel:

1. Review the status of the Northern Fund, receive updates on funded projects, and provide input as appropriate for project funding processes underway for 2018–2019.

Northern Boundary Technical Committee:
None.

Potential Issues for Commissioners, including enhancement activities reported under Article V:
None.

Potential Issues for Committee on Scientific Cooperation
None.

Proposed Meeting Dates and Draft Agendas:

Northern Panel:

The Northern Panel will meet in conjunction with the Commission Post Season Meeting in January 2019 and, as determined appropriate by the Panel in January, the Commission Annual meeting in February 2019.

Northern Boundary Technical Committee:

Complete the 2017 Boundary Area sockeye salmon and 2018 pink salmon run reconstructions, update the cumulative Annual Allowable Harvest sharing agreements, and submit to the Northern Panel for approval. Depending upon availability of data, may also present a preliminary 2018 Boundary Area sockeye salmon run reconstruction. Review existing coho data in NBC, SEAK and southern Transboundary rivers

Status of Technical or Annual Reports:
A draft of the NBTC Annual Report for 2018 fisheries is expected to be available for the January, 2019 meeting.

Comments:
None.

PACIFIC SALMON COMMISSION
SELECTIVE FISHERY EVALUATION COMMITTEE WORK PLAN
October 2018 – September 2019

Panel / Committee:

Selective Fishery Evaluation Committee (SFEC).
SFEC Reports to the PSC Commissioners.
October 15-19, 2018, (Executive Session)

Update on Bi-lateral Tasks:

The PSC established the SFEC to assess impacts of mass marking and mark-selective fisheries on the viability of the CWT system. The SFEC has three components: (1) an Oversight Committee, comprised principally of the Co-Chairs of the PSC SFEC, Coho, Chinook, and Data Sharing Committees; (2) an Analytical Work Group (SFEC AWG), which is responsible for developing methods and conducting analyses of impacts of mass marking and mark-selective fisheries on the viability of the CWT program; and (3) a Regional Coordination Work Group (SFEC RCWG) which coordinates information sharing on mass marking and regional sampling programs, including electronic tag detection.

One of the main tasks of the SFEC is to review the proposals for mass marking (MM) and mark selective fisheries (MSFs) that are submitted annually to the PSC by the agencies conducting these activities. An annual report summarizing the review of MM and MSF activities proposed for 2017 and 2018 was published this year. A letter was sent out to the agencies in May reminding them of MOU requirements to provide finalized MSF plans and early notice of future MSF and MM plans. Agencies were responsive to this request.

A letter to agencies requesting the completion of proposal templates for MM and MSF activities planned for 2019 will be distributed in October by the PSC Secretariat. Agencies have been requested to submit proposals to the PSC Secretariat by November 1. The letter also reminds agencies that post season reports of MSFs are required as part of the MOU.

The full bilateral SFEC is scheduled to meet in mid-December 2018. The main objectives of this meeting are to review MM and MSF proposals for 2019, complete the 2018 Annual Report, and finalize a draft report evaluating MSF impacts through double-index tag analysis. SFEC will also be discussing new MSF and MM requirements outlined in the 2019 Agreement that affect committee and agency responsibilities. Meetings and conference call will be scheduled as necessary.

Obstacles to Completing above Bi-lateral Tasks:

Post-Season Reports: Two post-season reports on MSFs are required for each MSF prosecuted to provide data needed by the Chinook (CTC) and Coho (CoTC) Technical Committees for implementation of PSC fishing regimes and for analysis of MSF impacts.

The first report is to be submitted by the agencies prior to the PSC annual post-season meeting following the year in which the fishery was conducted. The SFEC continues to recommend that these tables with post-season information be included in the annual post-season reports submitted to the PSC by the US and Canada for the post-season meeting in January to simplify MSF reporting by agencies.

The timeliness and consistency of agencies in providing first post-season reports for MSFs still needs to be improved. SFEC members have worked with agency staff through personal contact to obtain some of the requested data, but detailed stock-age-fishery impacts of MSFs on unmarked fish have not been forthcoming.

The second MSF report is to be provided by agencies prosecuting MSFs not later than November 30th following the year in which the MSF fishery occurred. This report is to provide stock-age-fishery estimates of mortalities of unmarked fish in MSFs. These reports are available in an online reporting system for Puget Sound Chinook salmon MSFs, but SFEC has not received any of the second type of MSF reports for other MSFs.

Inability to estimate impacts of mixed-bag fisheries: Proposals for Chinook and Coho MSFs from all agencies include various forms of mixed-bag regulations (e.g., daily bag of 2 Coho, 1 of which can be unmarked), with varying degrees of complexity; further, the incidence of mixed-bag regulations is increasing. Because of the on-going variation of regulations employed for MSFs, the SFEC is unable to develop standardized methods for estimation of mortalities of unmarked fish. Additionally, catch sampling programs and analytical methods are generally inadequate to estimate impacts on marked and unmarked fish under these varying mixed-bag regulations. A description of the estimation methods being employed or planned to estimate MSF impacts in mixed-bag fisheries will be requested from agencies submitting MSF proposals such regulations in 2019 proposals. Without these improvements, the increasing incidence of mixed-bag fisheries will continue to reduce the accuracy of estimates of MSF impacts on unmarked fish.

Travel budget constraints: The SFEC is aware of the uncertainty surrounding travel budgets and the ability to convene in-person meetings of the committee and its work groups. The proposed schedule below reflects our intent to perform as much of the MM and MSF review, analyses and report development as possible via independent evaluation, emails, and conference calls. The number of in-person meetings has been reduced to the minimum necessary for the tasks assigned to the SFEC by the PSC.

