

**Washington Department of Fish and Wildlife
Puget Sound Treaty Indian Tribes**

Puget Sound Chinook Comprehensive Harvest Management Plan

Annual Report Covering
The 2008-2009 Fishing Season

5-11-2009

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Executive Summary

This annual report on the Puget Sound Chinook Comprehensive Harvest Management Plan summarizes results of salmon fisheries occurring between May 1, 2008 and April 30, 2009. This includes comparisons of pre-season projections with actual catch in all commercial and some recreational fisheries. 2007 Recreational catch estimates are presented for those areas where data were not available in time for the 2007-2008 report. Chinook spawning escapement estimates for 2008 are reported for all Puget Sound populations, with details on escapement surveys and estimation methods. Comparisons are also made between pre-season projections of escapement, and actual results.

Commercial Chinook catch in Puget Sound pre-terminal areas (i.e., the Strait of Juan de Fuca and Rosario / Georgia Straits) was less than projected in all areas. This was primarily a result of limited opportunity for sockeye, due to weak Fraser River sockeye returns. Commercial catches in South Puget Sound and Hood Canal were reasonably close to expectations. Catch exceeded preseason projections in the Nooksack/Samish, and Stillaguamish/Snohomish terminal areas, due to better than expected returns to hatchery facilities in those areas. Catch in the Skagit terminal area was less than predicted, due to a weaker than expected summer/fall Chinook return.

Marine and freshwater landed recreational Chinook catch in the 2007-2008 season was estimated, from a combination of Catch Record Card and creel data, to be 64,300, higher than the pre-season projection of 52,100. Creel survey-based estimates of catch in 2008-2009 mark-selective recreational fisheries in Areas 5, 7, 8.1-8.2, 9-10, and 11, Skagit River, Skykomish River, and Puyallup/Carbon rivers are included in this report. Total mortality estimates (catch + non-landed mortality) for the marine area selective fisheries with seasons completed in time for this report were generally lower than pre-season expectations.

Escapement was close to prediction for Nooksack and Skagit spring Chinook, but below expectation for the Dungeness and White River spring Chinook. Nooksack and Dungeness were both below lower thresholds. White River spring Chinook was above its upper threshold.

For summer/fall stocks, escapement was below expectation for the Skagit, Green, Elwha, and Hoko, and above expectation for the Stillaguamish, Snohomish, Puyallup, Nisqually, and Mid-Hood Canal. The Mid-Hood Canal and Hoko units were below their lower thresholds. Escapement projections were fairly accurate for Lake Washington and Skokomish Chinook.

Coded-wire tag sampling of 2007 commercial fisheries achieved sampling rate above 20% in most, but not all marine and freshwater areas. Areas with substantial catches falling below a 20% rate were areas 12C/H (Hood Canal), the Skokomish River, and area 13F (Budd Inlet). All but two recreational fisheries (Hood Canal and South Sound) were sampled at rates higher than 20%.

1 Introduction

The Co-managers' Puget Sound Chinook Harvest Management Plan mandates annual reporting of the performance of Chinook harvest management relative to the standards and guidelines of the plan (PSIT and WDFW 2004). This report fulfills that requirement by assessing the performance and effectiveness of fishery management actions adopted for the most recent management year. Included in this report are:

- Management objectives for the 2008-2009 management year (May 1, 2008 through April 30, 2009)
- Projected and actual commercial landed catch in Puget Sound, and descriptions of fisheries, for the 2008-2009 management year
- Projected and actual landed catch for 2008 Puget Sound recreational fisheries where creel surveys were conducted, and for all 2007 Puget Sound recreational fisheries
- Estimates of non-landed mortality for fisheries where data are available
- Projected and actual spawning escapement for all Puget Sound Chinook populations in 2008, with details on estimation methods and factors affecting the quality of estimates
- Summaries of biological sampling of spawning escapement, and estimates of contributions of hatchery- and natural-origin spawners where available
- 2007 Coded-wire tag sampling rates for commercial and recreational fisheries
- Pre-season ISBM annual exploitation rate indices

1.1 Management Objectives

Harvest planning objectives, including Rebuilding Exploitation Rates (RERs), Critical Exploitation Rate Ceilings (CERCs) and spawning escapement thresholds for 2008-2009 fisheries are presented below in Table 1. Derivation of the exploitation rate ceilings and management thresholds is detailed in the Harvest Management Plan.

Pre-season fishery planning for 2008-2009 fisheries projected that natural spawning escapement would fall below the critical abundance thresholds for the Nooksack early, Mid-Hood Canal, and Stillaguamish Chinook management units (MU). As a result, the 2003 Southern United States (SUS) fishing regime was modeled with 2008 forecasts of abundance, to determine 2003 fishery-based SUS exploitation rates for these MUs. The resulting 2003 fishery-based rates of 17.5% was higher than the CERC for Stillaguamish, so the CERC of 15% SUS was used. The 2003-based rate for Nooksack was 5.3% SUS, lower than the CERC of 7%, so the 2003-based rate was used. The 2003-based rate for Mid-Hood Canal was 8.7% preterminal SUS, less than the CERC of 12%, so the lower rate was used.

Table 1. 2008 Puget Sound Chinook Harvest Management Objectives.

Management Unit	RER	CERC	Upper Management Threshold	Low Abundance Threshold
Nooksack North Fork South Fork		5.1% SUS (Rate from 2003 regime run)	4,000 2,000 2,000	1,000 1,000
Skagit summer / fall Upper Skagit summer Sauk summer Lower Skagit fall	50%	15% SUS even-years; 17% SUS odd-years	14,500	4,800 2,200 400 900
Skagit spring Upper Sauk Cascade Suitttle	38%	18% SUS	2,000	576 130 170 170
Stillaguamish North Fork summer South Fork & MS fall	25%	15% SUS (CERC < rate from 2003 regime run)	900 600 300	650 500
Snohomish Skykomish Snoqualmie	21%	15% SUS	4,600 3,600 1,000	2,000 1,745 521
Lake Washington Cedar River	15% PTSUS	12% PTSUS	1,200	200
Green	15% PTSUS	12% PTSUS	5,800	1,800
White River spring	20%	15% PTSUS	1,000	200
Puyallup fall South Prairie Creek	50%	12% PTSUS	500	500
Nisqually			1,200	
Skokomish	15% PTSUS	12% PTSUS	3,650 aggregate; 1,650 natural	1,300 aggregate; 800 natural
Mid-Hood Canal	15% PTSUS	8.7% PTSUS (Rate from 2003 regime run)	750	400
Dungeness	10% SUS	6% SUS	925	500
Elwha	10% SUS	6% SUS	2,900	1,000
Western SJDF	10% SUS	6% SUS	850	500

2 Commercial Harvest

This chapter provides post-season estimates of Chinook catch for Puget Sound commercial fisheries, and also includes catch from tribal ceremonial and subsistence (C&S) fisheries, and test or research fisheries. Catch is projected pre-season through modeling of the fishery regime, which is developed and agreed upon in the Pacific Fisheries Management Council (PFMC) and North of Cape Falcon (NOF) forums, using the Fishery Regulation Assessment Model (FRAM). The regime agreed to for the 2008-2009 fishing season is described in detail in the Co-managers List of Agreed-to Fisheries, which describes all salmon fisheries for all areas of Puget Sound and most of the Washington coast (Appendix 1). The final pre-season projections of catch under this regime were made in FRAM run number 2108.

Actual catch is accounted by summarizing fish tickets, which are the sales receipts used for recording commercial, C&S, and research fishery landings. Fish ticket data are stored in a database maintained jointly by WDFW and the Puget Sound Tribes. In some fisheries, particularly non-treaty purse seine fisheries, estimates of non-landed mortality are also available, for comparison to pre-season expectations. WDFW conducts on-the-water observations of by-catch in commercial fisheries, concentrating on areas and gears where Chinook retention is not allowed. Summary results of that monitoring are included here.

Commercial troll and recreational catches in Washington coastal fisheries north of Cape Falcon were substantially less than their quotas (Table 2). Comparisons of projected and actual Puget Sound catch are provided here for two pre-terminal areas (Strait of Juan de Fuca and Georgia/Rosario Straits), and six regional terminal fisheries (Nooksack/Samish, Skagit, Stillaguamish/Snohomish, South Puget Sound, Hood Canal, and Strait of Juan de Fuca). General information is presented for the 2008-2009 fisheries, including in-season management actions that deviated from the pre-season plan, and explanations for differences in projected and actual catch.

Table 2. Summary of projected and actual Chinook catch in Washington ocean and Puget Sound fisheries in 2008.		
Fishery	Projected	Actual
Washington ocean non-treaty troll	20,000	14,024
Washington ocean recreational	20,000	15,450
Washington ocean treaty troll	37,500	21,076
Puget Sound pre-terminal net & troll total		
Strait of Juan de Fuca troll (summer)	500	820
Strait of Juan de Fuca troll (winter)	7500	1,123*
Strait of Juan de Fuca net	824	4,432
San Juan Islands net	6,026	97
Area 9 net / hook & line	714	0
Nooksack-Samish terminal net	13,474	17,948
Skagit terminal net	5,171	3,614
Stillaguamish-Snohomish net	2,198	3,713
South Puget Sound terminal net	61,395	57,992
Hood Canal terminal net	15,490	16,108
Strait Tributaries terminal net	5	4
Puget Sound marine recreational	26,957	N/A
Puget Sound freshwater recreational	34,958	N/A
*Partial season estimate through mid-February		

2.1 Strait of Juan de Fuca and Georgia / Rosario Straits

Total catch in the summer (June-September) Area 5/6/6C troll fishery was 820 Chinook, 64% higher than the pre-season expectation of 500. Winter troll fishing was ongoing at the time of preparation of this report.

Fraser sockeye fisheries were modeled pre-season to start on July 21 in the Strait of Juan de Fuca (Areas 4B/5/6C), and July 28 in the San Juans (Areas 6/7/7A). Early run timing of Fraser sockeye lead to openings occurring earlier, with the first openings occurring on July 19th in Juan de Fuca, and July 25th in the San Juans.

The 4B/5/6C fishery remained open until August 1st. A total of 32,475 sockeye were harvested, along with 4,388 Chinook. The Chinook catch was significantly higher than the pre-season modeled value of 824. Catch rates of sockeye and Chinook appeared to be high in 2008 in this fishery, although the reason is not clear.

An additional 43 Chinook were caught in Strait of Juan de Fuca coho and chum net fisheries after the Fraser Panel relinquished control of the area.

Sockeye openings in the San Juans were very limited due to decreases in estimated sockeye runsizes soon after the opening of fisheries. Catches were poor, in part due to a

large algal bloom that interfered with fishing in a large portion of area 7. The non-treaty fishery was open on July 25, and July 29-31. The treaty fishery was open from July 27-31. A total of 8,143 sockeye were captured in the treaty fishery, along with 46 Chinook.

Non-treaty purse seines are required to release all Chinook sampling, so non-treaty purse seine bycatch projections consisted of expected numbers of Chinook encounters, multiplied by an assumed mortality rate of 33%. Pre-season projections were for 958 mortalities from the purse seine fishery, plus an additional 52 Chinook captured by gillnet. The post-season estimates for mortalities in the fisheries were 25 for purse seine, and zero for gillnet. Effort for both gears was lower than expected, due to poor catch rates in the initial opening, and the algal bloom problems mentioned above.

Chum fisheries in Areas 7 and 7A opened on October 10, and remained open through November 15, although treaty and non-treaty openings did alternate days open early in the season. 21 Chinook were landed by Tribal fisheries during the fishery. No Chinook were landed by non-treaty gillnets during the chum fishery, and observer data from non-treaty purse seine boats showed only 2 Chinook in a total of 69 sets observed. This expands to a total estimate of 10 Chinook encounters, and 5 mortalities. Total estimated mortality for the non-treaty chum fishery was 5 Chinook (based on estimated 46% mortality during fall-timed fisheries), compared to a pre-season modeled value of 25.

2.2 Nooksack/Samish Terminal Area

Spring Chinook C&S

No season summary or catch data were provided for C&S fisheries targeting Nooksack spring Chinook.

Fall Chinook & other species.

Fishing for fall Chinook and other species occurred according to the pre-season schedule in Nooksack/Samish terminal areas. Total catch of fall-timed Chinook in the marine and freshwater areas was greater than expected, likely due to runsize of returning Chinook being higher than forecast.

Expected and actual Chinook catches in the Nooksack/Samish terminal area, 2008.				
Area	Timestep	Projected	Actual	Difference
7B, 7C, 7D Treaty net	Jul-Sep	5,949	10,204	4,255
	Oct-Dec	170	293	123
7B, 7C Non-treaty net	Jul-Sep	6,710	6,083	-627
	Oct-Dec	166	1	-165
Nooksack Treaty net	Early Chinook, May-Jun	64	?	?
	Fall Chinook, Jul-Sep	415	1,367	952

2.3 Skagit Bay/Skagit River Terminal Areas

The majority of Skagit terminal area impacts on Chinook were expected to occur during commercial fisheries targeted at sockeye and summer/fall timed Chinook, Ceremonial and

Subsistence fisheries targeted at summer/fall timed Chinook (850 fish divided among the three Skagit Tribes), commercial fisheries targeted at coho salmon, Skagit River test fisheries, and during a mark-selective sport fishery on spring Chinook (see Chapter 3 for discussion of sport fisheries). Chinook non-retention was required in the Non-treaty purse seine fisheries and the river sport fisheries before June 1 and after July 15. Chinook retention was permitted in Non-treaty gill net fisheries and Treaty fisheries, the test fisheries, and during the spring Chinook selective river sport fishery June 1 through July 15 (for marked fish only).

Test fisheries were conducted mostly as scheduled, except that, due to scheduling problems and high river flows, the Blake's Drift Chinook test was not conducted during weeks 21, 27, and 34, and the week 45 Blakes Drift coho test fishery was not conducted in order to conserve chum. One Bay test fishery occurred in each of Weeks 44 and 45—both conducted during the commercial fishery. A new site, Blakes Drift, which was chosen to evaluate chum abundance in-season, was scheduled for Weeks 44 and 45. Chinook catches in the test fisheries were less than expected during spring run timing (catch was 32, expected catch was 51), greater than expected during summer/fall run timing (catch was 154; expected catch was 119), and were greater than projected during the coho test fisheries, with a catch of 342, compared to 228 predicted (Table 3). Chinook catch during the sockeye test fishery was less than predicted, 33 fish, compared to the 53.2 predicted. Overall, the Chinook catch in all the test fisheries combined, 561 Chinook, was 110 Chinook higher than the preseason prediction of 451.

The Baker sockeye run was approximately 5,480, substantially lower than the preseason forecast of 25,429. Preseason, the Skagit Tribes had scheduled a comprehensive evaluation fishery plan to not only intercept harvestable sockeye but to begin to understand their run timing and river distribution (see, attached report submitted by the Skagit River Tribes summarizing the sockeye directed evaluation fishery). No fishery information was available from historical years to project Chinook catch during sockeye directed fisheries, particularly during the spring, so harvest rates during Chinook fisheries were used for the weeks with planned openings. Projected harvest rates preseason were decreased by 16% to reflect gear efficiency, based on observed differences in gear efficiency between Chinook gear and coho gear during the Weeks 34-36 test fishery, in order to capture the difference between the Chinook gear used in the historical base period and the smaller sized mesh required during the sockeye fishery in 2008. Swinomish and Sauk-Suiattle Tribes scheduled sockeye directed fisheries during weeks 19, 26–31, while the Upper Skagit Tribe scheduled sockeye directed fisheries during weeks 19–21 and 27–28. Because the expected sockeye abundance failed to materialize, the Swinomish and Sauk-Suiattle Tribes modified the last two weeks of sockeye directed fishing (Weeks 30 and 31) into a summer/fall timed Chinook directed fishery (i.e., the mesh restriction changed from sockeye gear to Chinook gear). Also, due to high water and the death of an Upper Skagit elder, Sherman Williams, the week 21 Upper Skagit fishery was delayed and conducted in week 22, with the fishing time decreased by half, from 1.1 days to 0.5 days, to avoid wild Spring Chinook. All Chinook throughout the sockeye directed and modified fisheries were retained. Preseason catch projections for the sockeye-directed fisheries, including the Weeks 30-31 Swinomish and Sauk-Suiattle sockeye fisheries that were changed into Chinook-directed fisheries, were 2,567 Spring and summer/fall timed Chinook; postseason catches for those same time periods were 1,273—a difference of 1,294 Chinook. This catch was significantly less than expected, even though Swinomish and Sauk-Suiattle switched to Chinook gear in Weeks 30 and 31; in fact, the Chinook catch during those 2 weeks, 399 Chinook, was 201 Chinook less than preseason expectations (600 Chinook), even with the switch to more efficient Chinook gear. The decrease in fishing time from week 21 to week 22 observed by the Upper Skagit Tribe explains some of the less-than-expected catch, but catches

were generally less than expected every week of this time period, even in weeks with more fishing days than planned preseason. This may have occurred partly because the overall Chinook run size was less than predicted, but it may also mean that the reduction in gillnet efficiency caused by using sockeye mesh was greater than 16%. The sockeye run was five days earlier than the last five even-year average; the 50% trap return date was July 13 rather than the expected date of July 18.

The Upper Skagit Tribe scheduled two weeks of summer/fall timed Chinook directed fishing during weeks 30 and 31. Swinomish and Sauk-Suiattle Tribes scheduled sockeye directed fisheries at that time; however, as noted above, when the sockeye abundance predicted to return preseason did not materialize, those weeks were converted to Chinook directed fisheries—large sized mesh was used. Preseason projections for the week 30 and 31 Upper Skagit Chinook fishery (866) were also higher than the observed catch of 612. Overall, the observed catch for both fisheries (sockeye and summer/fall timed Chinook) combined was 1,555 less than what was projected.

Discretion selecting a fishery open week that coincided with the more reliable week 39 ISU was recognized preseason; the week 38 ISU continues to fail capturing the inseason abundance with any reliability. The Swinomish and Sauk-Suiattle Tribes were scheduled to open the coho fishery in week 39 and Upper Skagit would open in week 40 (Table 3). Coho abundance was expected to be “Moderate” (i.e., ER ceiling of 35%). Early test fishery catches of coho were promising, however, reports that coho runs in general were early prompted a cautionary approach. The final regression-generated ISU of 38,240 coho, did show that the run was considerably smaller than predicted by preseason forecast of terminal area abundance (TAA was 66,503). Pursuant to the forecasts and updates, the Swinomish and Sauk-Suiattle Tribes’ fishery in week 39 was conducted as planned, as were the weeks 40 and 41 coho fisheries. Because the return appeared to be earlier than average, the Upper Skagit Tribe opened one week early in week 39 with 2.167 days. They stayed with the preseason schedule in week 40, but because catches were high in weeks 39 and 40 and the abundance was subsequently downgraded, they did not open in weeks 41, or 42. The Swinomish Tribe’s Chinook encounters were lower than predicted in all weeks, 17 Chinook, rather than the 73 predicted (Table 3). The Upper Skagit Tribe’s Chinook encounters were higher than predicted, 647 rather than 346, due primarily to the high catch in the earlier than planned opening in week 39. Three weeks of coho fishing by the Sauk-Suiattle fisheries were promulgated according to their preseason schedule, though no Chinook were caught where 7 were projected. Overall, the Chinook catch projection during the coho directed fishery was 419, and 664 were caught; 245 more than expected.