Outline of Other Panel / Committee Tasks or Emerging Issues:

The CTC has been incorporating estimates of fishery impacts on unmarked wild stocks in its annual Model Calibration and CWT Exploitation Rate reports. Methods for estimation of impacts will need to be reviewed in light of implementation of an AABM MSF fishery in the SEAK troll fishery in 2016 and 2017. Review of recoveries of Chinook DIT releases in non-selective and selective fisheries and escapements, and their utility for estimation of impacts on unmarked fish in MSFs, is in progress by the SFEC-AWG. This work is of high priority.

The CTC has requested assistance from SFEC members regarding incorporation of MSF algorithms in the annual exploitation rate analysis, the PSC Chinook Model, and the annual Coastwide Chinook Model calibration. The required modifications are expected

to occur in the next few years as the CTC-AWG proceeds with identified improvements to the structure and function of the computer programs currently being used. The priority to incorporate algorithms and data for MSFs may increase if recreational and commercial MSFs for Chinook continue to expand in AK, WA and BC coastal areas.

CWT-based CoTC post-season cohort reconstruction methods for direct estimation of MSF impacts are not feasible given the reduction of DIT programs and heavy reliance on MSFs. Due to a combination of factors, including reduced survival, reduced tagging, and reduced exploitation, tag recovery is inadequate for most, if not all, of our Coho stocks to utilize methods developed by the CoTC to estimate production expansion factors and exploitation rates. Therefore, CoTC relies on assumption-based methods, such as Backwards Coho FRAM to estimate post-season MSF and NSF exploitation rates and total mortalities of unmarked and marked fish using reported estimates of fishery encounters and releases. A meeting between SFEC-AWG and CoTC will be required to discuss the Coho DIT report.

Potential Issues for Commissioners:

Timely and accurate information via post-season reports on prosecuted MSFs is needed by the SFEC to assess the impacts of MM and MSFs on the CWT system. Little can be done without the post-season information from MSFs but to date, workload and other agency issues have resulted in few submissions. As noted above, post-season reports providing estimates of stock-age-fishery mortalities of unmarked fish have not been submitted to SFEC for all MSFs. WDFW and NWIFC s have developed a prototype reporting system that could expedite reporting of these data.

Joint SFEC-CTC meetings will be needed to develop algorithms and methods to incorporate the capacity to evaluate MSFS in the PSC Chinook Model. MSFs have been implemented at a spatial and temporal scale that is much finer that that employed in the CTC Model.

Several agencies have dropped or are dropping DIT releases and are not recovering CWTs from unmarked DIT fish due to budget constraints. DIT groups require the release of paired groups of tagged fish and the use of electronic tag detection in recovering unmarked DIT fish from fisheries and escapements. (An additional complicating factor is the reporting of DIT recoveries in sub-sampled escapements without information required for expansion). DITs have two uses in evaluation of MSFs and estimation of their impacts. First, DITs with a marked and unmarked tag group provide the ability to quantify differences in mortalities between marked and unmarked fish as a result of MSFs for indicator stocks(reduced mortality on unmarked stocks is a primary goal of MSFs according to the PST (e.g., Chapter 3, paragraph 5(a)). The second use of DITs is to provide information to help bound estimates of stock-age-fishery mortalities of unmarked fish, required to maintain the viability of the coastwide CWT program.

SFEC is concerned that the Canadian catch sampling and reporting system is not fully aligned with the complexity of MSF regulations. Absent alignment, it is difficult to evaluate MSF impacts and comparing recoveries of DIT groups is not possible.

Status of Reports:

Technical or Annual Reports. The reports reviewing MM and MSF proposals for 2015 and 2016 have been published, and the report for 2017 is near completion. SFEC expects completion of the report on Coho DIT analysis for brood years 1998-2011 (up to fishery year 2014) in early 2019.

Proposed SFEC Meeting Dates and Draft Agendas:

When	Who	Location	Purpose
Dec 10-13, 2018	SFEC RCWG, AWG	Seattle, WA	Review annual proposals for MM and MSFs submitted by agencies. Request clarifications from agencies as needed. Finalize draft DIT Analysis Report. Prepare summary report for PSC Commissioners. Review and revise format and content of post-season MSF reports, as necessary.
Jan. 14 or 15, 2019 (PSC Annual Post-season Meeting)	SFEC	Vancouver, BC	SFEC Co-Chairs and members already in attendance as a cost effective measure to finalize annual report.
Feb. 11-15, 2019 (PSC Annual Meeting)	SFEC co-chairs	Portland, OR	SFEC Co-chairs report to PSC and identify any issues or concerns regarding agency proposals for 2019 MM and MSF, and status of post-season reporting.
TBD	SFEC AWG	TBD	Meet with CoTC to present and discuss Coho DIT report.
TBD	SFEC AWG	TBD	Work with CTC AWG to incorporate MSFs into CTC Model.

PACIFIC SALMON COMMISSION WORK PLAN
2018-2019

Panel / Committee:

Joint Technical Committee on Data Sharing (TCDS) and its subcommittee Data Standards Work Group (DSWG).

The Joint Technical Committee on Data Sharing functions as a steering committee for Coded Wire Tag (CWT) data sharing issues and liaises with the Chinook Technical Committee (CTC), Selective Fishery Evaluation Committee (SFEC), and Coho Technical Committee (CoTC) to improve CWT data to better support their analytical work to meet Treaty obligations. This Committee defines requirements needed for bi-lateral CWT data exchange and additional verification rules that would improve the integrity of the data.

The Data Standards Working Group (DSWG) sub-committee reviews requirements established by the TCDS, makes recommendations on how to implement them, and does the work of modifying the bi-lateral data exchange standards and verification process.

Data Sharing reports directly to the Commissioners.

Date:

This work plan will be presented to the commission during the 2018 Fall Session October 15-19, 2018 in Vancouver, BC.

Update on Bi-lateral Tasks Assigned Under Current PSC Agreement:

There were no specific bi-lateral tasks for this committee under the 1999 or 2008 PSC agreement other than the general agreement as described in the 1985 Memorandum of Understanding to maintain and make improvements to the CWT system. Since 1985, TCDS and DSWG have been maintaining and updating the CWT data exchange standards and verification process.

Following the work of the CWT Expert Panel, the CWT Workgroup and the CWT Improvement Team, we understand that the Commissioners want the TCDS to continue in the role of examining issues pertaining to CWT data. The new data specification standards that the committee will complete in 2019/20 will support analytical work of the joint committees and improve confidence levels, quality and accuracy of the data.

Obstacles to Completing above Bi-lateral Tasks:

1) Data Sharing Committee Membership

   Participation at meetings and progress on addressing data sharing issues may be

a low priority for members with other competing PSC Committee activities or the PST negotiations workload.
No work was accomplished by the Data Sharing Committee this past year (2017/2018), due to the workload of the renegotiation process of the Pacific Salmon Treaty.

Outline of Other Panel / Committee Tasks or Emerging Issues:

None

Potential Issues for Commissioners, including enhancement activities reported under Article V:

None

Potential Issues for Committee on Scientific Cooperation

None

Proposed Meeting Dates and Draft Agendas:

When	Who	Location	Purpose
January 2019	TCDS	Conference call	Review and approve DSWG recommendations and timelines for implementation of updates to CWT data exchange specifications.
February 2019	TCDS	Portland, OR	Review and approve DSWG recommendations and timelines for implementation of updates to CWT data exchange specifications. An in-person meeting will occur only if there are significant issues to resolve that cannot be effectively addressed by the January 2019 conference call.
April 2019	DSWG	Vancouver, BC	Finalize documentation of updates to CWT data exchange specifications. Review new proposals for changes/improvements for data exchange.
September 2019	TCDS	Conference call	Complete CWT data sharing report containing new data exchange specifications. Review new requirements for changes/improvements for data exchange.

Status of Technical or Annual Reports:

DSWG has developed a standard formal process for documentation and review of proposals for change. By Sept 2019, TCDS will complete a report containing updated data exchange standards and an implementation plan for improvements to CWT data sharing.

Comments:

No additional comments.

PACIFIC SALMON COMMISSION WORK PLAN
2018-2019

Panel / Committee:
Committee on Scientific Cooperation (CSC) report to the Commission

Date: October 1, 2018

Update on Bi-lateral Tasks Assigned Under Current PSC Agreement:
At the 2018 Annual Meeting, the CSC presented the revised document "*Elaboration of a strategy for consideration of annual variation in environmental indicators and salmon production and its implications for fisheries management under the Pacific Salmon Treaty."* This document identified several elements for documenting anomalous environmental conditions and evaluating their implications for salmon production under the Pacific Salmon Treaty. The Commission approved moving forward with the development of improved communication and access to information sources and data relevant to this issue. They deferred a decision on developing capacity for compiling and evaluating annual variability in environmental and salmon indicators.

The CSC identified two courses of action for improved communication on these issues. These are (1) development of a PSC SharePoint site focused on coastwide variation in environmental indicators and salmon production; and (2) holding a "miniworkshop" at the 2019 Annual Meeting on variability in environmental indicators and its implications for fisheries management under the Pacific Salmon Treaty.

1. SharePoint Site on Variation in Environmental Indicators and Salmon Production

Update on 2017/2018 activities:
The CSC has worked with the Executive Secretary and Secretariat Staff (IT, Library Resources) to create an alpha version of a PSC SharePoint site titled "Variability in Pacific Salmon & their Environment." This portal aims to (1) Provide links to key information sources such as online datasets, statistical tools, documents, and library resources throughout the region; (2) Stimulate and record PSC-wide discussion over emerging issues in environmental and biological anomalies; (3) Be user-driven yet overseen by the CSC for content, updates, and revision as time goes on.

The alpha site was presented at the roundtable on Emerging Scientific Issues at the 2018 Annual Meeting to get feedback from Panel and Technical Committee members. The CSC then had the alpha version reviewed in March by two experts on ocean conditions affecting salmon and incorporated comments into the beta-version of the site. The Secretariat subsequently provided password access to the site to the broader PSC community. The Executive Secretary and the CSC hosted a webinar in June, 2018, to announce availability of the site and to provide a tour of its content.

Proposed 2018/19 activities:

The CSC plans to host a short session at the 2019 Post-season meeting to again inform the PSC science/management community on access to the site, its structure, and its information content. The CSC will use feedback from the session to further evolve the site, and will track usage in 2019 to evaluate its utility and guide future development.

2. **Workshop on environmental variability and salmon production**

Update on 2017/2018 activities:

To implement the Strategy element for a Workshop on the status of salmon in relation to the state of the ocean from different regions across the eastern North Pacific Rim, the CSC generated a proposal for consideration for funding by the Fund Committees in 2018. The CSC obtained a grant from the Southern Fund Committee for a "mini-workshop" to be held at the 2019 Annual Meeting. The title of the workshop is "Mini-workshop on coastwide variation in environmental indicators and salmon production and its implications for fisheries management under the Pacific Salmon Treaty." The workshop will be organized into two sessions. Each session will be 1.5 hr long, with three speakers (30 min per speaker for presentation/discussion). The sessions will be held on sequential days during the Annual Meeting to better accommodate the full schedules of PSC meeting participants. The CSC has been conferring through the summer months to identify presenters at the workshop.