The preseason forecast of harvestable chum was low and the preseason schedule reflected the low abundance with one day of fishing in week 44 for Swinomish and Sauk-Suiattle Tribes and 1.167 days of fishing in week 46 for the Upper Skagit Tribe. Few Chinook mortalities were anticipated—7, and only 4 fish were observed. The ISU of chum abundance, 82,178, indicated a run that was much less than the 126,000 that was predicted, and was under the escapement goal of 117,000 fish. Weeks 44 (Swinomish and Sauk-Suiattle Tribes) and 45 (Upper Skagit Tribe) fisheries were unchanged from the preseason fishing plan and no additional fisheries were opened.

The non-treaty chum fishery in Skagit Bay (Area 8) opened as scheduled in week 45 for two days of gillnet and one day of purse seine fishing. The fishery was closed after week 45, due to a decrease in estimated runsize for chum. There were only two gillnet landings during the fishery, with no Chinook landed. There were two purse seine landings as well. No on-the-water observer data is available for those landings, so an estimate of release

mortality is not available. Total FRAM expected mortality for the non-treaty fishery was 11 Chinook.

There were 3,621 total Chinook mortalities estimated in Skagit terminal area net fisheries during the adult accounting period: 561 in test fisheries; 507 in the C&S fisheries; 1,273 in the sockeye fishery (including the Swinomish and Sauk-Suiattle sockeye fishery that was changed to a Chinook fishery); 612 in the Upper Skagit summer/fall timed Chinook fishery; 664 in the coho fishery; and 4 in the chum fishery. In comparison, catch projections during preseason planning indicated that 5,160 Chinook would be caught: 451 in test fisheries; 850 in the C&S fisheries; 2,567 during the sockeye fisheries; 866 during summer/fall timed Chinook fisheries; 419 during coho fisheries; and 7 during chum fisheries. Thus, post-season observed Chinook mortalities were 1,539 fewer than what was projected preseason. This decrease in observed mortalities from projected mortalities occurred on both spring timed and summer/fall timed Chinook. In most cases, the projected catch during commercial fisheries was lower than observed, probably due in large part to a lower than forecast return of summer/fall timed Chinook (approximately 24,000 PSF compared to the observed return of 14,885), and river conditions during the late spring. An exception to this preseason to postseason comparison was the Upper Skagit week 39 fishery, which was modified from the preseason schedule as an addition. Most of the shortfalls in projected catch occurred during the sockeye directed fishery (preseason projection 2,567 compared to postseason observed of 1,273—a difference of 1,294 Chinook). Additionally, effort during the C&S fishery was lower than expected and translated into less catch than was targeted; catch was 507 compared to the identified target of 850. Of the post-season estimated mortalities in tribal fisheries, all were landed catch, because Chinook retention was allowed during all tribal fisheries.

The 2008 spawning escapement of wild Skagit summer/fall Chinook plus the wild indicator stock groups (11,845) was lower than the Upper Escapement Threshold (14,500; Low Abundance Threshold is 4,800) for the second year in a row—though the lower escapement in 2007 was predicted, both years' return abundances apparently affected by poor ocean conditions. FRAM predicted spawning escapement of summer/fall naturals was 20,254. The 2008 observed spawning escapement of wild Skagit spring Chinook was slightly higher, 1,470, than the FRAM predicted escapement of 1,446 and higher than the Low Abundance Threshold of 576, but below the Upper Management Threshold of 2,000. With the lower terminal return and lower terminal area catch, and assuming all other catches of Skagit Chinook in other fisheries remained as modeled preseason, the total exploitation rate on Skagit summer/fall timed Chinook would have increased from the preseason estimate of 47% to approximately 58%; over the ceiling exploitation rate of 50%—difference between the preseason forecast (approximately 24,000) and observed terminal abundance (approximately 14,885) explains the exploitation rate increase. As with above, the total exploitation rate on Skagit spring timed Chinook would have decreased from the preseason estimate of 32% to approximately 28%, still below the ceiling of 38%. The decrease in terminal catch and the slightly higher than expected escapement explain the difference. These exploitation rate calculations assume, however, that catches of Skagit Chinook in all other fisheries remain the same as modeled preseason, which, with the changes in abundance of spring and summer/fall Chinook, would mean that all the exploitation rates in these fisheries would have to go up (for summer/falls) or down (for springs). A more illustrative comparison of preseason vs. postseason impact would be to compare terminal harvest rates. For springs, the preseason prediction of terminal net harvest rate was about 13%; the postseason estimated harvest rate is about 14%, or nearly the same. For summer/falls, the preseason prediction of terminal net harvest rate was about 20%; the postseason estimated harvest rate is about 21%, which is also nearly the same. Thus, despite all the changes in

Table 3. Skagit terminal area projected and actual Chinook catches for treaty fisheries, 2008.

Fishery	Preseason Projected			Post-season Observed/Estimated			Difference (Post-season minus Preseason)	
	Schedule	Landed Catch	Total Mortality	Schedule	Landed Catch	Total Mortality	Landed Catch	Total Mortality
Test:								
Chinook	1 site, wks 19-35	170	170	Same	186	186	16	16
Sockeye	3 site, wks 25-31	53.2	53.2	3 site, wks 25-31	33	33	-20	-20
Coho	3 sites, wks 34-45	228	228	Same	342	342	114	114
Chum	3 sites, wks 44-45	0	0	Same	0	0	0	0
Area 8/78C Baker Sockeye Swinomish and Sauk-Suiattle Tribes:								
Week 19	1 day	43	43	Same	47	47	4	4
Week 26	3 days	252	252	1.042 days	7	7	-245	-245
Week 27	3 days	303	303	4 days	18	18	-285	-285
Week 28	2 days	301	301	3 days	115	115	-186	-186
Week 29	2 days	355	355	1.375 days	108	108	-247	-247
Week 30	1 day	297	297	1.167 days	172	172	-125	-125
Week 31	1 day	303	303	1.167 days	227	227	-76	-76
Area 78C/78D Baker Sockeye Upper Skagit Tribe:								
Week 19	1.1 days	142	142	Same	98	98	-44	-44
Week 20	1.1 days	142	142	Same	219	219	77	77
Week 21	1.1 days	142	142	None	0	0	-142	-142
Week 22	None	0	0	0.5 days	54	54	54	54
Week 27	2.167 days	174	174	Same	15	15	-159	-159
Week 28	2.167 days	113	113	3.25 days	193	193	80	80
Area 8/78C/78D Chinook C&S Swinomish, Sauk-Suiattle, Upper Skagit Tribes:								
Summer/Fall Chinook Timing	Variable to target	850	850	Variable to target	507	507	-343	-343
Area 78C Summer/Fall Chinook Swinomish and Sauk-Suiattle Tribes:								
Week 30	None	0	0	See 8/78C Baker Sockeye (above)			0	0
Week 31	None	0	0				0	0
Areas 78C/78D Summer/Fall Chinook Upper Skagit Tribe:								
Week 30	1.167 days	209	209	Same	298	298	89	89
Week 31	1.167 days	657	657	Same	314	314	-343	-343
Areas 8/78C Coho Swinomish/Sauk-Suiattle Tribes:								
Week 39	2 days/2 days	37	37	Same	15	15	-22	-22
Week 40	2 days/2 days	28	28	Same	0	0	-28	-28
Week 41	2 days/2 days	8	8	Same	2	2	-6	-6
Areas 78C/78D Coho Upper Skagit Tribe:								
Week 39	None	0	0	2 days	456	456	456	456
Week 40	2.167 days	171	171	Same	191	191	20	20
Week 41	2.167 days	113	113	None	0	0	-113	-113
Week 42	2.167 days	62	62	None	0	0	-62	-62
Areas 8/78C Chum Swinomish/Sauk-Suiattle Tribes:								
Week 44	1 day	2	2	1 day/1 day	0	0	-2	-2
Area 78C/78D Chum Upper Skagit Tribe:								
Week 45	1.167 days	5	5	1.333 days	4	4	-1	-1
Total Skagit Terminal Area		5160	5160		3621	3621	-1539	-1539

abundance and fisheries, it appears that overall terminal area net impacts, for both spring and summer/fall Chinook, were about the same as what was projected preseason.

2.4 Stillaguamish/Snohomish Terminal Area

Expected Chinook catches in all Stillaguamish/Snohomish terminal area fisheries in 2008 were small, and actual catches were below expectations, with the exception of the treaty Chinook fishery in Area 8D, where actual catches almost doubled the predicted number (Table 4). This discrepancy in Area 8D could be explained by a combination of factors including a conservative preseason forecast, higher than expected marine survival, and

reduced interceptions. Until the run is fully reconstructed (sport catches in 8D are not available yet), no definite conclusions can be reached.

Five Chinook were caught in Area 8A as part of the ceremonial fishery, and only 2 fish were caught incidentally during the treaty coho and treaty chum fisheries in area 8A.

Non-treaty fisheries in area 8A opened during the coho management period, with a 2 boat limited-participation fishery in weeks 41 and 42 (Only one boat actually participated). The full participation purse seine fishery opened in week 43, the beginning of chum management. Gillnet fisheries opened in week 42. Chum fisheries closed after week 46, earlier than scheduled, due to a decrease in assessment of chum run size. Six Chinook were landed by gillnets during the non-treaty fishery. WDFW staff observed 30 purse seine sets during the fishery, with no Chinook observed. Total estimated mortality for the non-treaty fishery was 6 Chinook, compared to a pre-season modeled value of 5.

Non-treaty fisheries in area 8D opened as scheduled in week 39. The fishery proceeded as planned, with the exception of two additional gillnet days added, one in week 47, and one in week 48. No Chinook were landed during the gillnet fishery. There was only one purse seine landing during the season, but no observer data was available for that landing, so no estimate of Chinook mortality is available. Total FRAM modeled mortality for the non-treaty fishery was 3 Chinook.

Table 4. Projected (FRAM 2108) and actual Chinook net harvest in the Stillaguamish - Snohomish terminal area non-treaty commercial and treaty fisheries in 2008.				
Area		Projected ^{1/}	Actual ^{2/}	Difference
8A Chinook	Trty	100	5	-95
	Ntrty	--	--	--
8A Coho	Trty	87	1	-86
	Test	2	0	-2
	Ntrty	0	0	0
8A Chum	Trty	5	1	-4
	Test	0	0	0
	Ntrty	5	6	1
8D Chinook	Trty	1,965	3,703	1,738
	Ntrty	N/A	-	-
8D Coho	Trty	5	4	-1
	Ntrty	2	0	-2
8D Chum	Trty	0	0	0
	Ntrty	1	0	-1
Stillaguamish R. Chinook, Coho, & Chum	Treaty	26	0	-26
Total		2,198	3,713	1535
^{1/} FRAM 2108.				
^{2/} TFT database, March 2, 2009.				

2.5 South Puget Sound Terminal Areas

2.5.1 Marine areas 10 & 11

Chinook catches in test and treaty commercial net fisheries occurring in marine areas 10 & 11 were much lower than projected in 2008. Projected and actual catches in Treaty fisheries are presented in Table 5. A total catch of 718 Chinook was modeled for all Area 10 & 11 commercial and test fisheries. Actual catch was much lower, at 53 Chinook. The majority of the modeled impacts were actually for the Area 9 treaty commercial chum fishery, which did not occur in 2009. The lack of sockeye opportunity in Area 10 also contributed to the lower than modeled impact.

The non-treaty chum fishery opened as scheduled in week 43. The fishery remained open as scheduled through week 46, then closed in week 47. There were 15 Chinook landed in the gillnet fishery. Total Chinook mortality in the purse seine fishery was estimated at 92, bringing the total estimated mortality for the non-treaty fishery to 107, compared to a pre-season expectation of 360.

Table 5. Projected and actual catches in 2008 South Puget Sound treaty net fisheries.				
Area	Management Period	Projected	Actual	Difference
Area 9	Chinook (C&S)	700	0	-700
	Chum	Included in Area 10		
Area 10/11	Coho (test)	90	4	-86
	Chum (test)	102	29	-73
	Sockeye			
	Coho Chum	526	20	-506
Area 10E	Chinook	3,169	1,477	-1,692
Area 10A	Chinook (test)	450	434	100
	Chinook (C&SF)		116	
	Chinook	2,809	1,026	-1,770
	Coho Chum		13 0	
Duwamish River	Chinook	7,017	8,358	1,499
	Coho		158	
	Chum		0	
Lake Washington/ Ship Canal	Sockeye (C&S)		54	
	Coho	3,170	608	-2,508
Lake Sammamish	Chinook	5,000	3,489	1,511
Puyallup River	Spring Chinook (C&S)	815	509	-306
	Fall Chinook (C&S)		218	
	Fall Chinook (test)	283	0	-65
	Coho	1,149	2,461	1,312
Areas 13D-K	Chinook/Coho/Chum	5,708	10,402	4,694
Area 13A	Chinook/Coho/Chum	6,956	8,907	1,951
Areas 13C/Chambers	Chinook	7,705	6,711	-994
Nisqually River	Chinook/coho	16,086	13,493	-2,593

2.5.2 Lake Washington

The 2008 Lake Washington sockeye return was far below the forecasted value and did not provide for directed commercial or recreational fisheries. The only sockeye fisheries opened were for ceremonial & subsistence purposes. The Suquamish Tribe caught a total of 26 incidental Chinook in C&S sockeye openings in Area 10F below the Ballard Locks. The Muckleshoot Tribe caught an additional 28 incidental Chinook in C&S sockeye fisheries above the locks.

The coho return to Lake Washington was large enough to allow treaty commercial openings in the Ship Canal and in Lake Washington. The Suquamish Tribe caught 14 incidental chinook during their coho fisheries in the marine portion of the Ship Canal, while the Muckleshoot Tribe caught 594 chinook during their coho-directed fisheries within

freshwater areas of the Ship Canal. 3,489 Chinook were also taken during Muckleshoot Chinook-directed fisheries in Lake Samammish (10D).

2.5.3 Elliott Bay/Duwamish River

Each year, the Muckleshoot Tribe conducts a Chinook test fishery in Elliott Bay, fishing 5 sites one night a week for three weeks prior to any commercial openings. The test catch from 2008 yielded a total of 434 Chinook.

In 2008, the Muckleshoot and Suquamish Tribes conducted two 12-hour commercial openings in Elliott Bay and the Duwamish River, on August 6th, and 13th. The Suquamish Tribe also executed a 24-hour Chinook-directed C&S fishery for Elliott Bay on Aug. 12th. Additional openings for coho occurred later in the season. Total Chinook catch for the season (includes all salmon fisheries) was 1,589 in Elliott Bay (10A) and 8,516 in the Duwamish River (80B). In total, Chinook catch was about 171 lower than the pre-season projection.

2.5.4 Area 10E (Sinclair Inlet)

The Chinook returning to Area 10E are the result of Chinook supplementation programs operating out of several Suquamish Tribal hatchery stations in Area 10E. The Sinclair Inlet terminal fishery was conducted on the same schedule as the agreed upon pre-season fishing plan. Effort included between 3 and 5 gill-netters and between 5 and 8 set-netters. Overall tribal Chinook catch was 1,477, less than half of the pre-season estimate of 3,169.

Production at the Suquamish Tribe's Gorst rearing facility suffered significant losses of available out-migrating smolts after several consecutive large-scale die offs occurred in several retention ponds, due to suspected vandalism. Consequently, a dip in the number of returning adult Chinook to Sinclair Inlet was anticipated, but the total actual escapement to 10E waters was on the lower side of what was expected.

Intensive sampling of the commercial fishery and in-stream spawning surveys have consistently illustrated an estimated mark rate for Chinook returning to Sinclair Inlet of over 75% and 83%, respectively. A recent 10-year analyses have demonstrated that 87% of the cwt-recovered fish from Sinclair Inlet waters originated from Suquamish tribal hatchery facilities. Coded-wire tag data recovered from commercial fisheries during the 2008 season verified that 85% of the tagged fish originated from Suquamish tribal fish rearing facilities

Likewise, stream surveys have demonstrated high mark rates with 97% of the tagged fish being associated with Suquamish hatchery production. Due to the very poor escapement (and additional logistical reasons), no other freshwater systems within Area 10E waters were surveyed for Chinook in 2008. Gorst Creek, which sees the largest return in Sinclair Inlet saw only 115 Chinook return to the fish trap. One other dead Chinook was observed in another small 10E stream located to the south of Gorst Creek during an early chum survey.

Since no actual foot surveys were conducted in-stream and the fish trap is located 0.8 miles upstream from the mouth of the creek, the Tribe believes a total return of 200 to be a conservative escapement estimate for East Kitsap spawning grounds in 2008. Only 2 cwt's were recovered from in-stream sampling of Chinook in 2008 – both were collected from the Gorst fish trap and both fish originated from the Gorst Creek Rearing Ponds.

2.5.5 Puyallup River

Spring Chinook

Muckleshoot's ceremonial & subsistence (C&S) fishery during May and June in the Puyallup and White rivers caught a total a 344 Chinook. Starting in early September a coho C&S fishery was open in both rivers where an additional 55 Chinook were incidentally caught.

The Puyallup Tribe of Indians (PTOI) conducted a Spring Chinook directed C&S fishery from week 23-25 with a total catch of 174 Chinook. PTOI fished 3 to 6 hours a 2-3 days for the 3 weeks. The Fisheries staff fished for the 1st Fish Ceremony and a funeral yielding a Chinook catch of 28 in on June 5-6 (week 23). During week 24, from June 10-13th the fishery was open to Puyallup Tribal Elders 50 years and older. Each day the fishery was open from 9 am to 3 pm with a total catch of 83. Week 25 PTOI opened the fishery up to all of the membership. The fishery was open from 8 am to 4 pm June 19-20th, yielding a Chinook catch of 63. No fisheries were scheduled after June 20th due to the low numbers of Spring Chinook returning to the Buckley Trap.

PTOI fisheries staff sampled 119 of the 174 of the catch during this time with 6 of the 119 being fall Chinook, identified by adipose clips. This expands to estimates of 9 fall Chinook, and 165 spring Chinook in the PTOI C&S fishery.

C&S fisheries in the river were closed early, due to smaller than expected catches observed during the fishery. FRAM run 2108 modeled an expected total catch of 940 spring Chinook in terminal net fisheries, compared to an actual catch of 509. Terminal runsize was also below expectation (7,381 preseason forecast of terminal runsize, compared to 3,643 post-season terminal runsize, based on escapement and terminal catch).

Fall Chinook

PTOI did not conduct the scheduled test fishery from weeks 30-33 due to the low forecast of fall Chinook. PTOI did conduct C&S fisheries for the Canoe Journey, Pow-Wow, and 2 funerals that totaled 218 of the 283 modeled for the Test/C&S catch in FRAM run 2108. 100% of the fish were sampled during these fisheries conducted by the Fisheries staff.

PTOI did not have commercial openings during the Chinook management period in 2008. The first commercial opening was during the Coho management period on Sunday August 31st. This fishery was a 12 hour opening, during which PTOI caught 1,752 of the season total of 2,461 Chinook. The fishery proceeded as planned from week 36 through week 42, with number of days open by week as follows: 0.5,2,2,3,4,4,4. Model run 2108 predicted a total catch of 1,149 Chinook, while the actual catch was 2,461. It appears that extreme terminal abundance and net harvest rates were higher than predicted preseason. High market prices for salmon likely lead to increased effort and harvest rates on the river. The fish ticket per opening has increased from 24 tickets in 2005 to 56 tickets in 2008 during our 1st 12 hour openings. Full analysis of post-season rates will not be available until sport catch estimates are available.

2.5.6 Marine area 13 & sub areas (Deep South Sound)

Deep South Sound Medicine Creek Tribal In-Common Areas

Tribal fisheries in Chambers Bay (Area 13C) and Carr Inlet (Area 13A) were conducted on the same schedule agreed-to in the pre-season plan. A total catch of 7,705 Chinook was modeled pre-season for Chambers Bay treaty fisheries, whereas actual catch there was 6,711. In Carr Inlet, a total catch of 6,925 Chinook was modeled pre-season, while actual catch totaled 8,907. Fishing effort varies annually in deep South Sound fisheries, with catches highly dependent on abundance of returning fish, market conditions, and availability of other fishing opportunities. The lack of a directed Chinook fishery in the Puyallup River again in 2008 prompted Puyallup fishermen to direct more of their fishing effort into areas 13A and 13C, and higher prices for Chinook also led to heightened effort by Squaxin Island tribal fishermen in 13A.

Deep South Sound Areas 13D-K

FRAM Run 2108 projected a total treaty Chinook harvest for Deep South Sound Areas 13D-K of 5,708. Actual harvest for 2008 was 10,402 Chinook. This catch total is based on Squaxin Island Tribe Fish Tickets. Actual harvest was 4,694 Chinook above the preseason projection for this fishery.

The higher catch 2008 than projected can be attributed to two main factors:

- 2008 Deschutes River Fall Hatchery Chinook returns were higher than projected. The '08 preseason forecast for Deschutes Fall Chinook was 13,372 (Yearling + Fingerling). Final Tumwater Falls Hatchery Chinook rack count was 10,777 adults, compared to the hatchery escapement need of 3,000. This leads to an extreme terminal runsize of over 21,000, well above pre-season forecast.
- High market price for Fall Chinook led to an increase in effort. Prices of \$4 per/lbs increased the number of fishermen participating in the fishery.

Nearly all Chinook returning to Area 13D-K are of Deschutes hatchery origin, meaning that catches higher than expectation are not a conservation concern, as the Deschutes artificial propagation program is not considered to be part of the ESU.

2.5.7 Nisqually River

The treaty Chinook fishery in the Nisqually River was open, three days per week for management weeks 29 – 37 (July 13 - September 10), then closed for weeks 38, 39, and 40 to reduce total harvest rate and assure meeting the escapement goal. This schedule deviated from preseason planning by starting one week later than planned, week 28. The fishery was re-opened October 5, during the Coho management period, and remained open 3 days per week through November 22nd. The total Chinook catch of 13,493 was low compared to totals from the last 4 years, and compared to the preseason projection of 16,086.

The pre-season forecast was for 26,350 hatchery and 3,877 wild Chinook.

Sample rate in the commercial fishery ranged weekly from a low of 29% to a high of 76% averaging 47% for the entire season.

In-season updates of Chinook terminal abundance, were calculated several times in-season, based on catch rates observed in the river fishery (Table 6). The update models are based on catch rates at past effort levels, and there was some evidence of increased effort in the fishery due to good market conditions for Chinook, so the update numbers were viewed with some caution.

Date	Runsize
19-Aug	47,076
21-Aug	43,343
23-Aug	40,145
30-Aug	38,436

Total natural escapement to the basin was 3,398, and the hatchery rack return was 4,285 adults and 2,989 jacks. Based on the in-river net harvest of 13,493, extreme terminal runsize is 21,176, with a harvest rate of 63.7%, compared to the pre-season projection of 55%.

2.6 Hood Canal

The preseason forecasted terminal abundance for 2008 was 36,493 Chinook compared to the actual terminal abundance of 32,774 Chinook; these values each exclude recreational catch since actual recreational catch estimates are not yet available. There were no significant deviations from the preseason plan for fisheries affecting Chinook salmon in Hood Canal. Overall, total Chinook catch in Hood Canal terminal fisheries during 2008, excluding recreational catches which are not yet available, was close to that predicted. Higher catches and exploitation rates than expected in Area 12C were offset by lower catches and exploitation rates than expected in Area 12H, due to fish build up not occurring during scheduled openers at 12H. Chinook catches and exploitation rates in the Skokomish River were close to projected levels (Table 7).

Area	Target Species	Catch		Exploitation Rate	
		Projected	Actual	Projected	Actual
Hood Canal Marine Net (12-12D,9A) (T)	Chinook, Coho, Chum	1,282	4,430	0.03513	0.13517
Hood Canal Marine Net (12-12B,9A) (NT)	Chum, Coho	16*	17*	0.00069	0.00006
12H Net (T)	Chinook, Chum	9,597	6,510	0.26298	0.19863
Skokomish River (82G/J) (T)	Chinook, Coho, Chum	4,611	5,168	0.12635	0.15769
	Total	15,490	16,108		

*Non-treaty numbers include non-landed mortality in fisheries where Chinook retention is not allowed. These non-retention mortalities are not included in the calculation of exploitation rate here.

The non-treaty skiff gillnet fishery in Area 9A (Port Gamble Bay) opened as scheduled in week 35, and remained open as scheduled through week 44. Chinook caught in gillnets in this fishery must be released by cutting the ensnaring mesh, so no Chinook were landed, and no mortality estimate is available. Total effort in this fishery is limited (20 landings for the entire season). Pre-season modeled Chinook mortality for the non-treaty 9A fishery was 6.

The non-treaty skiff gillnet coho fishery in Area 12A opened as scheduled in week 36, and closed after week 38 to protect summer chum. Chinook caught in gillnets in this fishery must be released by cutting the ensnaring mesh, so no Chinook were landed, and no mortality estimate is available. Total effort in this fishery is limited (11 landings over three days open for the season). Pre-season modeled Chinook mortality for the non-treaty 9A fishery was 1.

The non-treaty chum fishery in areas 12 and 12B opened in week 43, and remained open as planned through week 47. The scheduled fishery in area 12C was not opened in 2008. There were no Chinook landed during the non-treaty gillnet fishery. Three Chinook were observed in 145 observed purse seine sets. This expands to an estimate of 38 Chinook encounters, and 17 mortalities in the purse seine fishery, compared to a pre-season modeled mortality of 9 fish.

2.7 Strait of Juan de Fuca

Chinook catch in terminal and extreme-terminal fisheries in the Strait region were very low, in accordance with pre-season projections (Table 8).

The non-treaty skiff gillnet coho fishery in Area 6D (Dungeness Bay) opened as scheduled in week 39, and closed after week 42, one week earlier than planned. Chinook caught in gillnets in this fishery must be released by cutting the ensnaring mesh, so no Chinook were landed, and no mortality estimate is available. Total effort in this fishery is limited (24 landings for the entire season). Pre-season modeled Chinook mortality for the non-treaty 6D fishery was 1.

Terminal Area	Projected	Actual
Area 6D & Dungeness River Treaty	0	0
Area 6D Non-Treaty	1	0
Elwha River Treaty (C&S)	4	4
Hoko River Treaty	0	0

2.8 Non-treaty commercial monitoring data

Because non-treaty vessels are required to release non-target species in many fisheries, WDFW conducts on-water monitoring to provide data on encounters of non-target species. In 2008, efforts were concentrated on openings in Areas 7/7A, 8A, 10/11, and 12/12B. Summaries of observer data for 2007 are presented in Table 9. Expanded estimates of encounters, where available, were presented above in the summaries for individual fisheries.

Table 9. Summary of commercial fishery observation data for 2008 Puget Sound non-treaty net fisheries.

Area	Gear	# of sets observed	Total salmon observed				
			Chinook	Coho	Sockeye	Pink	Chum
10	PS	34	6	0	0	0	2,396
11	PS	55	7	3	0	0	2,692
12	PS	81	1	27	0	0	6,390
12B	PS	64	2	25	0	0	4,212
7	PS	59	4	29	2,830	13	2,032
7A	PS	42	7	80	342	0	1,422
8A	PS	30	0	35	0	0	379
10	GN	6	0	0	0	0	67
7B	GN	11	78	2	0	0	0

2.9 Commercial Catch 1997-2006

Table 10 and Table 11 show recent commercial catches, including ceremonial and subsistence and take home catches reported on fish tickets. The total commercial harvest for treaty and non-treaty fleets has ranged from 58,000 to 125,000 over the 10 years included. The total of 125,787 in 2007 represents the largest total catch for the years presented.

AREA	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Troll 4B May-Sept	1,299	272	663	587	7,044	1,459	87	7,103	4,534	2,620	1,100
Non-PFMC Troll	829	338	540	347	1,974	1,783	436	20,750	5,343	999	4,345
NET CATCH											
4B/5/6/6C	492	264	589	795	931	1,074	908	593	147	839	44
7/7A	18,476	3,302	3	476	848	1,658	4,283	4,056	3,617	4,721	2,561
6D	0	1	0	0	0	0	1	0	2	3	1
Elwha R.	7	2	17	0	0	0	0	0	0	0	0
7B,C,D	9,054	9,593	22,796	17,769	29,357	21,354	9,213	5,563	6,176	11,809	9,658
Nooksack R.	1,749	405	2,248	1,035	802	795	572	450	592	582	1,405
8	229	0	35	0	21	1	33	5	155	4	0
Skagit R.	850	303	328	118	56	11	54	35	1,974	579	1,112
8A/8D	8,626	7,227	15,438	7,639	5,347	5,244	8,794	5,924	7,750	5,804	6,107
Stillaguamish R.	0	5	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	2	0	28	0
10	53	569	69	64	56	0	4	40	21	172	81
10A	473	1,858	646	2,887	2,215	1,306	726	3,763	638	1,745	1,169
Green R.	167	1,670	2,152	4,088	6,911	9,841	2,876	4,736	1,184	5,596	10,339
10C,D,F,G	58	4	0	11	2,721	96	393	825	828	1,866	6,925
10E	1,932	2,958	5,261	3,764	6,441	4,870	8,192	3,356	3,718	5,111	4,097
11	0	0	0	0	0	0	0	0	0	6	4
11A	109	107	25	0	148	0	0	0	0	19	0
Puyallup R.	2,700	1,581	1,884	1,671	6,404	4,386	1,939	3,252	2,109	2,188	2,931
White R.	0	9	0	0	83	0	2	6	0	0	50
13	5	413	153	4,458	120	152	65	3	739	14	5
Nisqually R./McAll.	7,675	8,405	16,395	6,800	14,491	11,693	14,564	13,843	11,066	21,568	23,049
13A	75	259	3,836	2,430	1,245	1,013	2,166	1,045	2,953	5,863	8,733
13C	1,148	4,860	559	1,408	336	689	919	3,786	3,913	4,432	11,596
Chambers Creek	67	0	0	0	0	0	0	0	0	0	0
13D-K	339	373	1,358	2,387	650	31	1,146	882	3,331	3,849	8,355
12, 12B	1	0	0	38	8	0	0	1	0	13	0
9A, 12A	11	66	99	0	363	4	0	22	68	224	132
12C,D,H	6	1,059	6,522	9,147	7,426	13,573	17,770	11,071	16,636	16,130	7,035
Skokomish R.	0	1	978	254	2,178	1,358	2,753	4,331	3,063	3,418	8,978
Total	56,430	45,904	82,594	65,904	94,213	87,725	81,120	95,343	78,294	100,072	119,862

Area	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
7/7A	11,117	496	0	61	17	61	66	25	162	145	0	0
7B/7C	10,690	11,910	9,243	11,369	18,002	17,564	8,406	5,008	6,064	13,151	6781	6084
8	14	0	0	0	8	0	0	0	0	0	0	0
8A/8D	0	0	4	0	0	0	0	1	0	0	1	6
10/11	70	12	247	30	2	0	93	8	7	2	1	15
9A	0	10	15	8	0	3	2	0	0	0	0	0
12	3	0	3	0	0	0	0	0	3	0	2	0
	21,894	12,428	9,512	11,468	18,029	17,628	8,567	5,042	6,236	13,298	6,785	6,105

3 Recreational Harvest

This chapter summarizes expected recreational catch in Puget Sound marine waters and freshwater tributaries for the 2008-2009 management year, and presents catch estimates available from creel studies for that period. Due to the cycle of recovery and analysis of Catch Record Cards (CRCs) used by recreational anglers, complete catch estimates for all areas are not yet available. Since complete catch estimates were not available for all areas in the annual report covering the previous management cycle, projected and actual recreational catches for the 2007-2008 management year are also included here.

3.1 2007-2008 Recreational Catch

Total Recreational Chinook harvest in 2007-2008, estimated from a combination of Catch Record Cards (CRC) and creel estimates where available, was around 64,300, compared to a preseason projection of 52,100. Catches were higher than projected in several terminal and extreme terminal areas with large concentrations of hatchery Chinook (Samish, Puyallup, and Nisqually rivers, Areas 12 and 13). Catch in Area 7 was also considerably higher than expectation. Projected and actual catches by area are presented in Table 12.

Table 12. Projected (FRAM 3907) and actual Chinook catches in Puget Sound Recreational Fisheries during the 2007-2008 season.

Area/Fishery	Projected	Actual
Area 5-6		
MSF (July-August)	4,000	4,096
Other	1,090	960
Strait Tributaries	0	
Area 7	2,656	5,251
MSF (February)		1,327
Other		3,924
Nooksack/Samish FW	4,368	6,261
Area 8-1 & 8-2		
MSF	1,842	1,566
Skagit River		
Spring MSF	394	724
Other	20	86
Area 8D SAF	1,407	547
Stillaguamish River	6	31
Snohomish River		
Skyokomish MSF	215	663
Other	12	55
Area 9		
Summer MSF	5,300	4,938
Winter MSF	1,871	1,408
Area 10		
Area 10 Summer MSF	1,700	1,577
Area 10 other	737	2,521
Area 11		
Area 11 MSF	8,531	10,641
Area 11 other	1,013	1,574
Area 10E SAF	850	1,843
Lake Washington/Sammamish	169	675
Area 10A SAF	3,500	2,095
Green River	600	382
Puyallup River		
Carbon R MSF	793	1,287
Puyallup R MSF	576	1,283
Area 13		
Area 13 Summer MSF	1,744	2,851
Area 13 other	849	120
Nisqually/McAllister	1,057	3,080
Area 12	1,657	2,748
Skokomish River	5,182	5,029

3.2 2008-2009 Recreational Catch

3.2.1 Expected catch

Projected Chinook catches in 2007-2008 recreational fisheries are listed in Table 13. Total projected catch was 49,020. The recreational fishing regime included mark selective fisheries (MSF) for portions of the year in marine areas 5, 6, 8-1, 8-2, 7, 9, 10, and 13, and in the Skagit, Skykomish, Puyallup, Carbon and Nisqually rivers. For those fisheries where creel survey estimates of harvest are available, those estimates are listed as actual catches in Table 13. Creel surveys were conducted on freshwater fisheries in the Carbon, Skagit, and Skykomish Rivers. In addition, intense sampling efforts were applied to marine area selective fisheries throughout the year, meaning that creel estimates available for the majority of those fisheries. Brief summaries of results of the sampling programs are included below. In-depth analyses of sampling and statistical methods are available in a series of reports produced by WDFW. The latest final reports are available online at: http://wdfw.wa.gov/fish/salmon/suggested_reading.htm. Many of the results presented here are from draft reports, which will be available online in the future.

Table 13. Projected (FRAM 2108) and actual (where available) Chinook catches in Puget Sound Recreational Fisheries during the 2008-2009 season.		
Area/Fishery	Projected	Actual
Area 5-6		
MSF (July-August)	4000	2,819
Other	730	
Strait Tributaries	0	
Area 7	2536	
Nooksack/Samish FW	4306	
Area 8-1 & 8-2		
MSF	1449	
Skagit River		
Spring MSF	491	508
Other		
Area 8D SAF	1033	
Stillaguamish River	0	
Snohomish River		
Skyokomish MSF	211	572
Other	0	
Area 9		
Summer MSF	4000	4,048
Other	2308	
Area 10		
Area 10 Summer MSF	3000	1,034
Area 10 other	924	
Area 11		
Area 11 MSF	7178	7,400
Area 11 other	906	
Area 10E SAF	950	
Lake Sammamish	153	
Area 10A SAF	4050	
Green River	700	
Puyallup River		
Carbon R MSF	1099	
Puyallup R MSF	358	
Area 13		
Area 13 Summer MSF	733	
Area 13 other	353	
Nisqually/McAllister	1084	
Area 12	891	
Skokomish River	3500	

3.2.2 Marine areas 5 & 6 summer MSF

2008 was the 6th year of a pilot mark-selective fishery in marine areas 5 & 6. The 2008 season differed from previous years in structure. The season was managed for a set quota from 2003-2007, while in 2008 it was open for a set season, July 1 through August 9.

During the summers of 2003 through 2008, sampling programs were implemented in Areas 5 and 6 in order to collect the data necessary to estimate daily estimates of total catch (landed and released) and total effort which could be expanded to weekly, monthly, and ultimately season-total values. Results for previous years are available in WDFW (2008a). The study designs used in the two areas during 2008, differed from those previously employed (2003-2007). First, a scaled-back version of the former dockside sample design was used to provide coarse in-season estimates of catch and effort for Area 5; to ensure that long-term fishery sampling targets were not compromised, this effort was accompanied by a high level of opportunistic Baseline Sampling. The Area 6 design consisted of Baseline angler/catch sampling only and therefore did not have an on-the-water (i.e., boat surveys, test fishing) sampling component¹. Finally, a pilot study was conducted in both areas to evaluate the feasibility of using angler-supplied voluntary trip reports (VTRs) as a means for collecting reliable information about the size/mark-status composition of Chinook encountered in MSFs.

For 2008, an estimated 2,819 Chinook were harvested in Area 5 (all adipose marked), compared to a pre-season expectation of 3,360 (3,300 marked, 60 unmarked) (WDFW, 2009a). Total encounters in the Area 5 fishery (marked & unmarked, legal and sub-legal) were estimated at 5,496, compared to a pre-season forecast of 12,037. The primary reason for the difference was lower than expected encounters of unmarked (legal and sublegal) fish, and of sublegal marked fish. Due to the alternate sample design for area 6, comparisons will not be possible until Catch Record Card data can be combined with sampling data to generate total harvest and encounter estimates.

3.2.3 Marine area 7 winter MSF

Starting February 1, 2009, the Puget WDFW began monitoring the second year of a Chinook season under mark-selective harvest regulations in Marine Area 7. The fishery remains open through April 15, so final results will not be available until after that time. Preliminary results (through March 1) are presented in Table 14 below (from WDFW 2009b). Marked, legal encounters have exceeded preseason expectations, while unmarked encounters remain below expectation.

Table 14. Predicted and observed marked and unmarked Chinook encounters due to the Area 7 selective Chinook fishery occurring from Feb 1 – April 15, 2009.*

Encounters Category		Total Encounters (Landed + Released)	Legal	Sublegal	Landed Only
FRAM Chinook Encounters	Unmark.	1803	548	1255	44
	Mark.	3304	839	2465	789
	Total	5107	1387	3720	833
	% Mark.	64.7	60.5	66.3	94.7
Estimated Chinook Encounters	Unmark.	426	355	71	4
	Mark.	1277	1064	213	926
	Total	1703	1419	284	930
	% Mark.	75	75	75	99.6

* Predictions are based on pre-season FRAM model run 2108; observations are DRAFT estimates of Chinook encounters from creel surveys (inclusive of derby and charter activity) through March 1, 2009 and are apportioned using test-fishery data.

3.2.4 Marine areas 8-1 & 8-2 winter MSF

On January 1, 2009 the Puget Sound Sampling Program began intensively monitoring the fourth year of a selective Chinook fishery in Areas 8-1 and 8-2. The fishery remains open until April 30, so final results are not yet available. Draft estimates of encounters and catch through March 1 are presented below in Table 15 (from WDFW 2009b).