Proposed 2018/19 activities:
The CSC will identify, invite, and confirm speakers for the workshop; work with the Secretariat to arrange the venue within the proposal budget and to schedule the sessions; coordinate and manage the sessions; and facilitate discussion. The first session will be reports on the state of the ocean and the state of salmon populations in a changing environment. Experts from the Pacific Northwest, Canada, and Alaska will be invited to give presentations from the different geographic perspectives. The second session will be examples of fishery management models and approaches accounting for measures of environmental variation and change, and may include examples for both salmon and other fish species. The CSC will summarize the outcome of the workshop for its 2019 Annual Report.

Obstacles to Completing above Bi-lateral Tasks:

Further development and utility of the CSC SharePoint site is dependent on its use by the PSC science/management community. Structure, content, and access to the site are all considerations to making the portal of value to the users. Scheduling for the mini-workshop during the 2019 Annual Meeting will be a challenge, to provide opportunity for attendance and participation while not overly conflicting with the Technical Committee and Panel processes.

Outline of Other Panel / Committee Tasks or Emerging Issues:

1) Identification of Emerging Scientific Issues. The CSC has hosted a lunch-hour round table discussion approximately every other year with Technical Committee and Panel chairs and interested members to identify emerging scientific issues of importance to the PSC science community. These meetings have been important for providing direction and focus for CSC action. The CSC hosted such a meeting at the 2018 Annual Meeting, and will not host one in 2019. The CSC will review Committee/Panel workplans for identification of emerging issues, and will also consider input from the SharePoint and workshop sessions.

2) International Year of the Salmon (IYS[LC1]). In May, 2019, the NPAFC/IYS program, in partnership with the Salmon Ocean Ecology Meeting, is sponsoring a workshop on "Salmon Ocean Ecology in a Changing Climate." This workshop will be a more expansive look at the issues being addressed in the CSC mini-workshop. The presentations and outcomes of this meeting will be important for continued development of improved communication and access to information on environmental variability and salmon production. As per the Commission's directive, the CSC has no direct role in IYS planning or implementation. The Commission has identified the Executive Secretary as the point of contact for PSC participation in the IYS Initiative, and the Canadian CSC co-chair is involved in the IYS planning as part of their professional responsibilities outside of CSC activities. Thus the Executive Secretary and the Canadian co-chair can keep the CSC informed on the results from this IYS workshop so that they can be considered in the development of future activity plans including information sessions for the PSC science community.

Potential Issues for Commissioners:
N/A

Potential Issues for Committee on Scientific Cooperation:

The CSC welcomes the opportunity to review suggestions put forward by the Panels and Technical Committees and remains prepared to address any priority issues identified by Commissioners. Specifically, it would welcome further direction from the Commissioners on implementing additional elements from the document "*Elaboration of a strategy for consideration of annual variation in environmental indicators and salmon production and its implications for fisheries management under the Pacific Salmon Treaty*".

Proposed Meeting Dates and Draft Agendas:
Current members of the CSC plan to teleconference in October and November and to meet at the January and February PSC meetings. The CSC agenda at the meetings will include: 1) Hold an information session for the SharePoint site at the post-season meeting; 2) Coordinate and manage the sessions at the mini-workshop at the 2019 Annual Meeting, and facilitate

discussion; 3) use the outcomes of the SharePoint and workshop sessions and input from the Commissioners to guide continued work in 2019 and the development of future workplans.

Status of Technical or Annual Reports:
The CSC has regularly provided annual reports on schedule, and will provide an annual report to the Commission at the 2019 Annual Meeting. No new technical reports were produced by the CSC in 2018.

Comments: N/A

October 17, 2018

Memorandum

To: Chinook Technical Committee
From: Pacific Salmon Commission
Re: Update on Functions and Operations Group

The Pacific Salmon Commission (PSC) would like to provide an update to the Chinook Technical Committee (CTC) on the status of the Functions and Operations Group (FOG). This group was created in September 2017 to respond to concerns identified around workload, and unclear roles and responsibilities among CTC members.

The Commission received a report from the FOG in October 2017, setting out three general areas of concern:

1. Administrative support by the PSC
2. Accountability by the Management Agencies
3. Clarity of CTC and CIG roles and responsibilities

In response, the Commission approved the following actions in January and February 2018:

1. Responsibility for decision making:
    - Amended the bylaws and presented amendments at the February 2018 Commission meeting for approval; Amendments to Rule 11 of the bylaws was approved by the Commission and indicates that in circumstances where, consensus cannot be achieved by Joint technical committees, as deemed by at least one co-chair, the co-chairs will consult the Commission Chair and Vice-Chair for direction.
2. Size and composition of the CTC:
    - The Commission approved a letter to Management Entities regarding the need for succession planning, workplans, financial commitments and required skills in PSC Joint Technical Committees.
    - Management entities have begun the process of succession planning. A meeting of management entities is planned for February 2019 to further develop succession planning and clarification of roles.
    - In January 2018, the Commission approved a process for determining and approving CTC workplans, including timelines and check-ins with the Chair and Vice Chair. For reference, please refer to the CTC workplan.
3. Further actions approved by the Commission through 2018:
    - Creation of a data manager position to support the CTC as a pilot for two years.
    - Training for Committee/Panel chairs: All Panel and Technical Committee leadership has been invited to attend a one-day training session on how to run effective technical meetings. This will be led by a fisheries scientist who has offered the course internationally, and whose curriculum comes highly

recommended. The event will be held the Sunday before the January 2019 meeting in Vancouver, B.C.

- Publication support: The Secretariat launched a one-year pilot project for the PSC administrative assistant to format certain CTC reports for final publication. This effort was identified as a major time commitment from the CTC leadership, and the pilot project will be evaluated in spring 2019 for potential extension.