Table 15. Predicted and observed marked and unmarked Chinook encounters due to the Areas 81 and 82 selective Chinook fishery occurring from January 1 – April 30, 2009.*

Encounters Category		Total Encounters (Landed + Released)	Legal	Sublegal	Landed Only
FRAM Chinook Encounters	Unmark.	5,688	1,393	4,295	98
	Mark.	8,796	1,501	7,295	1,351
	Total	14,484	2,894	11,590	1,449
	% Mark.	61	52	63	93
Estimated Chinook Encounters	Unmark.	1,186	57	1,129	12
	Mark.	2,878	825	2,053	718
	Total	4,064	882	3,180	730
	% Mark.	71	94	65	98

* Predictions are based on pre-season FRAM model run 2108; Observations are DRAFT estimates of Chinook encounters from creel surveys through March 1, 2009 and are apportioned using test-fishery data.

3.2.5 Marine areas 9 & 10 summer MSF

In 2008, a recreational mark-selective fishery occurred for the second consecutive year in marine areas 9 and 10, beginning on July 16th, with a combined quota of 7,000 Chinook for both areas. The fishery was open until August 15th, in both areas, with a one day closure on August 11 in Area 9 only. Total harvest was estimated to be 5,076 marked and 6 unmarked Chinook for both areas (WDFW 2008b). The total estimate of Chinook encounters for both areas was 15,536, compared to the FRAM modeled number of 31,348. Encounters were lower than expected for marked, unmarked, legal, and sub-legal groups, with marked sub-legals having the largest difference from expectations.

3.2.6 Marine area 9 winter MSF

Starting November 1, 2008, the Puget Sound Sampling Program began monitoring the second year of a Chinook season under mark-selective harvest regulations in Marine Area 9. The fishery was open from November 1-30, 2008, and reopened from February 1 through April 15, 2009. Because the fishery remains open, final results are not yet available. Draft estimates of impacts through March 1 are presented below, in Table 16 (from WDFW 2009b).

Table 16. Predicted and observed marked and unmarked Chinook encounters due to the Area 9 selective Chinook fishery occurring from November 1-30, 2008 and from Feb 1 – April 15, 2009.*					
Encounters	Category	Total Encounters (Landed + Released)	Legal	Sublegal	Landed Only
FRAM Chinook Encounters	Unmark.	4,224	1,129	3,095	68
	Mark.	11,763	2,383	9,380	2,240
	Total	15,987	3,512	12,475	2,308
	% Mark.	74	68	75	97
Estimated Chinook Encounters	Unmark.	3,114	218	2,895	7
	Mark.	3,799	1,016	2,783	885
	Total	6,913	1,234	5,679	892
	% Mark.	55	82	49	99

* Predictions are based on pre-season FRAM model run 2108; Observations are DRAFT estimates of Chinook encounters from creel surveys through March 1, 2009 and are apportioned using test-fishery data.

3.2.7 Marine area 10 winter MSF

For the period from December 1, 2008 through January 31, 2009, WDFW intensively monitored the second year of a selective Chinook fishery in Area 10 during the winter season. Draft results from that monitoring are presented below in Table 17 (from WDFW 2009b). Actual encounters were well below modeled encounters in all categories. Final results will be available at a later date.

Table 17. Predicted and draft observed marked and unmarked Chinook encounters for the Area 10 winter selective fishery from December 1, 2008 through January 31, 2009.					
Encounters	Category	Total Encounters (Landed + Released)	Legal	Sublegal	Landed Only
FRAM Chinook Encounters	Unmark.	2,244	484	1,760	29
	Mark.	4,928	953	3,975	895
	Total	7,172	1,437	5,735	924
	% Mark.	69	66	69	97
Estimated Chinook Encounters	Unmark.	500	35	465	0
	Mark.	1,290	290	1,001	252
	Total	1,791	325	1,466	252
	% Mark.	72	89	68	100

3.2.8 Area 11 summer MSF

A recreational mark-selective fishery was implemented for the second time in Area 11 in 2008, running from June 1 through September 30. A total of 7,400 Chinook were harvested during the fishery (7,377 marked, 23 of undetermined mark status) (WDFW 2008c). This was very close to the FRAM modeled harvest of 7,178 Chinook (6,999 marked, 179 unmarked). Pre-season and actual legal encounters were very close (10,431 in FRAM, 10,382 actual). Total number of sublegal encounters was much smaller than modeled (18,535 in FRAM, 2,321 actual).

3.2.9 Puyallup River Creel

The Washington Department of Fish and Wildlife (WDFW) conducted a fifth year of creel surveys during the recreational mark selective Chinook fishery on the Puyallup River in 2008. This survey was designed to develop a general sense of salmon catch and angler effort patterns during the fishery, and provide information on mark rates of Chinook and coho.

The mark rate of Chinook encountered during the 2008 survey was 44 percent. This low mark rate can be attributed to the large release and subsequent return of unmarked hatchery Chinook from the Clark's Creek hatchery in 2006 (2005 brood). CPUE during the first week of the fishery was the highest of any of the 5 years with data available, but quickly dropped to levels below the average of past years. A total of 13 Chinook were sampled during the fishery, with 100% being adipose clipped, and none having a CWT.

3.2.10 Carbon River Creel

The Washington Department of Fish and Wildlife (WDFW) conducted a sixth year of creel surveys during the recreational mark selective Chinook fishery on the Carbon River in 2008. This survey was designed to estimate angler CPUE, percent of Chinook that were marked (adipose fin clipped), and to monitor angler effort. The survey was less intense than previous years, when the goal was to estimate total catch and encounters in the fishery.

Of the 74 reported Chinook caught and released, 45 percent were marked, 40 percent were not marked, and mark status was unknown (anglers did not remember the mark status) for the remaining 15%. Biological data (scales for age analysis, fork length, identification for sex, and check for CWT) were collected from 105 Chinook. The mark rate of sampled Chinook was 100 percent during the fishery. No CWT's were recovered. CPUE during the first week of the fishery was the highest of any of the 6 years with data available, but quickly dropped to levels below the average of past years.

3.2.11 Skagit Spring

In 2008, a mark-selective fishery targeting hatchery spring Chinook occurred on the upper Skagit River from the Highway 530 Bridge in Rockport to the mouth of the Cascade River. Adipose clipped spring Chinook were open for retention from June 1 to July 15. An additional area from the mouth of the Cascade River to the Rockport-Cascade Road on the Cascade River, first opened in 2006, was again open in an attempt to increase harvest opportunities.

WDFW staff conducted creel surveys in the sections of the Skagit and Cascade Rivers open to the selective Chinook fishery. Data were collected from 2,200 anglers interviewed during the fishery, accounting for 9,444 hours of effort. Anglers reported catching a total of 243 marked Chinook. Seven of the marked fish were reported released. The total estimated harvest for the 2008 season was 508 marked spring Chinook. An estimated 9 marked and 359 unmarked fish were released during the fishery. After adjusting for mark rate of hatchery fish and release mortality rates, total mortality was estimated at 518 hatchery and 27 wild Chinook. The pre-season mortality forecast estimate was 466 hatchery and 25 wild spring Chinook.

3.2.12 Skykomish River Creel

A mark-selective Chinook fishery took place in a limited portion of the Skykomish river from June 1 through July 31. Results of the 2008 Skykomish River creel survey are presented in Table 18. Total effort was estimated to be around 36,000 hours, compared to an average of 28,000 from 2003-2007. The estimate of total Chinook harvested was 572, down slightly from the high of 637 in 2007, but larger than the 203-2006 average of 130. It appears that catch rates improved in 2007, and remained higher than previous years in 2008. Pre-season expectation was for total mortality of 240, including 212 marked-Chinook retained, and release mortality of 38. Actual catch exceeded expectation, while release mortality of 23 fish (based on 10% mortality rate on 234 fish released) was lower than predicted.

Table 18. Summary results of Skykomish River Chinook MSF creel survey, 2008.							
EFFORT SUMMARY:	JUNE		JULY		COMBINED		
	BOAT	SHORE	BOAT	SHORE	BOAT	SHORE	TOTAL
NO. ANGLER INTERVIEWS	701	136	428	71	1,129	207	1,336
TOTAL HOURS OF FISHING	3,991	427	2,618	294	6,609	721	7,329
EST. TOTAL EFFORT (HOURS)	13,636	5,305	12,632	4,608	26,268	9,913	36,181
EST. AVERAGE TRIP LENGTH (HOURS)	5.6	3.1	5.9	4.0	NA	NA	NA
EST. NUMBER OF ANGLER TRIPS	2,241	1,708	2,126	1,142	4,367	2,850	7,217
HARVEST & CATCH SUMMARY:	JUNE		JULY		COMBINED		
	BOAT	SHORE	BOAT	SHORE	BOAT	SHORE	TOTAL
NUMBER OF FISH CHECKED							
Chinook	42	6	39	2	81	8	89
Chinook-Jack	0	0	1	0	1	0	1
NUMBER OF FISH REPORTED RELEASED							
Chinook	13	0	10	1	23	1	24
Chinook-Jack	2	0	17	0	19	0	19
ESTIMATED HARVEST							
Chinook	150	173	212	37	362	210	572
Chinook-Jack	0	0	5	0	5	0	5
ESTIMATED NUMBER RELEASED							
Chinook	113	0	103	18	216	18	234
Chinook-Jack	17	0	175	0	192	0	192

3.3 1997-2007 Recreational Catch

Landed catches of Chinook by recreational fisheries by area from 1996 through 2007 are presented in Table 19. Recreational Chinook catches in 2007 were the largest in recent years in both marine and freshwater areas. The increase in marine areas is likely related to increased recreational opportunity associated with mark-selective fisheries. The increase in freshwater areas is associated with larger catches in freshwater fisheries in South Sound, targeting hatchery-origin fish returning to the Puyallup and Nisqually systems.

Marine Area	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
5	9,921	836	282	346	3,202	2,510	3,893	3,865	1,955	4,350	5,028
6	2,317	1,323	1,096	999	1,129	439	1,159	1,135	470	954	1,898
7	9,155	3,069	2,747	3,435	6,613	5,512	3,319	2,265	2,099	3,325	4,959
8.1	1,225	508	590	615	901	560	505	406	493	427	808
8.2	5,894	1,029	1,151	1,796	4,314	2,274	3,248	2,057	1,411	1,732	1,333
9	10,641	3,118	4,076	3,189	5,640	2,574	1,513	1,591	1,710	1,141	7,754
10	8,920	3,486	1,569	2,957	5,165	4,262	4,888	4,282	2,732	4,370	8,495
11	9,602	9,154	12,822	7,619	14,423	9,814	9,513	8,318	7,477	9,143	14,165
12	592	347	1,346	1,084	446	1,450	1,423	2,017	2,556	1,881	2,815
13	2,158	3,244	3,060	1,639	2,589	1,505	1,475	1,185	1,855	2,189	3,102
Marine total	60,425	26,114	28,739	23,679	44,422	30,900	30,936	27,121	22,758	29,512	50,357
Freshwater Region											
Straits	18	0	6	0	0	75	47	19	17	0	15
Nook-Sam-Whatcom	2,929	6,532	2,896	1,871	5,083	6,170	3,433	1,061	4,069	6,645	6,380
Skagit	96	40	48	19	6	70	265	35	141	648	885
Stilly-Sno	21	41	35	7	54	367	339	177	217	233	717
South Sound	1,857	2,488	4,180	2,493	3,530	3,774	3,577	2,529	3,340	4,282	6,550
Hood Canal	8	10	993	600	3,170	3,113	3,237	1,964	4,460	5,313	5,235
Freshwater total	4,929	9,111	8,158	4,990	11,843	13,569	10,898	5,785	12,244	17,121	19,782
Marine + FW total	65,354	35,225	36,897	28,669	56,265	44,469	41,834	32,906	35,002	46,633	70,139

4 Spawning escapement

This section presents natural Chinook escapement estimates for 2008, and compares them to projections from FRAM 1208. Table 20 summarizes upper and lower management thresholds, predicted escapement, and actual 2008 escapement for Puget Sound Chinook management units.

In general, pre-season projections are made for natural escapement (the number of natural- and hatchery-origin Chinook spawning naturally), however there are important differences in some populations. Depending on the methods used in forecasting abundance, natural-origin adults that are used for hatchery broodstock may be included in the projection of natural escapement. FRAM projects natural-origin escapement for the Nooksack, Stillaguamish, Skagit Spring, and Snohomish populations, so hatchery-origin fish must be subtracted from total escapement, and the number of natural-origin fish used for broodstock added, to obtain an estimate comparable to the FRAM projections. Separating hatchery-origin from natural-origin fish may require analyses of scale, otolith, or CWT data obtained from carcass sampling, which are not completed for all 2008 escapement. The comparisons in Table 20 represent the best currently available data for comparing predicted and actual escapements.

Escapement was very close to predictions for Nooksack and Skagit spring Chinook, but much lower than expected for Dungeness and White River spring Chinook. Nooksack and Dungeness were both below the lower thresholds. Skagit and White River were above their lower thresholds, and White River was above its upper threshold as well.

For summer/fall stocks, escapement was much lower than predicted for Skagit, Green, Elwha, and Hoko. Predictions were fairly accurate for Lake Washington and Skokomish. Escapement exceeded expectations for the Stillaguamish, Snohomish, Puyallup, Nisqually, and Mid-Hood Canal. Note that the Stillaguamish and Snohomish comparisons are not quite correct, as NOR/HOR compositions is not yet available. The Mid-Hood Canal and Hoko units were below their lower thresholds.

There are few obvious explanations for deviations from expectations around Puget Sound, aside from normal fluctuations in survival rates. Details for each escapement estimate, including information on biological sampling of carcasses on the spawning grounds, and hatchery/natural-origin composition estimates, are presented in the following sections.

Table 20. Management thresholds, predicted 2008 escapement, and actual 2008 escapement for Puget Sound Chinook management units.				
Management Unit	Upper Management Threshold	Lower Management Threshold	Predicted escapement	Actual escapement
Nooksack	4,000		375 ¹	380 ¹
North Fork	2,000	1,000		307 ¹
South Fork	2,000	1,000		83 ²
Skagit summer / fall	14,500	4,800	20,253	11,664
Upper Skagit summer		2,200		8,441
Sauk summer		400		538
Lower Skagit fall		900		2,685
Skagit spring	2,000	576	1446 ¹	1,470
Upper Sauk		130		983
Cascade		170		284
Suiattle		170		203
Stillaguamish	900	650	355 ¹	1,117 ³
North Fork summer	600	500		839 ¹
South Fork & MS fall	300			278 ³
Snohomish	4,600	2,000	4,401 ¹	
Skykomish	3,600	1,745		5,745 ³
Snoqualmie	1,000	521		2,560 ³
Lake Washington				
Cedar River	1,200	200	678	758
North Lake Tributaries				183 ⁴
Green	5,800	1,800	9,695	5,971
White River spring	1,000	200	5,585	2,765
Puyallup fall		500	1,153	1,967
South Prairie Creek	500			
Nisqually	1,200		1,928	3,398
Skokomish	3,650 aggregate; 1,650 natural	1,300 aggregate; 800 natural	1,207	1,134
Mid-Hood Canal	750	400	57	273
Dungeness	925	500	1,033	229
Elwha	2,900	1,000	2,222	1,153
Western SJDF	850	500	925	483
1. Natural-origin only 2. Represents SF native NOR's only 3. Natural and hatchery origin 4. Additional 237 in Bear-Cottage non-index areas, and 2,739 in Issaquah Creek				

4.1 Escapement surveys and estimation methods

4.2 North Puget Sound

4.2.1 Nooksack River

North/Middle Fork early Chinook

The methodology for calculating the Middle Fork escapement separately from the North Fork began in 2005. In past years this estimate had been derived by multiplying total accounted-for volitional recruit carcasses from both the North and Middle Forks and their tributaries by the 3.48 expansion factor (The expansion factor was derived by dividing cumulative redd count escapement numbers by the total carcass counts in five separate years when viewing conditions were unusually good and using the average).

Due to lower water flows and higher river bank exposure, we believe that the spawning surveys on the Middle Fork accounted for the majority of carcasses in that section of the river. In order to avoid over-inflating the Chinook estimate, it was decided to calculate the Middle Fork estimates by using fish per redd (using a standard 2.5 fish per redd expansion factor) and to apply the 3.48 expansion factor to estimate the North Fork carcass counts only. The resulting combined number of the previous methods is the NF/MF Nooksack escapement estimate.

Using the above method, the 2008 North/Middle Fork Nooksack spring Chinook estimated total escapement (includes natural and hatchery-origin spawners) to the spawning grounds is 1,266 Chinook. Total Kendall Creek Hatchery recruitment was 1,194 spring Chinook.

For this escapement calculation, the inventoried carcass data (from WDFW, LNR and NNR agencies) for both forks were separated into two major categories:

1) Sampled volitional recruits (VR) to spawning grounds. Chinook were deemed to be volitional recruits (off-station released fish, stray station release fish and out-of-basin strays) to the spawning grounds if they were found not have operculum punches when evaluated in the field by visual inspection. Fish with operculum punches were surplus hatchery returns that were placed in the river as carcasses for nutrient enhancement, and do not represent natural escapement, although no surplus carcasses with operculum punches were put back in the river in 2008.

2) Un-sampled (carcasses whose origin was not determined). Chinook were placed in the un-sampled category (status undetermined) if the carcasses could not be reached for inspection or were too far deteriorated to make verification.

The use of (.028%) for pre-sampled carcass occurrence in surveys was derived from WDFW surveys. It was used to deduct potential pre-sampled from the un-sampled category.

In the North Fork, a total of 282 volitional recruit carcasses were counted, and 232 of those were sampled. Based on otolith reads, 27.3% of the escapement was of natural origin. In the Middle Fork, a total of 85 volitional recruit carcasses were counted, and 81 of those sampled. Based on otolith reads, 13.6% of the natural escapement was estimated to be of natural origin. For the North and Middle forks combined, and an estimated 307 Chinook of the 1,266 total escapement (24.2%) were natural-origin recruits.

South Fork early Chinook

The results presented here for South Fork Nooksack escapement are preliminary, and subject to further review and revision by the comanagers.

The method currently used for generating Chinook escapement estimates to the South Fork Nooksack was initially developed in 2001. It was later modified in 2007 based on the results of DNA tissue analysis. It attempts to estimate the number of returning native South Fork Spring Chinook as well as the numbers of fish known to be straying from other sources, primarily the North Fork Spring Chinook program as well as natural and hatchery origin Chinook from the later-timed "Fall" stock.

The calculation uses redd count up to October 1 to estimate the total number of Chinook escaping to the South Fork during the "early" spawning period.

Redd count to Oct. 1 X 2.5 fish per redd = Total Early Chinook Spawner Estimate

A total of 177 Chinook redds were documented in the South Fork Nooksack and its tributaries up to October 1, 2008. Using the expansion factor of 2.5 fish per redd generates a Chinook spawner escapement of 443 for the early period.

177 redds to Oct. 1 X 2.5 fish per redd = 443 Early Chinook Spawners

Additionally 5 Chinook recovered from the South Fork were determined not to have spawned. These fish should be added to the escapement estimate when calculating fish not taken in fisheries. However these individuals should not be included in any estimates of subsequent production (i.e. estimating productivity).

Information from Chinook carcasses recovered up to October 7 is used to estimate the composition of the spawning population relative to Chinook stock and hatchery versus natural origin. 115 Chinook carcasses from the South Fork were successfully sampled for at least one of the possible marks indicating fish of hatchery origin.

A hatchery mark was detected on 35 of the sampled carcasses, which represents 30.4% of the recovered carcasses. Applying this percentage to the overall escapement of 443 generates an estimate of 135 hatchery Chinook straying in to the South Fork to spawn. 30 of the 35 marked carcasses were determined to have come from hatchery releases of North Fork Chinook program. These account for 25.2% of the recovered carcasses. Using this ratio and the total Chinook estimate results in an estimate of 112 spawners from the North Fork program in the South Fork.

70.2% of the Chinook carcasses had no detectable hatchery mark. Based on the assumptions of the methodology we estimate that the same proportion of the spawning population was made up of natural origin recruits (NORs). Applying this ratio to the total Chinook estimate results in 311 NORs to the South Fork Nooksack in 2008.

DNA analysis resulted in stock assignments for 62 of the 80 unmarked spawned Chinook carcasses recovered in 2008. By applying the assignment ratios to the remaining unanalyzed, unmarked carcasses we can generate stock assignments for all the recovered natural origin carcasses. These ratios were generated based on the presence of hatchery marks and the results of DNA tissue analysis. By applying the ratios generated from the recovered carcasses to the total early spawner estimate we are able to generate stock specific escapement estimates. Table 21 presents the estimated

proportions and escapement from each stock group, hatchery and natural origin to the South Fork based on the methodology.

Table 21. Stock group ratios and escapement estimates for Chinook in the South Fork Nooksack, 2009.		
Origin	Percent of total	Estimated escapement
North Fork Hatchery	24.3%	109
Other Hatchery	5.1%	23
North Fork NORs	23.7%	106
Fall Stock NORs	28.3%	127
Native South Fork	18.5%	83
Total	100.00%	448

4.2.2 Skagit River

Conditions were mostly favorable for redd surveys throughout the Chinook spawning season. Because of the good conditions, 2008 marked one of the most complete sets of survey data for all Chinook stocks from the last few years. Spring Chinook surveys were disrupted one week due to an unusual August rainstorm, but otherwise were complete. Summer Chinook survey conditions were excellent in the Skagit above the mouth of the Sauk River where the three Seattle City Light hydroelectric projects maintain regular flows. Surveys of lower Skagit fall Chinook and lower Sauk summer Chinook were unusually complete. Historically, surveying the two populations was hindered by glacial melt and turbidity from the Suiattle and White Chuck Rivers draining Glacier Peak.

The shifted spawn timing pattern of the upper Sauk Springs and upper Skagit Summers continued in 2008; these two populations spawned two weeks later than historic timing over the last several years. Spawn timing of Chinook populations where hydrologic conditions are dominated by glacial melt continue to be near normally timed.

Suiattle spring Chinook

Access to Suiattle River tributaries continued to be a problem in 2008 due to washed out roads and hiking trails. The areas surveyed, which represent the total known spawning distribution of the population, include most clear water tributaries in the basin with enough flow to allow Chinook access. The survey interval goal for all indices was every 7 to 10 days. Historically surveyed streams include Big, Tenas, Straight, Circle, Buck, Lime, Downey, Sulphur, and Milk Creeks. Circle Creek suffered severe damage from a flood in 1990 and had still not recovered. Historical Chinook use of Circle Creek was infrequent due to its small size and regular low flows. Because the creek was still inaccessible to fish in 2008, it was not surveyed, and it was assumed no redds were constructed. Chinook spawning has not regularly been observed in the turbid mainstem Suiattle River, however Chinook have been observed spawning at tributary junctions. Redds constructed in the mixing zone between a tributary and the mainstem were included in the total for the tributary.

Tributaries were surveyed for spring Chinook redds between August 5 and September 17. The target survey interval goal was generally maintained throughout the survey period with the exception of the week of Sunday August 17, 2008. An unusual August rainstorm

elevated flows and prevented access to most of the tributaries until flows subsided the following week.

The current escapement estimation method has been in use since 1994. A cumulative redd count, conducted by foot of all redds built throughout the entire known spawning area was expanded by 2.5 fish per redd to calculate the escapement estimate.

A total of 81 redds were identified by surveyors. The 2008 Suiattle River spring Chinook escapement estimate was 203 fish.

The escapement estimate for 2008 was based on nearly complete coverage of the basin. The population continued to suffer from the devastating effects of the estimated 130-year flood event that occurred in October of 2003. The flood rerouted many of the tributaries, deposited large amounts of substrate at the mouths of tributaries, and caused huge movements of The Suiattle River mainstem across the valley floor.

Upper Cascade spring Chinook

Survey coverage in 2008 was nearly complete and generally maintained the prescribed survey interval of 10 to 14 days. The areas surveyed represented the known spawning distribution of the population. Surveyed areas were the mainstem Cascade River from river mile (RM) 8.1 to 18.6, the lower reaches of the North and South Fork Cascade Rivers, and two tributaries, Marble Creek and Kindy Creek. The indices were surveyed from August 14 through September 19.

The only survey interval disruption occurred the week of Sunday, August 17. A storm with unusually high amounts of rain for August passed through and elevated the mainstem to an un-surveyable level.

The Cascade spring Chinook escapement estimate methodology was implemented in 1992. A cumulative redd count, conducted by foot or pontoon boat of all redds built throughout the entire known spawning area was expanded by 2.5 fish per redd to calculate escapement.

The total number of estimated redds in 2008 were 113.5. Redds were expanded for the period the mainstem Cascade River was not surveyed due to high flows. Redd data from the next survey was used for the expansion. All but one redd from 2008 surveys were located in the mainstem Cascade River; the single redd outside of the mainstem was located in Marble Creek. The escapement estimate of upper Cascade River spring Chinook was 284 fish.

The Cascade River spring population continued to suffer reduced survival due to factors outlined in the Suiattle River spring Chinook population, although the October 2003 flood was not as severe for this system.

Upper Sauk spring Chinook

Low flows throughout most of the 2008 season enabled complete survey coverage of all indices. The run timing was again late, with peak redd counts occurring mid to late September. Historically, upper Sauk spring Chinook spawned early August through late September, with peak spawning occurring early September. However, in recent years few redds were been built before September 1, and spawning occurred into October. Peak spawning in 2008 occurred during the third week of September in most reaches of the

Sauk River with the exception of the South Fork Sauk River. Peak spawning in the South Fork Sauk River occurred near the end of the first week of September.

The area surveyed represented the known spawning distribution of the upper Sauk River spring Chinook population. Mainstem Sauk River surveys were between RM 31.0 (which is 0.9 miles below the mouth of the White Chuck River) and RM 39.7, at the confluence of the North Fork Sauk and South Fork Sauk Rivers. The North Fork Sauk River was surveyed from the mouth upstream to the falls, and the South Fork Sauk River was surveyed from the mouth to about RM 3.5. Surveys began August 28 and concluded October 6.

The escapement estimate was calculated by combining a fish per redd expansion with an area under the curve (AUC) estimate. The fish per redd expansion was used upstream of RM 31.9. The cumulative redd count (from foot or pontoon boat surveys) was multiplied by 2.5 fish per redd. The AUC method was used with redd data collected from helicopter flights between RM 31.0 and 31.9, a section too dangerous to walk or float. An assumed 21 day redd life (Schuller, 1974) was used in the AUC calculation. The Sauk River spring Chinook escapement estimate methodology has remained unchanged since 1994.

A total of 379 redds were observed from RM 31.9 upstream and including the forks. The AUC method estimated 14 redds were constructed between RM 31.0 and RM 31.9. The 2008 upper Sauk River spring Chinook escapement estimate was 983 fish.

Upper Skagit summer Chinook

Survey conditions throughout the season were generally good due to low flow conditions. Redds were surveyed in the mainstem Skagit River by helicopter at approximately two week intervals. Tributaries were surveyed by foot or pontoon raft ever 10 to 14 days. Upper Skagit summer Chinook exhibited spawn timing of approximately two weeks later than historical in the mainstem. Delayed spawning of this stock was observed the last several years. The delayed spawning trend has not been observed in tributaries.

The areas surveyed represented nearly the entire known spawning distribution of the Skagit summer Chinook population. Limited irregular spawning in some tributaries not normally surveyed has been documented historically, and therefore may have been missed by survey personnel. Mainstem Skagit River surveys were from the mouth of the Sauk River (RM 67.2) to Gorge powerhouse (RM 94.3). Tributaries surveyed were the Cascade River (RM 0.0 to 4.2) and Illabot, Diobsud, Bacon, Falls and Goodell creeks. Surveys in the Skagit River began September 10 and concluded October 29. Tributary surveys began September 3 and concluded October 24.

Skagit summer Chinook escapement estimation methodologies have remained unchanged since at least 1974. The mainstem was flown by helicopter four times in 2008 and redd data was calculated using the area under the curve method. Beginning and end points for the curve were estimated using field observations of redd construction and historical data. The peak redd count survey flight (as determined from other reaches) was discontinued at Bacon Creek (RM 82.9) due to low clouds and heavy rain. Redd data from the next survey was used to expand for the reach not surveyed, and also the reach immediately downstream. The count on the lower reach was questioned due to decreasing visibility throughout the section. The AUC method used an assumed redd life of 21 days (Schuller, 1974) to calculate total redds. Cumulative redds from all tributary counts were added to the AUC redd estimate and multiplied by 2.5 fish per redd to calculate the escapement estimate.

An estimated 3,150 Skagit summer Chinook redds were in the mainstem Skagit River in 2008. Surveyors located 67 redds in the Cascade River and 159 redds in the other Skagit River tributaries. The Skagit River summer Chinook escapement estimate was 8,441 fish.

For the third consecutive year counts of redds constructed prior to September 1 in the tributaries were not included in the total estimate. Carcass recoveries have shown these fish are hatchery strays from the Marblemount hatchery spring Chinook program, so they were enumerated separately.

Lower Sauk summer Chinook

Unusual Sauk River clarity allowed for a nearly complete set of helicopter redd counts during the Sauk summer Chinook spawning period. Normally, visibility is greatly hampered by the Suiattle River and somewhat by the White Chuck River. No fish spawned in the surveyed tributary in 2008.

The October 2003 flood dramatically changed the spawning habitat in the Sauk River. The distribution of spawning and the path of the river have continued to change since the flood. The same change in spawning distribution has been observed with other species, most noticeably steelhead. Prior to the 2003 season few redds were typically observed above the Darrington Bridge at RM 21.0 (spawning ground database). Since the flood, an increased amount of gravel has deposited in the reach above RM 21.0. In recent years as much as 26.0% of the Sauk summer Chinook population has utilized the spawning habitat above the Darrington Bridge. The mainstem Sauk River downstream of the Suiattle River has experienced a loss of usable suitable gravel due to the increased deposition of fine sediment. Fewer redds are now built on an annual basis than historical counts in the reach from the mouth of the Sauk River up to the mouth of the Suiattle River at RM 13.0.

The area surveyed represented the total known spawning distribution of the population. Surveys were from the mouth of the Sauk River to RM 31.0. The reach from RM 31.0 to 31.9 (mouth of the White Chuck) was high gradient with limited spawning habitat and was assumed to separate the spring and summer stock distributions. Dan's Creek was the only tributary surveyed. Surveys began September 10 and concluded October 29.

The Sauk River summer Chinook escapement estimation method has remained consistent since at least 1974. The mainstem was flown by helicopter four times at approximately two week intervals, and the redd data was calculated using the AUC method. Water clarity on one reach of one flight was out due to the White Chuck River. An expansion was used to estimate redds in the section not surveyed using redd data from the following survey. The curve beginning and end points were estimated using field observations of redd construction and historical data. The area under the curve was divided by the assumed redd life of 21 days (Schuller 1974) to calculate total redds. Any redds counted by the foot surveyed tributary were added to the AUC redds and multiplied by 2.5 fish per redd to calculate escapement. No tributary redds were located during 2008 surveys. Dan's Creek was again too low to allow Chinook passage, a trend that has persisted the last few seasons.

The 2008 Sauk summer Chinook escapement estimate was 538 fish. An estimated 215 redds were constructed in the Lower Sauk River.

Lower Skagit fall Chinook

Survey conditions were good throughout most of the 2008 Skagit fall Chinook survey season. The Sauk River was unusually clear, and the weather was mostly favorable for foot and helicopter surveys.

The areas surveyed represented nearly the entire known spawning distribution of the population. Some limited tributary spawning areas may have been missed. The mainstem was surveyed by helicopter approximately every two weeks from RM 24.5 (Highway 9 Bridge) to the mouth of the Sauk River (RM 67.2). Two sets of tributaries were surveyed. The tributaries Finney, Presentin, O'Toole, Grandy, Day, Alder, Jones, and Hansen Creeks were surveyed every 7 to 10 days. The tributaries Jackman, and East Fork Nookachamps Creeks were occasionally surveyed. All tributaries were surveyed by foot. Surveys began September 29 and concluded October 30.

The mainstem was flown by helicopter four times and the redd data was calculated using the AUC method. Beginning and end points for the curve were estimated using field observations of redd construction and historical data. The area under the curve was divided by an assumed redd life of 21 days (Schuller 1974) to calculate total redds. The tributary cumulative redd count was added to the AUC derived redds and multiplied by 2.5 fish per redd to calculate escapement.

Surveyors identified 347 fall Chinook redds in Skagit River tributaries. An estimated 727 redds were in the mainstem Skagit River. The 2008 Skagit River fall Chinook escapement estimate was 2,685 fish

Skagit Hatchery Spring Chinook Stray Rate Study

A study began in 2006 to determine the number of hatchery spring Chinook spawning in natural spawning areas prior to the onset of native summer Chinook spawning. The study was conducted by Washington Department of Fish and Wildlife and the Skagit River System Cooperative (SRSC), the management body for the Swinomish and Sauk-Suiattle tribes of Indians. Prior to 2005, no attempt had been made to enumerate the number of strays that did not enter the hatchery.

Weekly redd surveys were conducted by foot or pontoon boat in the Lower Cascade River (RM 0.0 – 3.4) and Boulder Creek, a tributary to the Cascade River where hatchery strays were known to spawn. Encountered carcasses were sampled for coded wire tags to ascertain origin. Tributaries to the upper Skagit River, Bacon, Illabot and Diobsud Creeks were also surveyed by foot to determine whether strays were spawning in those streams.

Carcass recoveries revealed redds built before September 1 in all the sites surveyed could be reasonably expected to be redds from hatchery spring Chinook strays. Surveys began July 31. A cumulative total of 188 redds were observed in the Cascade River, and 43 redds were observed in the tributaries prior to September 1. Using an expansion of 2.5 fish per redd, it was estimated 578 Marblemount Hatchery spring Chinook strays spawned in natural spawning areas.

4.2.3 Stillaguamish River

Escapement estimates for the North Fork summer population were expansions of cumulative counts of new redds from foot and raft surveys of the North Fork and its tributaries. Ground counts of the North Fork and its tributaries resulted in an estimated 557 redds, which, expanded by 2.5, gives the escapement estimate of 1,393. There were also four aerial surveys conducted in 2008. Comparison of ground and aerial surveys

indicate that ground surveys tended to account for around 10% more redds across the season. An additional 129 Chinook were sampled for broodstock, all of which were sampled for mark, tag, and biological data.

Fall Chinook escapement to the South Fork in 2008 was estimated using expansion of redd counts from foot and raft surveys. 104 redds were observed in the South Fork and tributaries in 2008, which expand to an estimated escapement of 260. Tributaries surveyed include Pilchuck, Jim and Canyon creeks. Seven redds were counted below the confluence of the North and South forks during a two aerial surveys, expanding to an additional 18 Chinook, bringing the South Fork/mainstem total to 278, and basin total estimate to 1,671.

A total of 260 Chinook carcasses were sampled by WDFW or Stillaguamish Tribe staff for mark, tag, and biological data on the spawning grounds in 2008. 218 of those carcasses were from the mainstem NF Stillaguamish, bringing the total number of samples from the NF to 374 (including 129 broodstock). Using these data, NF spawners were estimated to be 60.2% NOR, meaning that 839 of the 1,393 natural spawners were of natural origin. No estimate is available for SF Stillaguamish hatchery and natural origin proportions.

4.2.4 Snohomish River

Skykomish

Spawning occurs throughout the mainstem Skykomish and Snohomish rivers, Wallace River, Bridal Vail Creek, Sultan River, Elwell Creek and in the North and South forks of the Skykomish, including fish passed above Sunset Falls. Many of the spawners in the Wallace River originate from the hatchery, located at the mouth of May Creek.

Escapement estimates are from aerial redd-count surveys of the Skykomish mainstem and the South Fork to Sunset Falls, and foot and float redd-count surveys of the tributaries, and Chinook passed above Sunset Falls fish trap. Surveyed tributaries include: Wallace and Sultan rivers, Bridal Vail, Elwell and Olney creeks. Aerial surveys provided total visible redd counts per survey flight and were plotted against survey date for the area-under-curve (AUC) method to give total redd days. Total redd days were then divided by the assumed standard 21-day redd life to yield the estimated cumulative redds from aerial surveyed reaches. The cumulative redd count was then expanded by 2.5 (fish per redd). Cumulative ground counted redds were expanded by 2.5 to estimate escapement in the tributaries. Added to this is the number of fish trucked above Sunset Falls.

The 2008 estimated escapement for Skykomish Chinook was 5,745 fish. Of these, 1,899 were estimated from aerial surveys of mainstem reaches, 3,139 were estimated from ground counts of tributary reaches, and 707 were adults trapped at Sunset Falls. 130 of the adults trapped at Sunset Falls were shipped to Wallace River for use in the hatchery program, with the remaining 577 released upstream. An additional 69 jacks were trapped at Sunset Falls and passed upstream.

Snoqualmie

Snohomish fall Chinook spawn in the Snoqualmie River and its tributaries, including the Tolt and Raging rivers and Tokul Creek. Spawning also occurs in the Pilchuck Rivers. Spawning occurs from mid-September through October. The escapement estimate is based on boat and foot surveys of mainstem and tributary reaches. Cumulative redds

from ground counts are expanded by 2.5 to yield the escapement estimate. In years where water conditions do not allow adequate mainstem ground-based surveys, aerial surveys, or some combination of aerial and ground surveys may be used.

In 2008, a total escapement of 2,560 Chinook was estimated for Snoqualmie Chinook, based on a total count of 1,024 redds. This brings the total estimate for the Snohomish basin to 8,305 Chinook.

A total of 677 Chinook were sampled for marks and tags in the Snohomish basin in 2008. Of the fish sampled, 159 had some combination of adipose clip and/or CWT. This information has not yet been used to estimate NOR/HOR composition on the spawning grounds.

4.3 South Puget Sound

4.3.1 Lake Washington

Cedar River

Escapement is based on live counts made by floating the entire river below Landsburg Dam, and applying the AUC method. Redds have been enumerated since 1999, and both methods were used for estimating escapement in 2008. Since 2003, Chinook have been passed above Landsburg Dam, and AUC estimates have been adjusted to account for fish that may have been counted during surveys in the lower river, but then later passed above Landsburg.

The escapement estimate for Chinook based on live counts was 788, which was lower than the 2007 escapement (1,730) but still above the recent 10-year average. There were 553 Chinook redds identified below Landsburg Dam which is the down from the 762 in 2007 but it is still above average. In addition, there were 46 redds located above Landsburg Dam. The redd-based escapement estimate including the upper river redds was 1,497. In addition to fish and redd counts, WDFW crews sampled 305 Chinook carcasses. A hatchery/natural determination was made based on the presence or absence of an adipose fin. The 2008 hatchery proportion, 9.5%, was the lowest since sampling began in 2003. The AUC escapement estimate of 788 was lower than the pre-season projection of 1,060. For the first time, the 2009 the pre-season projection is based on the redd-based methodology.