The Commission accepts the recommendations of the FOG which support the operations of the CTC and CIG as the new Annexes are implemented. The Commission intends to meet with the CTC to discuss the actions outlined above at the February 2019 meeting. The CIG will continue its role in supporting the CTC and managing the interface between policy and technical issues, as the FOG will have completed its last task.

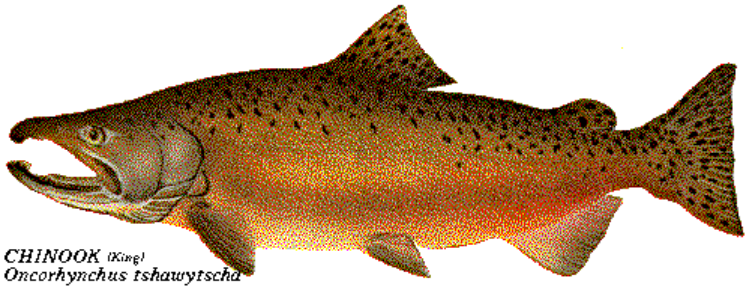
Further, three background documents have been attached for PSC records.

Thank you.

Attachment 1: Report from the Code of Conduct Subgroup to the Chinook negotiating team
Attachment 2: Memo to CTC Code of Conduct Workgroup
Attachment 3: Memo to CTC Review Group

FOG Membership:

- Bob Turner
- Ron Allen
- Charles Swanton
- Rebecca Reid
- Sue Farlinger
- John Field



PSC Chinook Technical Committee

PACIFIC SALMON COMMISSION WORK PLAN 2018-2019

Panel / Committee:

The Chinook Technical Committee reports to the Pacific Salmon Commission.

Date: PSC Fall Session - October 15-19, 2018

Update on Bi-lateral Tasks Assigned Under the Current PSC Agreement:

CTC Work Plan Tasks Assigned for 2018 (Note: the Commission instructed the CTC that the 2017-2018 Workplan extended through the end of 2018)

1. Annual Analyses

- 2018 Chinook exploitation rate analysis (ERA) - *Completed*

- 2018 Chinook Model Calibration - *Completed*

2. Annual Reports

- 2018 Catch and Escapement (C&E) report - *Completed*

- 2018 Calibration and Exploitation Rate Analysis (CLB&ER) report - *Nearing completion*

3. Ad-hoc Reports

- Phase 2 of the base period recalibration of the PSC Chinook Model - *In Progress with substantial progress expected during a Nov 5-9AWG meeting*

4. Ad-hoc Analyses

- Investigation and implementation of mark-selective fishery algorithms in the annual exploitation rate analysis - *In Progress but the work is in a highly preliminary state*

- Escapement goals presented for review and acceptance will be evaluated by the CTC - *None have been brought forward for review*

- Testing and validation of the DGM - *In Progress with the computer code having been completed and a workshop on operation of the DGM provided to the CTC by Li Ding on Sep 18*

- Modify Chinook model**,** test, and implement stock specific growth functions and agency estimates of shakers - *No progress*

Proposed List of CTC Work Plan Tasks for 2019 and Beyond

The proposed list of tasks reflects those tasks that were high priorities on the 2017/18 workplan and that are expected to persist under the renewed Chinook chapter. The CTC recognizes that tasks on the 2019 workplan may be changed and different priorities assigned once the renewed chapter begins and the CTC has reviewed responsibilities.

1. Annual Analyses

- 2019 ERA

- 2019 Chinook Model Calibration

2. Annual Reports

- 2019 C&E report

- 2019 CLB&ER report

- The CTC will discuss changes to the structure of the annual reports to reflect changes to CTC obligations contained in the recently completed 2019 PST Agreement. We will also discuss changes to the annual reports to reduce the size of the reports, improve readability and provide easier access to information related to provisions of the new agreement. We will also explore strategies to expedite the production of our annual reports which may include building upon techniques developed by the Coho Technical Committee.

3. Ad-hoc Reports

- Phase 2 of the base period recalibration of the PSC Chinook Model – the CTC notes that the text of the renewed Chinook Chapter identified that the Commission expects to receive the Phase 2 Model improvements by Feb 2019 so that a decision can be made on their implementation

4. Ad-hoc Analyses

- The CTC will review the list of CTC tasks, analyses and assignments contained in Appendix A of the recently completed 2019 PST Agreement to determine what new or modified analyses, reports and workgroups may be required to meet the provisions of the agreement.

- Investigation and implementation of mark-selective fishery algorithms in the annual exploitation rate analysis - *In Progress but the work is in a highly preliminary state*

- Escapement goals presented for review and acceptance will be evaluated by the CTC

- Testing and validation of the DGM and evaluation of CWT-based CTC models and methods- *In Progress*

- Modify Chinook model**,** test, and implement stock specific growth functions and agency estimates of shakers - *On 2017 work plan*

- Testing and validation of ForecastR - *In Progress*

- Testing and validation of CIS - *In Progress*

- Phase III Model Improvements including implementation of MSF capability in the Chinook Model and related stratification of stocks and fisheries, time periods; modify Chinook Model to use forecasts of cohort abundances; etc. - *In 2017 deferred to 2018 work plan; Note that specifically regarding development of MSF capability in the cohort analysis and Model calibration, the CTC-AWG has tentatively scheduled a joint meeting with the SFEC for May 13-17, Portland.*

- Scope the representativeness of coded-wire-tag indicator stocks in relation to other wild/hatchery stocks they are intended to represent - *In 2017 deferred to 2018 work plan*

Obstacles to Completing above Bi-lateral Tasks:

Time Constraints

As in previous years, the primary obstacle is the amount of time and effort required to complete the large number of tasks assigned to the CTC under the 2009 agreement and the technical complexity of those tasks. Although the formation of smaller CTC workgroups to address individual assignments creates some efficiency, the necessity of assigning CTC members to multiple workgroups creates bottlenecks.

Funding Constraints

Meeting costs and the costs of implementing a new CIS database have the potential to impact the CTC's ability to complete the ERA, PSC Chinook Model calibration, MI tasks, and annual reporting. However, the costs of implementing CIS may be partially addressed if current funding proposals to the Northern Fund and the Southern Fund are successful.

Policy Issues

The CTC has provided the Commission with a memo describing several policy issues relating to the CYER metric in response to the CTC workplan amendment of February 15, 2018 (Final_Amendment to the CTC Work Plan_021518.docx). To date the CTC has not received a response.

Outline of Other Panel / Committee Tasks or Emerging Issues:

Several AWG members currently have no administrative rights to their work laptops due to agency security measures. This hinders the AWG's ability to install software, run computer programs and access other resources that help the CTC perform its work. For the affected AWG

members it would be beneficial if the Secretariat could provide laptops or virtual desktops that have administrative rights to enable the CTC to do its work more efficiently.

Potential Issues for Commissioners:

Succession Planning and Training

2018 follows 2017 as another year with retirements of senior CTC members (Larrie LaVoy-NMFS, Marianna Alexandersdottir-NWIFC, and Robert Kope-NMFS and co-chair for the southern US states) and more retirements are expected in 2019. A transition plan to train new CTC members and transfer knowledge and expertise is needed to maintain understanding of the PST management framework for Chinook salmon and of the tools used to implement it. Severe time constraints imposed by ongoing work often interfere with this important activity. Succession planning is another task that needs to be an explicit element of the CTC workplan.

The CTC has identified some activities to improve transfer of knowledge and responsibilities to new CTC members. These would contribute to succession planning and are outlined below:

1) Improve documentation of the quantitative methods, data and host of computer programs employed by the CTC as existing documentation is incomplete or out-of-date.

-> A proposal has been submitted to the NEF and SEF by PSC staff and CTC co-chairs to support CTC programming needs and production of documentation is an element of the proposal.

2) Increase the efficiency of report production and reduce the time consumed each year by the CTC.

-> The CTC is exploring ways to streamline and automate annual reports, by building on recent CoTC experience and new server capacity made available by the PSC.

3) Complete projects currently underway that are aimed at greatly increasing efficiencies in annual work and in carrying out special investigations (i.e., CIS database, ForecastR, and the DGM).

-> Support provided by the Commission through dedicated assistance by Mark MacMillan, the new PSC database programmer hired in May 2018 for a 2-year term, has already enabled significant progress toward completion of the CIS database. Commission support for the DGM has allowed completion of computer programming and a workshop conducted by the programmer (Li Ding) in operation of the DGM. SEF funding is supporting completion of major additions to ForecastR and new server capacity made available by the PSC may result in an easily accessible web-based application.

4) Look for training opportunities that could improve the functioning of the CTC and the ability to make the most of time spent in meetings.

-> The course being offered to PSC committee chairs on running successful meetings is an example of a training opportunity that would be useful to make available to all CTC members.

5) Develop an easily accessible description of the PST Chinook management framework, its history and key elements.

-> A plan for development of such a document is not known by the CTC. Has the Commission considered the need for this project?

Development of New Tools

The model currently used by the CTC was initially developed about 30 years ago and relies on base period data that is nearly 40 years old. Chinook populations are experiencing changes in life-history parameters, stock distributions, productivity, and increased environmental variability resulting in degraded performance of the current model. New CTC members bring with them skills with new analytical tools and applications that could potentially improve the management of Chinook fisheries. The CTC will encourage the development and evaluation of alternative tools and management strategies that may offer better performance than the current management regime.

Development of a Research and Development Team

Given the changing environment and duration of the PST, the modeling approaches used by the CTC need to be continuously tested, updated and new methods (such as MSE) may need to be developed. It is the goal of the CTC to free some members to test and improve the current methods as well as to pursue development of new techniques. This research effort is necessary to ensure better understanding of Chinook populations and that management outcomes are based on the best available science and technology.

Documentation

Due to tight timelines for producing yearly analyses and reports the CTC has been remiss in the past in adequately documenting new computer programs and analyses as well as changes to existing programs and analyses. This has slowed the progress of developing new tools and techniques due to the necessity of retracing our steps to identify the current algorithms in use. The CTC will endeavor to make documentation higher priority going forward.

Chinook Model Improvement Funds

The CTC has exhausted all of the MI funds. Future MI work that cannot be accomplished during the CTC's usual course of business will need to rely on the US Chinook Abundance Based Management Implementation Funding, Northern or Southern Endowment Funds, or some new funding source. Development of 'MSF capabilities' in the Chinook Model calibration procedures is an example where availability of funds to support the extensive modifications to computer code that will be needed could 1) increase the likelihood of success, and 2) decrease the time to completion.

Potential Issues for Committee on Scientific Cooperation:

The CTC has identified two areas where assistance from the Committee on Scientific Cooperation would be beneficial:

1) The CTC has observed an increase under the 2009 PST in the magnitude of error in the preseason abundance forecasts produced by the PSC Coast Wide Chinook Model compared to the postseason estimates. Recent studies and presentations at workshops have provided evidence of various types of demographic changes in Chinook populations such as declining mean size at age, increasing mean maturation rates, and even decreasing fecundity at age in females. A review of the accumulating evidence for these types of population level changes, the geographic extent of such changes, the occurrence of discernible trends, the possible causal factors such as long-term environmental changes and their influence on output from management models would be helpful to the CTC. The ability of the Chinook Model to generate accurate abundance forecasts is tied to algorithms that generate age compositions of fish vulnerable, by size, in fisheries. It is crucial to understand whether historical methods can no longer be expected to work as they once did and whether alternative methods must be developed or new approaches to generating inputs to forecasting procedures are needed.