North Lake Washington Tributaries

There are long-established spawning ground index areas in Bear and Cottage Creeks. Since 1998, other portions of the Bear Creek watershed have been surveyed annually, but these data have not been included in the estimate. There is no expansion for unsurveyed areas in other tributaries. Escapement to Bear and Cottage Creeks is based on live counts, and uses the AUC method. In 2008, there were an estimated 78 spawners in Bear Creek, and 105 in the Cottage Creek index. An additional 54 were estimated in upper Cottage, above the index. A total of 122 adult carcasses were sampled in Bear and Cottage, of which 27 (22%) were unmarked. Additional natural spawning occurs in Issaquah Creek. In 2008, an estimated 1,858 Chinook spawned in lower Issaquah Creek, and 881 additional Chinook were released above the hatchery and allowed to spawn naturally. About 10% of the natural spawners were unclipped.

4.3.2 Green River

A new method for estimating natural escapement had been employed for 2003-07. Estimates of system (mainstem Green and Newaukum Creek) female spawners were available from mark-recapture studies conducted in 2000, 2001 and 2002. After subtracting Newaukum females (estimated by the standard method), an estimate of mainstem female spawners was derived for each year. This estimate of mainstem females was compared to the “adjusted” peak count of visible redds for each corresponding year, with the assumption that each female dug a single redd. Beginning in 2003, the mean ratio of mainstem females to mainstem adjusted peak redds (3.109) from the three study years was applied to that year’s adjusted peak redd count to estimate mainstem female spawners. A sex ratio of 1.5 males per female was assumed in calculating the total mainstem escapement. Prior to the 2008 spawning season, technical staff from WDFW and the Muckleshoot Tribe agreed that the “adjusted peak count method” described above likely resulted in estimates that were higher than the true escapement. Staff agreed to use a method employed prior to 2003. Redds were enumerated in five index sections throughout the season and used to expand to the rest of the river utilizing aerial counts. The Green River Chinook escapement has been identified as a candidate for future validation studies.

The agreed to natural spawning Chinook escapement estimate for the Green River Basin was 5,971 (5,735 mainstem Green and 236 Newaukum Creek) for 2008.

In 2008, 554 carcasses were sampled for marks and tags in the mainstem Green, and 75 were sampled in Newaukum Creek. Based on estimates of 65.9% and 30.7% natural origin spawners in the Green and Newaukum respectively, the total escapement was estimated to be 64.5% (or 3,851 fish) natural origin, and 35.5% (or 2,120 fish) hatchery origin. The 35.5% is the lowest proportion of hatchery origin spawners observed in the Green Basin since mass marking was instituted with the 1999 brood year.

4.3.3 White River

The escapement estimates for White River spring Chinook is derived using trap counts at the Army Corps of Engineer’s (CORPS) Buckley Diversion Dam fish trap (Buckley fish trap) and hatchery returns to the Minter Creek/Hupp Springs and White River hatcheries. The Buckley Diversion Dam is a migration barrier to anadromous fish and contains a fish trapping facility where fish are trapped and trucked upstream of Mud Mountain dam.

This trap facility allows for the enumeration of all fish transported to the upper watershed. However, precise counts are dependent upon accurate species identification and record keeping. Records of trap and haul operations conducted in the absence of state or tribal fisheries managers has been the subject of ongoing concern. The total Chinook trapped and hauled upstream of Buckley Diversion Dam in 2008 was 1,829 (Table 22).

There were 23 wild Chinook caught at Buckley trap that were taken to the White River hatchery for NOR incorporation into the hatchery production, instead of being trucked upstream.

Origin	Adults	Jacks	Totals
Wild (NOR)	1,329	73	1,402
Acclimation Pond	482	41	523
Totals	1,811	114	1,925

There are two smolt release hatchery programs for White River spring Chinook. The first, Minter Creek/Hupp Springs program was initiated in the mid-1970's in response to steep declines in population abundance. This program was expanded following completion of the Muckleshoot Tribe's White River hatchery in 1989. Both facilities produce White River spring Chinook to supplement natural production.

The return of spring Chinook to the Minter Creek/Hupp Springs hatchery in 2008 was 1,024 adults and 108 jacks, for a total of 1,132.

The return of spring Chinook to the White River hatchery in 2008 was 1,189. These fish were either collected at the Buckley fish trap on the south side of the diversion dam, or volunteered to the hatchery trap on the north side of the diversion dam. Of the total, 954 were adults and 235 were jacks.

The total return of adult White River spring Chinook to the White River basin was 2,765, less than half of the FRAM prediction of 5,585.

4.3.4 Puyallup River

The Puyallup Tribal Fisheries (PTF) and Washington Department of Fish and Wildlife (WDFW) staffs agreed to use redd count-based methodology to estimate escapement for Chinook in the Puyallup River basin during even years. The estimated natural spawning fall Chinook escapement into the Puyallup River basin in 2008 is **1,967** fish.

South Prairie Creek

There is consensus that South Prairie Creek (SPC) is the most productive Chinook water in the basin and its component escapement estimate is critical. In the 1999 review, it was agreed that even-year SPC Chinook escapements would be based on cumulative redd counts and odd-year escapements would be based on the area under the spawning curve (AUC). Survey coverage was very good in 2008. The cumulative redd count of 369 yields a South Prairie Chinook escapement estimate of 923 spawners. The Wilkeson Creek cumulative redd count of **1** yields a Wilkeson Creek escapement estimate of 2 additional Chinook spawners. The SPC sub-basin total redd-based escapement estimate for 2008 is **925** spawners. Based on mark-sampling of carcasses observed, about 67 percent of these fish were unmarked.

Carbon River

In 1999, there were good redd count data for the Carbon River. River reaches with complete data tracked the SPC spawn timing remarkably well. Therefore, reaches with incomplete data were expanded using the SPC spawning timing curve with a high degree of confidence. Suitable survey conditions never occurred on the Carbon River during the

2008 spawning period. Consistent with the last eight Puyallup fall Chinook escapement estimates; PTF and WDFW staff presumed that the Carbon River 1999 and current year relative returns were similar to the South Prairie observations. Therefore, the 2008/1999 South Prairie Chinook escapement ratio ($925 / 1422 = 0.6501$) was applied to the 1999 Carbon River escapement (250) to estimate the 2008 value. This method estimated **162** Chinook spawning in the Carbon during 2008 ($250 * 0.6501 = 162$).

Mainstem Puyallup River Tributaries

Redd-based escapement estimates were calculated for most of the Puyallup River tributaries. No redds or fish were observed in Canyon Falls Creek in 2008. Clarks Creek escapement was 336 fish based on an AUC calculation. The AUC methodology was used, because the number of observed fish outnumbered the redd-based estimate. Based on mark-sampling of carcasses observed in Fennel, Clear, and Kapowsin creek (54 samples), about 82 percent of these fish were unmarked fish. No carcasses were observed in Canyon Falls Creek in 2008.

Puyallup River tributaries:	Escapement estimate:
Fennel Creek (WRIA 10.0406)	70
Canyon Falls Creek (10.0410)	0
Kapowsin Creek (10.0600)	53
Clear Creek (10.0022)	63
Clarks Creek (10.0027)	336
Tributary total	522

Mainstem Puyallup River

As we experienced in the Carbon River, there were not suitable survey conditions in the Puyallup River during the 2008 Chinook spawning period. The PTF and WDFW staff did not think that the 1999 Carbon River estimation method was appropriate for the Puyallup. It is believed that Puyallup River mainstem spawning escapement trend is more closely related to the tributaries. Therefore, the 2008/1999 Puyallup Tributary ratio ($208/113 = 1.8407$) is applied to the estimated 1999 Puyallup mainstem escapement (195) producing a 2008 Puyallup River mainstem escapement estimate of **359** Chinook ($195 * 1.8407 = 359$).

The 2008 Chinook natural spawning escapement into Clark's Creek is not used in the development of the tributary to Puyallup River mainstem ratio. Unfortunately, many of the Chinook produced and released from Clark's Creek hatchery are not marked and the identification of origin of natural spawners cannot be made. Since 1999 is used as the base year, the 1999 natural spawning escapement estimate for Clark's Creek is used instead.

Total Escapement

The total 2008 estimated Puyallup River naturally spawning fall Chinook escapement is **1,967** fish. It is estimated that 1,450 are natural -rigin recruits (NOR), based on mark-sampling of carcasses observed. The estimate of NORs assumes the proportion of hatchery verses natural origin spawners is the same between Puyallup River tributaries and the Puyallup River mainstem and South Prairie Creek and the Carbon River.

To reiterate the statement made the last several years, there is a "need to develop some means of adjusting historical escapements to make them relative and comparable to the 1999-2008 method and to make sure those revisions are incorporated into and accounted

for in stock management and harvest management planning and modeling exercises.” At this point in time, 1999 is the only survey year that has sufficient survey data to potentially serve as a point of reference for historical adjustments. We would be much more comfortable if there were additional years with suitable survey conditions that could be used to develop historical adjustment protocols.

4.3.5 Nisqually River

Nisqually River fall Chinook spawn in the main stem of the Nisqually River from river mile (RM) 0 to RM 42 and in the Mashel River, which enters the Nisqually at RM 39.5, from RM 0 to RM 6.6. Chinook have also been documented in many of the smaller tributaries to the Nisqually River but these observations are believed to be the result of off station hatchery releases and/or hatchery strays.

Survey conditions in the main stem of Nisqually River during the fall of 2008 were better than in recent years. The water release from La Grande Dam was at or below 1200 cubic feet per second (cfs) during the entire spawning season. Viewing conditions in the main-stem Nisqually, typically less than one foot during this time of year, were estimated to be 1 foot during 2008. No main stem surveys were canceled due to poor conditions. Survey conditions in the Mashel River were not typical for this time of year. Very low water appeared to limit upstream migration through early October. Based on this assumption, no surveys were conducted in the Mashel River upstream of RM .5 until early October.

The fall Chinook escapement estimate to is calculated using a method developed by Herrington-Tweit and Newman (1986). The estimate is calculated as;

Escapement = $6.81 * ((\text{peak L+D Mashel index}) + (2.5 * (\text{peak L+D Nisqually mainstem index})))$.

Mainstem Nisqually River

The main stem Nisqually River fall Chinook escapement index area is located between river mile (RM) 21.6 and 26.2. The index area was surveyed by the Nisqually Indian Tribe (NIT) five times, approximately every seven days, between September 18th and October 29th. Supplemental surveys were also conducted twice (October 2nd and October 16th) in the Nisqually River from RM 37.4 and RM 39.6.

Surveys were conducted using four rafts, two on each side of the river. Live and dead fish were counted. If possible, carcasses were sampled for marks (adipose clips), coded wire tags (CWTs), length, scales, and otoliths. The caudal fin was removed from each fish as it was sampled, so that it would be identified as previously sampled on subsequent surveys.

Fall Chinook began entering the lower river in early July and were observed at RM 21 in early September. Peak harvest by Nisqually Tribal fishers in the lower river (RM 0 to RM 10), likely an indication of peak up-river migration, was during the week of August 17th. Peak live plus dead count (70 live and 74 dead) between RM 21 and RM 26 was documented on October 22nd. The highest live plus dead count (12 live and 4 dead) was documented between RM 37.4 and RM 39.6 on October 16th. No attempt was made to document redd abundance in the main stem due to high turbidity. Surveyors collected and sampled 147 Chinook carcasses during surveys on all sections of the main stem Nisqually. Of the adult fish sampled, 84 were marked, and 63 were unmarked. There were also 4 CWTs recovered from carcasses in the mainstem (one marked, three unmarked). The marked/unmarked ratio was adjusted (based on mark rate of hatchery

releases) to account for unmarked hatchery-origin fish. When adjusted, the natural spawners were estimated to be 64% hatchery-origin, and 36% natural-origin.

Mashel River

The Mashel River summer/fall Chinook escapement index area is located between RM 0 and 3.2. The index area was surveyed three times, approximately every seven days, from October 8th through October 23rd. Low water prevented surveys prior to October 2nd. In addition to the index reach surveys, areas between RM 3.2-3.4, RM 4.5-5.2, RM 5.2-6.0, and RM 6.0-6.6, were each surveyed four times.

Surveys were conducted by a two-person crew, one on each side of the river, by walking downstream. All visible redds were marked with field flagging, recorded on a global positioning system, and recorded as either occupied or unoccupied. Live and dead fish were counted. If possible, carcasses were sampled for marks (adipose clips), coded wire tags (CWTs), length, scales, and otoliths. The caudal fin was removed from each fish as it was sampled, so that it would be identified as previously sampled on subsequent surveys.

The peak live and dead count (82 live and 56 dead) was documented in the index reach on October 8th. A total of 124 Chinook carcasses were sampled during 2008. Of the fish sampled, 67 were adipose marked and 57 were unmarked. Five CWT's were collected from fish sampled in the Mashel River (3 marked and 2 unmarked). When adjusted for unmarked rate of hatchery fish, this gives an estimate of 38% NOR and 62% HOR for the Mashel.

Redds were observed in the lower Mashel River October 1st and peak redd count between RM 0 and RM 3.2 was 62 (Oct. 8th). The total number of redds counted from October 1st through October 23rd was 131. Based on the assumption that one redd equates to 2.5 adult Chinook, the total escapement estimate for the Mashel River in 2008 was 328.

Supplemental Surveys

Supplemental surveys were conducted on Ohop Creek from RM 0-.1, RM 4.5-5.7, and RM 5.7-6.1, two times with no fish or redds observed. The little Mashel River was surveyed twice from RM 0-0.7 with no fish or redds observed.

Escapement

The 2008 Nisqually River fall Chinook natural escapement estimate is 3,398. The estimate exceeds the co-managers agree-to escapement goal of 1,200 fish, as described in the Nisqually Chinook Recovery Plan (2001). Mark sampling data, when adjusted for rates of unmarked hatchery releases, and weighted by area, provide an estimate of 1,211 NOR spawners in the Nisqually basin in 2008.

Discussion

The Nisqually River fall Chinook escapement estimate methodology was developed in 1986 (by Herrington-Tweit and Newman) using data collected prior to the construction of the Clear Creek Hatchery and may not be an accurate description of the naturally spawning population in terms or origin. Mark sampling data indicates that many of the Chinook spawning naturally in the Nisqually River are hatchery origin strays. Estimates of natural origin contributions to escapement are uncertain, because not all fish released are adipose marked. Recent brood-year release (2001-2006) mark rates averaged 89.6 %.

In the future, efforts should be made to mark all hatchery Chinook released into the Nisqually River.

4.4 Hood Canal

Mid-Hood Canal Tributaries

The Mid-Hood Canal management unit is comprised of Chinook produced in the Dosewallips, Duckabush, and Hamma Hamma watersheds.

In the Dosewallips and Duckabush rivers, the lower reaches surveyed are spawning and transit areas. Upper reaches of each river have been regularly surveyed in the Dosewallips and Duckabush since 1998, but few adults have been observed. Current escapement estimates are derived from a combination of counts of live Chinook adults and Chinook redds.

In the Hamma Hamma River, most of the Chinook spawning area is currently being surveyed. Since 1998, escapement was estimated from counts of cumulative new redds and/or from live Chinook using the area-under-the curve (AUC) method. A cooperative supplementation program was initiated in 1995 to rebuild Chinook abundance.

Summer chum salmon and pink salmon (in odd years) spawn at the same time as Chinook in the lower reaches of these three streams. Consequently, it can be difficult to distinguish any Chinook redds from summer chum or pink redds unless Chinook are actively spawning and observed on redds. Pink salmon spawn predominately downstream of RM 6.7 on the Dosewallips, downstream of RM 2.6 on the Duckabush and throughout the reaches surveyed on the Hamma Hamma. Summer chum salmon spawn predominately downstream of RM 3.6 on the Dosewallips, downstream of RM 2.6 on the Duckabush and throughout the reaches surveyed on the Hamma Hamma. It has been possible to count Chinook redds in the upper Dosewallips and Duckabush River reaches (especially in years without pink salmon).

During 2008, spawner surveys were conducted by WDFW on the Dosewallips, Duckabush, and Hamma Hamma rivers every 7 to 10 days from late August or early September through October. The escapement estimate to all three systems combined was 273 adults: 18, 0, and 255 Chinook in Dosewallips, Duckabush, and Hamma Hamma rivers, respectively. During 2008, it is possible that some Chinook redds were not identifiable on the Dosewallips and Duckabush rivers in areas with summer chum spawning. However, based on the number of Chinook redds and adults observed during surveys, the escapement estimates for Dosewallips and Duckabush rivers are considered good.

The Dosewallips River was surveyed from RM 0 to RM 2.3, RM 3.6 to RM 6.7, and RM 7 to RM 11; Rockybrook Creek, a tributary, was surveyed from RM 0 to RM 0.3. Seven Chinook redds and 14 live Chinook were observed and the escapement estimate is 18 Chinook in the Dosewallips River during 2008. The Duckabush River was surveyed from RM 0 to RM 2.6 and RM 4.8 to RM 6; Hatchery Creek, a tributary, was surveyed from RM 0 to RM 0.1. No Chinook redds or adults were observed in the Duckabush River during 2008. The Hamma Hamma River was surveyed from RM 0.3 to RM 1.8; John Creek, a tributary, was also accessible to Chinook beginning in early October and was surveyed from RM 0 to RM 1.6. The AUC escapement estimate is 235 Chinook in the Hamma Hamma (which includes 20 Chinook collected for broodstock) and an estimated 20 Chinook spawned in John Creek (based on 8 Chinook redds observed). Total

escapement to the Hamma Hamma River system is estimated as 255 Chinook during 2008.

The FRAM preseason escapement estimate was 57 Chinook in Mid-Hood Canal during 2008 (PNPTC and WDFW 2008), while actual escapement was 273 Chinook. The supplementation program on the Hamma Hamma River contributed substantially more adults to escapement than in recent years and accounted for the difference between forecasted and actual escapements in 2008. The escapements to Dosewallips and Duckabush were low as anticipated.

To better assess natural Chinook and chum production and productivity in Mid-Hood Canal rivers, a screw trap was installed on the Hamma Hamma River beginning in 2002 and a screw trap was installed on the Duckabush River beginning in 2008.

Skokomish River

Chinook spawning takes place in the mainstem Skokomish River up to the confluence with the South and North Forks at RM 9, in the South Fork (primarily up to RM 5.5), and in the North Fork from RM 9 to 17 (where Cushman Dam blocks further access). Natural escapement estimates are based on counts of Chinook redds in index areas in the mainstem Skokomish (RM 2.2 to 9.0), North Fork (R.M. 9.0 to 15.6), and South Fork (R.M. 0 to 2.2). Additional surveys were done from RM 2.2 to RM 5.5 in the South Fork during 2008. In addition, escapement estimates are made for tributaries including Purdy Creek, McTaggart Creek, Vance Creek, and Hunter Creek.

Live and dead adults, along with visible redds, were counted in Skokomish River index areas during foot and raft surveys (e.g., see Smith and Castle 1994). Surveys are conducted every seven to ten days from late August through October. A cumulative new redd count for each section of the river was tabulated at the end of the season and multiplied by 2.5 fish per redd to estimate total Chinook escapement. In addition, foot surveys are made in Hunter, Vance and McTaggart creeks to better determine escapement there. Escapements to these tributaries are estimated based on redd counts and/or live Chinook observed.

In recent years, low flows at the mouth of the South Fork prevented Chinook from accessing the lower South Fork early in the season. In 2008, Chinook were able to access the lower South Fork Skokomish throughout the season.

During 2008, total estimated spawner escapement is 1,134 Chinook in the Skokomish River system. Spawner escapement is comprised of 671 Chinook in the mainstem Skokomish (including 231 Chinook in Hunter Creek), 295 Chinook in the North Fork Skokomish (including 7 Chinook in McTaggart Creek), and 168 Chinook in the lower (RM 0 to RM 5.5) South Fork Skokomish (including 5 Chinook in Vance Creek).

The FRAM preseason escapement prediction was 1,207 Chinook (FRAM 2108).

In 2008, an additional 400 hatchery Chinook adults were transported from George Adams Hatchery and released into upper South Fork Skokomish (upstream of RM 10) as part of a "pilot" re-introduction program. The re-establishment of natural Chinook production to the upper South Fork Skokomish River is an integral part of the Skokomish River Chinook Salmon Recovery Plan prepared by the Skokomish Tribe and WDFW in 2007.

The objectives for the pilot phase are: (1) transport and release an appropriate number of adult hatchery Chinook to the South Fork on a weekly or twice weekly basis to enable their subsequent dispersal to spawning sites, mate selection, and natural spawning;

(2) evaluate logistics and resources needed to effectively carry out annual supplementation activities needed for the project; (3) assess spawner dispersal patterns, holding and spawning site distribution, and spawning timing of supplementation fish in the South Fork; (4) assess timing, size, and relative abundance of Chinook out-migrants at the South Fork screw trap in 2009 as part of the on-going operations for that trap; and (5) formulate the initial, full supplementation plan to be targeted for implementation in late summer of 2009.

Objectives (1), (2) and (3), above, were essentially met during fall 2008. A summary report is to be produced jointly by Skokomish staff and WDFW and finalized in summer of 2009 as part of a project review.

Hood Canal Chinook Mark Sampling

Mass marking has been implemented for Hood Canal hatchery Chinook, including releases from George Adams Hatchery, Hoodport Hatchery, and Endicott Ponds. The proportion of all hatchery Chinook released that were either tagged and/or marked has incrementally increased since brood year 2003. For example, about 33%, 48%, 75%, 85% and 95% of brood year 2003 through brood year 2007 releases, respectively, were either tagged and/or marked. These Chinook will return to Hood Canal predominately as age 3 and age 4 fish from 2006 through 2011.

Coded-wire tag (CWT) data and age and sex composition data have been routinely collected for Chinook returning to George Adams Hatchery since 1988 and Double Index tag groups of Chinook have been released since 1998.

More intensive sampling of Chinook on the natural spawning grounds has been done since 1998. During 2008, the Skokomish, Dosewallips, Duckabush, and Hamma Hamma rivers were targeted for enhanced mark and CWT sampling and WDFW also sampled Chinook carcasses for CWTs on the Dewatto, Tahuya, Union, and Lilliwaup rivers during 2008.

During 2008, Chinook spawner escapements were higher in the Skokomish and Hamma Hamma rivers compared to 2007. Of the 112 Chinook sampled in Hood Canal rivers during 2008, nine Chinook had CWTs. We sampled 6.7% of Chinook spawner escapement in the Skokomish River, 12.5% of the mid-Hood Canal Chinook spawner escapement (in the Hamma Hamma, Duckabush, and Dosewallips rivers), and had an overall sampling rate of 7.7% in all Hood Canal rivers combined (Table 23). No CWTs were recovered in the mainstem, North Fork, or lower South Fork Skokomish rivers. One CWT was recovered in Hunter Creek, a tributary to the Skokomish River, from Chinook released from Endicott Pond hatchery. Eight CWTs were recovered in the Hamma Hamma River and its tributary, John Creek, from BY 2005 Chinook released from the Hamma Hamma supplementation program.

Jacks are not included in Chinook spawner escapement estimates in Hood Canal, but few jacks were sampled during 2008. One CWT was recovered from a Chinook jack sampled in the Hamma Hamma, a BY 2006 release from the supplementation program there.

Table 23. Chinook salmon spawner escapement sampled for marks and coded-wire tags (CWTs) in Hood Canal rivers, 2008.

Manag. Unit	River	Spawner escapement	Chinook sampled		Tagged 1/		Untagged 1/		Unk. tagged 2/		Totals	
			Number	%	AD	NM	AD	NM	AD	NM	CWT recov.	Ad clip obs.
Skok.	Mainstem Skokomish R.	671	72	10.7%	1	0	23	48	0	0	1	24
	N.F. Skokomish R.	295	3	1.0%	0	0	3	0	0	0	0	3
	S.F. Skokomish R. (lower)	168	2	1.2%	0	0	2	1	0	0	0	2
	Skokomish River total	1,134	77	6.8%	1	0	28	49	0	0	1	29
12A	Big Quilcene R.	0	0	0%	0	0	0	0	0	0	0	0
	Little Quilcene R.	0	0	0%	0	0	0	0	0	0	0	0
12B	Hamma Hamma R. 2/	255	34	13.3%	8	0	2	4	12	8	8	22
	Duckabush R.	0	0	0.0%	0	0	0	0	0	0	0	0
	Dosewallips R.	18	0	0.0%	0	0	0	0	0	0	0	0
	Mid-Hood Canal total	273	34	12.5%	8	0	2	4	12	8	8	22
12C	Dewatto R.	8	0	0.0%	0	0	0	0	0	0	0	0
	Lilliwaup R.	1	1	0.0%	0	0	1	0	0	0	0	1
12D	Tahuya R.	8	0	0.0%	0	0	0	0	0	0	0	0
	Union R.	15	0	0.0%	0	0	0	0	0	0	0	0
Hood Canal total		1,439	112	7.8%	9	0	31	53	12	8	9	52

1/ AD = adipose fin-clipped; NM = no mark

2/ Releases from Hamma Hamma R. supplementation program were AD-clipped and CWTd; natural escapement = 235, brood stock = 20;

20 broodstock were mark sampled but not wanded, so presence/absence of CWTs is unknown

The proportion of hatchery fish in the spawning escapement was estimated based on age composition in the escapement, sampling rate of the spawning escapement, and the proportion of hatchery production releases that was marked and/or tagged from BY 2003 (age 5), BY 2004 (age 4), and BY 2005 (age 3).

In the Skokomish River system during 2008, preliminary estimates are that spawning escapement was comprised of 55% hatchery-origin Chinook and 45% natural-origin Chinook.

In the Hamma Hamma River during 2008, preliminary estimates are that spawning escapement was comprised of 53% -62% hatchery-origin Chinook and 38%-47% natural-origin Chinook.

Based on adipose-clip and CWT recoveries, preliminary estimates are that spawning escapement was comprised of 53% hatchery-origin Chinook and 47% natural-origin Chinook in the Hamma Hamma during 2008.

All hatchery Chinook released from the Hamma Hamma supplementation program are also otolith marked, with unique marks applied for fish from George Adams Hatchery brood stock and for fish from brood stock collected in the Hamma Hamma River. Based on otolith analyses, preliminary estimates are that spawning escapement in 2008 was comprised of 62% hatchery-origin Chinook and 38% natural-origin Chinook. Of the hatchery-origin Chinook, 48% were from George Adams Hatchery brood stock and 52% were from Hamma Hamma brood stock.

4.5 Strait of Juan de Fuca

Dungeness

Since 1986, surveys have been conducted throughout the spawning season from RM 0 to 18.8 in the mainstem Dungeness, and from RM 0 to 5.0 in the Gray Wolf mainstem, to generate a cumulative redd count for the season. The total redd count is multiplied by 2.5 to estimate the total number of adults. In 2008, 50 redds were counted in the Dungeness (125 adults), and 6 redds were counted in the Gray Wolf (15 adults) for a total of 56 redds (140 adults). There were 87 adults used for broodstock in the hatchery plus 2 pre-spawn mortalities, bringing the total estimated return to the river to 229, below the FRAM predicted escapement of 1,033, and below the low abundance threshold of 500. The decrease in escapement of Dungeness spring Chinook relative to recent years and relative to forecast are partially due to the termination of the captive brood program after the 2002 brood, and resulting decrease in numbers of hatchery juveniles released. Because the forecasts for Strait of Juan de Fuca Chinook are based solely on average recent returns, they did not account for this reduction in production.

There were 104 carcasses sampled for scales and checked for CWTs. The majority of the adults sampled for scales and CWTs were collected for broodstock. Very few carcasses could be recovered in the river due to the low natural escapement. Based on the CWT results and scale samples analyzed, the preliminary HOR/NOR composition for RY2008 was 38.6% HOR and 61.4% NOR. The age of the HOR Chinook for RY2008 consisted of 43.4% age 3, 51.7% age 4, 2.3% age 5, and 2.3% age 6. The age of the NOR Chinook consisted of 27.5% age 3, 71.0% age 4, 0.0% age 5, and 1.5% age 6.

Elwha River

Chinook spawning in the Elwha is limited to the 4.8 miles below the dam, with most natural spawning concentrated between RM 2.8 and 4.4. Adult escapement in the mainstem is estimated by producing an AUC estimate of redd-days, which is divided by an assumed 21-day redd life to estimate total redds. That total is added to the number of redds counted in the 1-mile long Hunt's Road side channel index surveyed by the Lower Elwha Klallam Tribe. This redd total is multiplied by 2.5 to estimate total adults. For 2008, the estimate of natural spawning Chinook was 470. An additional 578 Chinook were removed from the river by gaff and used as broodstock for the hatchery program. A total of 89 Chinook volunteered into the hatchery trap, and were also used as broodstock for the hatchery. In addition, sixteen hatchery pre-spawn mortalities were observed bringing the total return to the river to 1,153 Chinook, well below the FRAM prediction of 2,222. WDFW field staff collected 217 otolith samples and 228 scale samples. Otoliths were collected to help distinguish between hatchery and wild fish based on the presence or absence of otolith marks. The otoliths have not been analyzed for marks at this time to determine HORS and NORs.

The number of males sampled for scales outnumbered females 2.3 to 1. Age composition had to be adjusted according to the sex ratio of the gaffed, trapped, and estimated number of natural spawners. Excluding the 2 year old Chinook since this age group is not expanded to the population, the age composition consisted of 58.3% age 3, 31.3% age 4, 10.4% age 5 and 0.0% age 6.

Hoko

Escapement estimates are done using WDFW and Makah Fisheries ground surveys of cumulative redd counts for the mainstem and tributaries found between river miles 1.5 to 21.7, which represents the entire range of Chinook spawning in the Hoko basin. Redd counts are multiplied by 2.5 adults/redd. There are ten mainstem reaches plus 13 reaches in tributaries, which include the Little Hoko River, a tributary to the lower mainstem, and Browne's, Herman, North Fork Herman, Ellis, Bear, and Cub creeks, which are tributaries to the upper mainstem. WDFW conducted four surveys in the mainstem Hoko River from RM 1.5 to RM 3.4 and five surveys from RM 3.4 to 10.2 during the 2008 return year. Makah Fisheries Management (MFM) surveyed the mainstem Hoko upstream of RM 10.2 and the Hoko tributaries. Survey conditions were excellent for observing redds during 2008.

The 2008 Chinook terminal run size was estimated to be 483 adults, below last year's escapement of 570 and below the FRAM prediction of 925. The escapement estimates for the upper mainstem Hoko River (RM 10.1 to 21.7), lower mainstem Hoko River (RM 1.9 to 10.1), and all tributaries were 188, 230, and 12, respectively. MFM staff collected an additional 53 adult Chinook for broodstock and scale samples. The estimated 2008 Chinook age composition was follows: 1.0% age 2, 4.6% age 3, 12.8% age 4, and 81.6%% age 5 and no age 6.

5 Coded-wire Tag Sampling

Commercial and recreational catch is sampled to recover coded-wire tagged Chinook and coho. General objectives are to sample 20% of commercial catch in each area and week, and 10% of recreational catch in each area and month. Chinook that are sampled CWT's are also sampled for biological data (scales, length, sex), meaning that biological sampling rates are essentially identical to CWT sampling rates. Rates from 2007 are presented here. Sampling rates in commercial fisheries were generally good (Table 24), with a total of 45,251 Chinook sampled for CWT, compared to an estimate of 122,675 total catch. Several individual areas did fall short of the 20% target for the year. Areas 12C/12H (Hood Canal), the Skokomish River, and Area 13 F (Budd Inlet) were the areas with the most substantial catches, but with sampling rates below 20%. All marine area recreational fisheries were sampled at rates between 10% and 50% for the year (Table 25), with a total of 6,039 sampled from an estimated 29,539 caught.

Table 24. Chinook coded-wire tag sampling rates for commercial fisheries in 2008.

Catch Area	Catch	# sampled	Sample rate
BELLINGHAM BAY 7B	8,748	3,584	40.9%
SAMISH BAY 7C	8,149	4,214	51.7%
LUMMI BAY 7D	190	5	2.6%
NOOKSACK R 01.0120	810	301	37.1%
SAMISH R 03.0005	1	0	0.0%
SKAGIT BAY (AREA 8)	0	0	0.0%
SKAGIT R 03.0176	1,844	1,641	88.9%
SARATOGA PASSAGE 8A	100	55	55.0%
TULALIP BAY 8D	6,121	2,076	33.9%
PORT GAMBLE BAY 9A	42	2	4.7%
HOOD CANAL (12)	9	7	77.7%
QUILCENE + DABOB 12A	183	5	2.7%
SOUTH HOOD CANAL 12C	2,629	45	1.7%
SOUTH HOOD CANAL 12H	4,440	623	14.0%
PURDY CR 16.0005	2,384	120	5.0%
SKOKOMISH R 16.0001	4,796	656	13.6%
10 (SEATTLE)	200	171	85.5%
ELLIOTT BAY 10A	1,485	1,220	82.1%
EAST KITSAP 10E	4,119	1,579	38.3%
DUWAMISH R 09.0001	10,428	5,953	57.0%
LK SAMMAMISH	6,227	2,584	41.4%
AREA 10F SHIP CANAL	1,299	1,058	81.4%
EAST + WEST PASS(11)	4	0	0.0%
COMMENCEMENT BAY 11A	45	0	0.0%
PUYALLUP R 10.0021	3,207	1,908	59.4%
WHITE R 10.0031	418	0	0.0%
NISQUALLY 13	5	0	0.0%
CARR INLET 13A	9,676	2,109	21.7%
CHAMBERS BAY 13C	10,558	5,282	50.0%
SOUTH SOUND PASS 13D	110	47	42.7%
BUDD INLET 13F	8,268	926	11.1%
NISQUALLY R 11.0008	23,102	8,068	34.9%
ADMIRALTY INLET 9	47	0	0.0%
NEAH BAY 4B	14	0	0.0%
CLALLAM BAY 5	96	17	17.7%
SAN JUAN ISLANDS 7	883	337	38.1%
POINT ROBERTS 7A	1,701	655	38.5%
DUNGENESS BAY 6D	1	1	100.0%
ELWHA R 18.0272	4	0	0.0%
SOOES R 20.0015	330	0	0.0%
WAATCH R 20.0005	2	0	0.0%

Table 25. Chinook coded-wire tag sampling rates for marine recreational fisheries in 2007.

Catch Area	Catch	# sampled	Sample rate
Area 5 - West SJF	5,028	1,143	22.7%
Area 6 - East SJF	1,898	787	41.4%
Area 7 - San Juan Islands	4,959	1,167	23.5%
Area 8.1 - Skagit Bay	814	218	26.7%
Area 8.2 - Port Gardiner	1,368	681	49.7%
Area 9 - Admiralty Inlet	7,785	2,118	27.2%
Area 10 - Central Puget Sound	8,495	2,196	25.8%
Area 11 - Central Puget Sound	14,165	3,552	25.0%
Area 12 - Hood Canal	2,815	336	11.9%
Area 13 - South Puget Sound	3,102	470	15.1%

6 Pacific Salmon Treaty Compliance / ISBM Index Rates

The terms of the 1999 Chinook Annex to the PST requires that ISBM fisheries be managed to contribute to the achievement of MSY escapement or other agreed, biologically-based escapement objective for indicator Chinook stocks or management units. Furthermore, the general obligation of southern U.S. ISBM fisheries is to achieve an overall 40% reduction in their combined exploitation rate, relative to the base period, on management units for which escapement is projected not to achieve the escapement goal.

Lack of technical agreement on escapement goals for Puget Sound stocks precludes a formal assessment of compliance with the agreement. However, from the Puget Sound co-managers' perspective, most Puget Sound Chinook stocks are depressed, some critically depressed, such that most have not achieved their escapement goals, so they have assumed that the Chinook Agreement obligation for ISBM fisheries is operative.

ISBM fisheries in southern U.S. waters include marine and freshwater commercial and recreational fisheries in Puget Sound, the Strait of Juan de Fuca, and the Washington coast. They also include commercial and recreational fisheries in the Columbia River and on the Oregon coast, though these fisheries have little impact on Puget Sound Chinook stocks.

The Joint Chinook Technical Committee (CTC) performs a pre-season assessment to inform PST annual fisheries planning. With few exceptions, the pre-season CTC assessment indicates compliance with the obligation (Table 26), i.e. exploitation rate indices on the indicator stocks were projected to be less than 0.600. These pre-season model projections should be viewed cautiously, because the model output is sensitive at exploitation rates less than 20%. The low abundance of most of the Puget Sound indicator stocks also confounds this assessment.

The CTC also completed post-season assessment of ISBM indices using CWT analysis through 2006 (TCChinook (08)-2). However, assessments are not available for the majority of Puget Sound indicator stocks in most years, due to insufficient data (lack of stock specific tag code, base period CWT recoveries, etc.), so they are not presented here.

Indicator Stock	2002	2003	2004	2005	2006	2007	2008
Skagit S/F	0.27	0.406	0.157	0.195	0.258	0.325	0.321
Stillaguamish	0.2	0.184	0.224	0.185	0.493	0.152	0.137
Snohomish	0.15	0.072	0.11	0.889	0.199	0.138	0.165
Lake Washington	1.25	0.768	0.411	0.373	0.613	0.391	0.392
Green	0.35	0.263	0.26	0.202	0.361	0.278	0.38
Nooksack Early	0	0.121	0.974	0.222	0.121	NA	NA
Skagit Spring	0.06	0.119	0.663	0.213	0.161	NA	NA
Hoko	0.48	0.682	0.966	0.444	0.442	0.401	0.305

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Appendices

Appendix 1. 2008-9 Co-Managers' List of Agreed Fisheries (May 1, 2008 – April 30, 2009)

2008-9 Co-Managers'
List of Agreed Fisheries
(May 1, 2008 – April 30, 2009)

Part I Treaty/Non-Treaty Ocean Fisheries (FRAM #2108 & #0824)

Treaty Troll Quota	37,500 Chinook; 20,000 coho
Nontreaty TAC	40,000 Chinook; 25,000 coho
NT Troll TAC	20,000 Chinook; selective fishery impacts associated with a landed catch of 4,000 marked hatchery coho
Recreational TAC	20,000 Chinook and selective fishery impacts associated with a landed catch of 20,350 marked hatchery coho.

1.1 Treaty Troll: Areas 2, 3, 4 & 4B

5/1-6/30	Chinook directed fishery with sub quota of 20,000 Chinook. May 1 through the earlier of June 30 or a 20,000 Chinook quota. All salmon except coho. If the Chinook quota for the May-June fishery is not fully utilized, the excess fish cannot be transferred into the later all-salmon season. If the Chinook quota is exceeded, the excess will be deducted from the later all-salmon season.
7/1-9/15	All salmon species with sub quota of 17,500 Chinook or quota of 20,000 coho. Chum release 8/1-9/30. July 1 through the earlier of September 15, or a 17,500 pre-season Chinook quota, or a 20,000 coho quota. All salmon.