2) The PSC should consider establishing a coastwide, multi-species forum under the oversight of the Committee on Scientific Cooperation to share developments and advice regarding adaptation of Pacific salmon management approaches to environmental change. There is strong evidence that environmental change is occurring and accelerating to a degree such that past experience cannot be expected to serve as a reliable basis to forecast the future. Increases in uncertainty, variability and directional change are expected to alter hydrologic, precipitation, temperature and growth patterns which, in turn, are likely to affect the survival, productivity, abundance, distribution, and migration patterns of Pacific salmon. The forum should provide reporting of significant developments in the knowledge base as well as vetting of recommendations for monitoring and reporting systems, and potential adaptation strategies.

Proposed Meeting Dates and Draft Agendas:

Meeting Locations: The meeting schedule proposed for 2018-2019 includes six full bilateral CTC meetings and three additional CTC-AWG meetings. The schedule also includes a US Chinook Abundance Based Management Implementation Funding meeting. Additional CTC meetings may be required, depending on the number and scope of additional tasks assigned to the CTC.

Meeting	Dates	Location	Meeting Objectives
CTC-AWG	Nov 5-9	Seattle	Phase II BPC; CIS testing; DGM testing
US CTC-LOA	Nov 29-30	Portland	LOA project presentations, RFP
PSC Post-season (& CTC)	Jan 14-18	Vancouver	Phase II BPC; C&E, new Agreement
PSC 34th Annual (& CTC)	Feb 11-15	Portland	Phase II BPC assessment
CTC-AWG	Feb 25-Mar 1	Vancouver	ERA
CTC-AWG	Mar 11-15	Portland	Model Calibration
CTC Bilateral Meeting*	Apr 29-May 3	Seattle	C&E; Clb&ERA, evaluation of methods and models using the DGM
CTC Bilateral Meeting**	May 13-17	Portland	Address new assignments/joint SFEC/AWG meeting
CTC Bilateral Meeting	Jun 3-7	Whitehorse/Bend	C&E; Code MSF algorithms
CTC Bilateral Meeting	Sep 16-20	Bend/Nanaimo	Clb&ER report
PSC Fall Session	Oct 15-18	Spokane	CTC co-chairs attend

* Tentative (Either this meeting or the May 13-17 may not be necessary)

** Tentative; International Year of the Salmon Workshop is May 18-20, Portland, OR

Status of Technical or Annual Reports:

The 2018 C&E report is complete. The 2018 CLB&ER report will be completed in 2018 and the 2019 C&E and 2019 CLB&ER reports will be completed in 2019.

Comments:

The CTC has made a preliminary assessment of tasks listed in Appendix A of Annex IV, Chapter 3 of the recently completed 2019 PST Agreement to assess timelines and workload. The table following on the next page is the CTC's understanding of the timeline for completion of the CTC tasks identified in Appendix A.

Task #	Task	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
9	Report to PSC on AABM/ ISBM performance (Ann Mtg)	Feb	Feb	Feb	Feb	Feb	Feb	Feb	Feb	Feb	Feb
8	Abundance Indices	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	1-Apr
	ERA	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar
	Model calibration	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar	Mar
	C&E report	X	X	X	X	X	X	X	X	X	X
7	Paragraph 6 i&j (SEAK hatchery add-on)	X	X	X	X	X	X	X	X	X	X
	ERA & Model calibration Report	X	X	X	X	X	X	X	X	X	X
8	AABM performance including CPUE tiers		X	X	X	X	X	X	X	X	X
12	changes and causes of IM in AABM and ISBM (p4a&f, p5)		X	X	X	X	X	X	X	X	X
11	Provide 3 year running avg for CYER (by 2023)					X	X	X	X	X	X
1 (i)	Annual summary of CEII and CWT&R programs		X	X	X	X	X	X	X	X	X
1 (g)	Annual report on stock-specific MSF impacts		X	X	X	X	X	X	X	X	X
	BPC Phase II	X-Feb									
2	Standards for the desired level of precision and accuracy of data required to estimate IM		X-Feb								
5	Complete the Data Generation Model		X								
	Complete evaluation of alternative metrics for the evaluation of ISBM fisheries		X								
	Develop data standards for the application of CYER as metric		X								
	Description of procedures used to adjust CYERS in order to capture MSFs (by 2021) Add to Clb&ER report		X								
1 (a)	Upon request, ID concerns with consistency in Chapter	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
1 (c,d)	evaluate and review existing escapement objectives; when requested, recommend goals	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
1 (e)	recommend standards for the minimum assessment program required to effectively implement Chapter	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
1 (f)	recommend research projects, and associated costs to improve implementation of Chapter	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
12	Up to 2 review(s) of CPUE based approach, if requested	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

October 17, 2018

Memorandum

To: Northern Panel

From: PSC Commissioners

Re: Outline of key tasks required to implement reviews agreed to in Annex IV, Chapter 2 of the PST

Purpose:

The Pacific Salmon Commission provides the following instructions to the Northern Panel co-chairs and members.

The Northern Panel is instructed to develop a step by step workplan with key deliverables and timelines necessary to meet Chapter 2 commitments set out in paragraphs 10 and 12. These reviews are necessary in order to inform Commission discussions during the 2023 annual meeting about whether amendments may be needed by January, 2024.

Chapter 2 sets out three main review goals that must be completed before the 2024 annual meeting:

1. Complete the comprehensive escapement goal analysis (Canada) for Nass and Skeena sockeye (Paragraph 10, Chapter 2).
2. Harvest Pattern Analysis (US) for the pink salmon fishery in District 104 (Paragraph 12, Chapter 2).
3. Review the performance of the chapter and consider whether changes are required, including considering the recommendations of Canadian and US selected independent contractors.

In order to meet these commitments, the Commission tasks the Northern Panel and Technical Committee to conduct a planning exercise during the January 2019 post-season meeting to identify the key steps required to complete these tasks including:

A. The Panel will develop the Terms of Reference for the two analyses (items 1 and 2 above) at the January 2019 Post Season Meeting including recommendations for two independent scientific reviewers, preferable one from each originating country, that could be contracted in April 2020 to review the two analyses. The contractors would jointly review both analyses (Items 1 and 2 above).
B. The Panel will develop a submission for the 2019 Northern Endowment Fund cycle to fund the contractors in 2020 - 21.
C. Development of a work plan by each party that would ensure the required data for two reviews is compiled and analyzed prior to April 2020, so that the independent contractors can initiate their review without delay.
D. The independent contractors review will be completed by April 2021 and a report submitted to the Northern Panel for consideration and reporting to the Commission.

In addition to the processes described above to address the specific analysis review requirements of the Chapter, the Panel will also ensure it is prepared to complete a review of the implementation of Chapter 2 by January 2022, as specified in the introduction to Chapter 2.

"the Parties shall complete a review of the results of the implementation of this Chapter by the Commission post-season meeting in January 2022. The review shall identify management actions taken to support the conservation of Nass River and Skeena River sockeye, to evaluate the consistency of those actions with the obligations of the Chapter and outline, if feasible the benefit of those actions for Nass River and Skeena River sockeye"

To assist the Panel in developing a work plan to complete these assigned tasks, the following table has been prepared on key products and timelines.

Product	Accountable	Reference	Timeline
Terms of Reference for Comprehensive escapement goal analysis for Skeena and Nass sockeye (project 1)	Northern Panel	Chapter 2, P 10.	January 2019
Terms of Reference for Harvest Pattern Analysis (US) for the pink salmon fishery in District 104 (project 2)	Northern Panel	Chapter 2, P 12.	January 2019
Recommendations for independent reviewers	Northern Panel		2019 for 2020 review
Data compilation and analysis for project 1	Canada		April 2020
Data compilation and analysis for project 2	US		April 2020
Submission to Northern Endowment Fund for independent reviewers of Analyses 1 and 2	Northern Panel		2019 NEF RFP cycle for 2020 funds

Scientific review of analyses for both Project 1 and 2	Contracted reviewers		April 2020 TBC by April 2021
Report to Commission on Scientific Review	Northern Panel		Fall 2021 Executive Session
review of the results of the implementation of this Chapter	Commission		January 2022

The Commission would be prepared to provide any additional clarification on the assigned tasks at the January 2019 PSC Post season meeting.

PACIFIC SALMON COMMISSION ROSTER

Slate of Officers
November 5, 2018

OFFICE	COUNTRY	REPRESENTATIVE
Commission Chair	Can	Rebecca Reid
Commission Vice-Chair	U.S.	McCoy Oatman
Fraser River Panel Chair	Can	Jennifer Nener
Fraser River Panel Vice-Chair	U.S.	Lorraine Loomis
Northern Panel Chair	Can	Mel Kotyk
Northern Panel Vice-Chair	U.S.	Lowell Fair
Southern Panel Chair	Can	Laura Brown
Southern Panel Vice-Chair	U.S.	Laurie Peterson
Transboundary Panel Chair	Can	Steve Gotch
Transboundary Panel Vice-Chair	U.S.	Dr. John H. Clark
Stan. Comm. on F&A - Chair	Can	Bonnie Antcliffe
Stan. Comm. on F&A - Vice-Chair	U.S.	W. Ron Allen
Stan. Comm. on Scientific Cooperation - Chair	Can.	Carmel Lowe
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	Alex C. Wertheimer
Technical Committee on Data Sharing - Co-Chair	Can	Kathryn Fraser
Technical Committee on Data Sharing - Co-Chair	U.S.	George Nandor
Fraser River Panel Technical Committee - Co-Chair	Can	Jamie Scroggie
Fraser River Panel Technical Committee - Co-Chair	U.S.	Robert Conrad
Northern Boundary Technical Committee - Co-Chair	Can	Steve Cox-Rogers
Northern Boundary Technical Committee - Co-Chair	U.S.	Bo Meredith
Transboundary Technical Committee - Co-Chair	Can	Steve Smith
Transboundary Technical Committee - Co-Chair	U.S.	Edgar Jones
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	Can	Corino Salomi
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	U.S.	Garold Pryor
Joint Chinook Interface Group Co-Chair	Can.	Paul Sprout
Joint Chinook Interface Group Co-Chair	U.S.	Charles Swanton
Joint Technical Committee on Chinook - Co-Chair	Can	Gayle Brown
Joint Technical Committee on Chinook - Co-Chair	U.S.	John Carlile
Joint Technical Committee on Coho - Co-Chair	Can	John Holmes
Joint Technical Committee on Coho - Co-Chair	U.S.	Dr. Gary S. Morishima
Joint Technical Committee on Chum - Co-Chair	Can	Pieter Van Will
Joint Technical Committee on Chum - Co-Chair	U.S.	Bill Patton
Selective Fishery Evaluation Committee - Co-Chair	Can	Rob Houtman
Selective Fishery Evaluation Committee - Co-Chair	U.S.	Dr. Kristen Ryding