1.2 Non-Treaty Troll: U.S./Canada border to Cape Falcon

5/3-6/30	All salmon except coho with 11,700 Chinook quota; Open Saturday through Tuesday with a landing and possession limit of 50 Chinook per vessel north of Leadbetter Point or 50 Chinook per vessel south of Leadbetter Point for each open period. Mandatory Yelloweye Rockfish Conservation Area, Columbia and Cape Flattery Control Zones closed. Trip limits, gear restrictions, and guidelines may be implemented or adjusted in-season. Vessels must land their fish within 24 hours of any closure of this fishery; under state law, vessels must report their catch on a state fish receiving ticket. Vessels fishing, or in possession of salmon while fishing north of Leadbetter Point must land and deliver their fish within the area and north of Leadbetter Point. Vessels fishing, or in possession of salmon while fishing south of Leadbetter Point must land and deliver their fish within the area and south of Leadbetter Point, except that Oregon permitted vessels may also land their fish in Garibaldi. State regulations require that all fishers landing fish into Oregon from any fishery between Leadbetter Point, WA and Cape Falcon, OR must notify Oregon Department of Fish and Wildlife within one hour of delivery or prior to transport away from the port.
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<p>July 1 thru earliest of Sept. 16 or pre-season Chinook subquota of 8,300 or coho quota of 4,000 marked coho.</p>	<p>Open July 1-2, then open Saturday through Tuesday. Landing and possession limit of 35 Chinook and 25 marked coho per vessel per open period north of Leadbetter Point or 35 Chinook and 25 marked coho south of Leadbetter Point. All salmon except no chum retention north of Cape Alava, Washington in August and September (all retained coho must have a healed adipose fin clip). Gear is restricted to plugs 6 inches or longer in length. Mandatory Yelloweye Rockfish Conservation Area, Cape Flattery and Columbia Control Zones closed. Trip limits, gear restrictions, and guidelines may be implemented or adjusted in-season. Vessels must land their fish within 24 hours of any closure of this fishery. Under state law, vessels must report their catch on a state fish receiving ticket. Vessels fishing, or in possession of salmon while fishing north of Leadbetter Point must land and deliver their fish within the area and north of Leadbetter Point. Vessels fishing, or in possession of salmon while fishing south of Leadbetter Point must land and deliver their fish within the area and south of Leadbetter Point, except that Oregon permitted vessels may also land their fish in Garibaldi. State regulations require that all fishers landing fish into Oregon from any fishery between Leadbetter Point, WA and Cape Falcon, OR must notify Oregon Department of Fish and Wildlife within one hour of delivery or prior to transport away from the port.</p>
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1.3 Non-Treaty Recreational

U.S./Canada border to Leadbetter Point (Areas 2 – 4)

<p>6/1 thru earliest of 6/28 or Chinook quota of 8,200.</p>	<p>Chinook only. Open Tuesday through Saturday north of the Queets River and Sunday through Thursday south of the Queets River. One fish per day. Chinook minimum size limit 24 inches. Inseason management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.</p>
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Area 1: Leadbetter Point to Cape Falcon (Oregon)

<p>6/1 thru earliest of 6/28 or Chinook subarea guideline of 5,300.</p>	<p>Chinook only. Open seven days per week. One fish per day. Chinook minimum size limit 24 inches. Inseason management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.</p>
<p>6/29-9/30 (10,180 marked coho sub quota)</p>	<p>Open Sun-Thur; 2 fish per day, only one of which may be a Chinook; retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches and coho minimum size 16"; Chinook guideline: remainder of 5,300 subarea guideline from the June Chinook-directed fishery; closed in Columbia Control Zone. Inseason management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.</p>

Buoy 10

8/1-9/1	Open 7 days/week; 2 fish per day, only one of which may be a Chinook; Chinook minimum size 24 inches and coho minimum size 16 inches; retained coho must have a healed adipose fin clip; release sockeye, chum, and unmarked coho. Barbed hooks allowed.
9/2-9/30	Open 7 days/week; 2 coho only per day. Coho minimum size 16 inches; retained coho must have a healed adipose fin clip. Barbed hooks allowed.
10/1-12/31	Open 7 days/week; 6 coho only per day, 2 adults (minimum size 12 inches); retained coho must have a healed adipose fin clip. Barbed hooks allowed.
1/1/2009-3/31/2009	Open 7 days/week; 6 fish per day, 2 adults (minimum size 12 inches); retained Chinook must have a healed adipose fin clip; release sockeye, chum, unmarked coho and unmarked Chinook. Barbed hooks allowed.
North Jetty	Open 7 days per week when Area 1 or Buoy 10 area is open. When Buoy 10 area and Area 1 are open concurrently, the daily limit and minimum size restrictions follow the most liberal regulations of those areas. Barbed hooks allowed.

Area 2: Queets River to Leadbetter Point

6/29-9/13 (7,520 marked coho sub quota)	Open Sun-Thur; 2 fish per day, only one of which may be a Chinook; retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches and coho minimum size 16 inches; Chinook guideline: 5,100. In-season management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon. Grays Harbor control zone closed beginning August 1.
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Area 2-1 (east of a line from Leadbetter Point to Cape Shoalwater): Willapa Bay

7/1-7/31	Open concurrent with Area 2, when Area 2 is open for salmon. Area 2 rules apply.
8/1-8/15	6 fish limit, 2 adults, 12" min size limit; barbed hooks allowed
8/16-1/31/2009	6 fish limit, 3 adults; no more than 2 adult Chinook; 12" min size limit; barbed hooks allowed.

Area 2-2 (east of line between tips of exposed jetties): Grays Harbor

West of Buoy 13 line 7/1– 7/31	Closed.
East of Buoy 13 line, when open	All salmon required to be released may not be totally removed from the water, except anglers fishing from boats 30' or longer as listed on either their State or Coast Guard regulation are exempt. Single-point barbless hooks required.
East of Buoy 13	Closed for salmon through 9/15.

line 7/1-9/15	
East of Buoy 13 line 9/16-10/15	2 fish per day, only 1 wild adult coho, release Chinook and chum. Minimum size 12 inches. Open only east of a line from Oleary Creek / Buoy 35 to Moon Island.
East of Buoy 13 line 10/16 – 11/30	2 fish limit, only 1 wild adult coho, release Chinook and chum. Minimum. size 12”.

Westport Boat Basin and Ocean Shores Boat Basin

8/16-1/31/2009	6 fish limit, 4 adults; 12” min size limit; barbed hooks allowed; night closure and non-buoyant lure restriction.
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Area 3: Cape Alava to Queets River

7/1-9/13 (540 coho sub quota)	Open Tues-Sat; 2 fish per day, only one of which may be a Chinook; retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches, coho minimum size 16 inches; Chinook guideline: 350. Inseason management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.
La Push Late Season Area 9/20-10/5	(50 coho sub quota; 100 Chinook sub quota) Fishery restricted to the area north of 47°50’00” N latitude and south of 48°00’00” N latitude. Open 7 days/wk. Other regulations as described above.

Area 4: U.S./Canada border to Cape Alava and east to Sekiu River

7/1-9/13 (2,060 marked coho sub quota)	Open Tuesday through Saturday; 2 fish per day, only one of which may be a Chinook. Chum non-retention during August and September. Retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches and coho minimum size 16 inches; Chinook guideline: 950; Chinook non-retention east of Bonilla-Tatoosh line beginning August 1. Closed waters: east of a true north-south line running through Sail Rock. In-season management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.
Area 4B Add-on fishery (4,000 marked coho quota)	Opens upon closure of Area 4 ocean salmon fishery through the earliest of 9/13 or coho quota. Chinook retention prior to August 1 subject to the 950 Chinook guideline in the Area 4 ocean fishery. All other regulations as described above. Closed waters: east of a true north-south line running through Sail Rock.

Area 4A: Makah Bay Treaty Evaluation Marine Set Net Fishery

Chinook	Trty	Open 8/19 through 9/15 inside an area bounded by a line running from Strawberry Rock Point (48° 19’ 07”N, 124° 40’ 00”W) to the group of rocks (48° 19’ 46”N, 124° 40’ 35”W) which are located off Hobuck Beach and a line to the mouth of Hobuck Creek (48° 19’ 54”N, 124° 39’ 37”W), to be implemented per agreement by the Makah Tribe and WDFW.
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Part II. PUGET SOUND including STRAIT OF JUAN de FUCA and SAN JUAN ISLANDS fisheries

2. Strait of Juan de Fuca Pre-terminal Areas

Areas 5, 6, 6C Treaty Troll (Ntrty net closed)

NOTE: For Area 4B: 5/1-10/31 see Ocean Troll. For 11/1-12/31 and 1/1-4/15 see below

5/1-6/17	Closed
6/18-9/30	Open for salmon, chum release; Freshwater Bay, south of Angeles Pt./ Observatory Pt. line closed; Pt. Angeles Hbr. W. of line from tip of Ediz Hook to ITT Rayonier Dock closed; Hoko Bay closed, inside the area bounded by a line from Kydaka Point to Shipwreck Point; 1,000 foot closure around stream mouths; Area 6 closed east of line true north from Green Point.
10/1-10/31	Closed
11/1-4/15	In Areas 4B, 5, 6, 6C the treaty troll fishery will be open through April 15, or when catch reaches the harvest guideline of 8500 Chinook, whichever comes first. 1,000-foot closures around stream mouths. A lower number was modeled in Chinook FRAM #2108 as per co-manager agreement; however, the fishery will be managed for the harvest guideline of 8500 Chinook.
4/16-4/30	Closed

Areas 4B, 5, & 6C Treaty Net (Ntrty net closed)

Chinook	Open for setnet gear only, 6/22 through 8/15; 7 days a week; Hoko Bay closed, inside the area bounded by a line from Kydaka Point to Shipwreck Point and Freshwater Bay, south of Angeles Pt./ Observatory Pt. line closed. 1,000-ft. closure around stream mouths.
Sockeye	Start to be determined by Fraser River Panel; end no later than 9/6.
Coho	Open for gillnets starting at 5 days per week (in-season adjustments based on cumulative catch) from the end of Fraser Panel control, through wb 9/28; 1,000 ft. closure around stream mouths. The gillnet catch number listed in FRAM #0824 will be used as management target and will not be greatly exceeded.
Chum	Open for gillnets, starting at 5 days per week (days may be added if effort is low), wb 10/05 through wb 11/9; 1,000-foot closure around stream mouths.

Area 5 Recreational

5/1-6/30	Closed
7/1-8/9	2 fish limit (Chinook 22" min size); unmarked Chinook, unmarked

	coho, and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling. Single-point barbless hooks only.
8/10-9/15	2 fish limit, Chinook, unmarked coho, and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling. Single-point barbless hooks only.
9/16-9/30	2 fish limit, Chinook and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling. Single-point barbless hooks only.
10/1-10/31	Closed
11/1-11/30	2 fish limit, 1 Chinook (Chinook 22" min size).
12/1-2/13	Closed
2/14-4/10	1 fish limit (Chinook 22" min size).
4/11-4/30	Closed
Area 6 Recreational	
5/1-6/30	Closed
7/1-8/9	2 fish limit, (Chinook 22" min size); unmarked coho, chum, and Chinook release, except W. of true N/S line through "2" buoy near tip of Ediz Hook retention of marked Chinook allowed. South of Angeles Pt./ Observatory Pt. line – closed to angling. Pt. Angeles Hbr. W. of line from tip of Ediz Hook to ITT Rayonier Dock – closed to salmon angling. Dungeness Bay closed to salmon angling. Single-point barbless hooks only.
8/10-9/30	2 fish limit; Chinook, unmarked coho, and chum release. South of Angeles Pt./Observatory Point line - closed to angling. Pt. Angeles Hbr. W. of a line from the tip of Ediz Hook to ITT Rayonier Dock – closed to salmon angling. Dungeness Bay closed to salmon angling. Single-point barbless hooks only.
10/1-10/31	2 fish limit, 1 Chinook (Chinook 22" min size). South of Angeles Pt./Observatory Point line – closed to angling. Pt. Angeles Hbr. W. of a line from the tip of Ediz Hook to ITT Rayonier Dock – closed to salmon angling. Sequim Bay south of a line from the south end of Gibson Spit to the west end of Travis Spit - closed to salmon angling. Discovery Bay south of a line from the Gardiner Boat Ramp to Beckett Point - closed to salmon angling. (see: Dungeness Bay Recreational below.) Single-point barbless hooks only.
11/1-11/30	Closed
12/1-2/13	Closed
2/14- 4/10	1 fish limit (Chinook 22" min size). Dungeness Bay closed to salmon angling.
4/11-4/30	Closed

3. Strait of Juan de Fuca Terminal Areas

Area 6D Dungeness Bay Net

Chinook	All	Closed
Coho	Trty	Open 9/21 through 11/01; additional openings possible based on in-season information; Chinook and chum release and gillnets may fish daytime only, through 10/10; 1,500 ft closure around each river mouth.
	Ntrty	Open Wk 39 (wb 9/21) through Wk 43 (wb 10/19) for skiff gillnet gear; 7AM – 7PM, 5 days each week (M-F); Chinook and chum release by cutting ensnaring meshes; 1,500 ft. (1/4 nautical mile) closure around each river mouth. Additional openings possible in wb 10/26 based on in-season information.
Chum	All	Closed

Dungeness River Treaty (Ntrty net closed)

Chinook	Trty	Closed
Coho	Trty	Fishing up to 3 days/wk, to be determined in-season, for coho only, may occur no earlier than 10/16 and will be restricted to areas below the Dungeness hatchery intake using species selective (non-gillnet) gear.
Chum	Trty	Closed

Elwha River Treaty (Ntrty net closed)

Chinook	Trty	Closed except Ceremonial Harvest of 5 fish in July.
Coho	Trty	Open 9/14 through 11/08; days per week to be determined in-season.
Chum	Trty	Closed

Dungeness Bay Recreational

5/1-9/30	Closed to salmon angling.
10/1-10/31	2 fish limit, coho only.
11/1-4/30	Closed to salmon angling.

Dungeness River Recreational

(mouth to hatchery intake pipe at RM 11.3)	10/16 - 12/31	4 fish limit, coho only; 12" min size.
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Elwha River Recreational

(mouth to Aldwell Lake Dam)	3/1 – 9/30	Closed to all fishing.
	10/1 – 2/28/2009	Trout and other game fish open.
	10/1 – 11/15	6 fish limit, coho only; no more than 4 adults; 12” min. size

Hoko River Recreational

(mouth to cement bridge (mile 7.0) on Hoko/Ozette Hwy.)	All year	Closed to salmon.
	6/1 – 3/15/2009	Trout and other game fish. (Fly fishing only 9/1 – 10/31)

All other STRAIT OF JUAN DE FUCA REGION freshwater recreational closed to salmon angling.

4. San Juan Islands/Point Roberts Area

Areas 6, 7, & 7A Net

Chinook	All	Closed
Sockeye	Trty	Schedule to be determined. The Co-managers have identified the following management actions to track and control by-catch of Chinook. Estimated by-catches are best estimates and are not quotas. The priority for this fishery is to harvest the full treaty share of sockeye salmon, while managing the fishery so as to not greatly exceed the projected incidental harvest of Chinook salmon. All Chinook by-catch in this fishery will be promptly reported by each Tribe to the NWIFC softdata system and reported to the U.S. Section of the Fraser Panel at least weekly, including take home and ceremonial and subsistence (C&S). Prior to achieving a by-catch of 4,200 Chinook there will be no restrictions on the retention or sale of Chinook salmon. If, during the season, the Fraser Panel schedules a fishery that is projected to result in a total Chinook by-catch exceeding 4,200 fish, the Tribes will, effective with that scheduled fishery, prohibit any commercial sales of Chinook salmon, and any Chinook salmon landed must be delivered to the fisher’s respective Tribe. If, during the season, the Fraser Panel schedules a fishery that is projected to result in a total Chinook by-catch exceeding 6,300 fish, the Tribes will, effective with that scheduled fishery, prohibit all retention of Chinook salmon by all fishers; unless a projection for the remainder of the 2008 sockeye fishery will not result in a total by-catch of more than 6,700 Chinook. July and August – C&S fishery. Further policy discussion may occur among the affected parties prior to the season.

	Ntrty	Schedule to be determined. Modeled for Wks 32 (wb 8/3) – 34 (wb 8/17), 1,2,1. The Co-managers have identified the following management actions to track and control by-catch. Modeled by-catches are best estimates and are not quotas. All vessel operators must complete best fishing practices certification prior to fishing. Purse seine brailing and use of recovery box required with Chinook, coho, and chum NR from 8/1 – 9/30, and reef net coho, chum, and unmarked Chinook NR from 8/1 – 9/30. Reef net fishers may retain marked Chinook, with a cap of 300 for all gears for the season. Estimates of by-catch will be shared at least weekly in the U.S. Section of the Fraser River Panel. Should the season develop as anticipated, with very limited sockeye opportunity, purse seine and gillnet fisheries will be managed to ensure that the non-treaty impact does not exceed 1,212 total Chinook (120% of pre-season estimate). Should sockeye returns allow more opportunity than expected pre-season, WDFW will consider appropriate additional steps to limit Chinook by-catch, while attempting to harvest the non-treaty share of sockeye. WDFW intends to continue a DNA sampling and analysis program to be implemented during this fishery for the purpose of estimating stock specific estimates of Chinook by-catch.
Coho	Trty	Closed
	Ntrty	Reef net: 7 days/wk beginning at end of Fraser Mgmt through chum mgmt wk 46 (wb 11/9); Chinook NR after 9/30; unmarked-coho release through 9/30, then coho non-selective. Chum retention prohibited until after 9/30. All vessel operators must complete best fishing practices certification prior to fishing.
Chum	Trty	Starting 10/10 through 11/15; fishing pattern dependent upon TAC and any relevant in-season updates.
	Ntrty	Wks 41 (wb 10/5) – Wk 46 (wb 11/9); Purse seine brailing required, Chinook and coho NR; GN Chinook and coho NR, live box, and limited soak time restrictions wk 41 and 42; fishing pattern: 1,3,5,5,5,5; dependent upon ISU and quotas. Reef nets through wk 46 (wb 11/9), 7 days per week. All vessel operators must complete best fishing practices certification prior to fishing.
Subsistence	Trty	2/1-4/15 subsistence fishery

Area 7 Recreational

5/1-6/30	Closed
7/1-7/31	2 fish limit, 1 Chinook (Chinook 22" min size); Waters of Area 7 in Rosario Strait and the eastern portion of the Strait of Juan de Fuca southerly of a line running true south from the westernmost point on Fidalgo Head to Burrows Island, then westerly and southerly along the shore of Burrows Island to the Burrows Island Lighthouse, then westerly to Bird Rocks, then westerly from Bird Rocks to the southernmost point on Decatur Island, then southerly across Lopez Pass to Lopez Island and following the shore of Lopez Island southerly and westerly to Iceberg Point, then from Iceberg Point to Cattle Point, then south southwest to the Salmon Bank Buoy, and then true south from the Salmon Bank Buoy to the Area 7 boundary, closed to salmon angling. Bellingham and Samish Bay closed to salmon angling.
8/1-9/30	2 fish limit, 1 Chinook (Chinook 22" min size), release unmarked coho, release chum; Waters of Area 7 in Rosario Strait and the eastern portion of the Strait of Juan de Fuca southerly of a line running true south from the westernmost point on Fidalgo Head to Burrows Island, then westerly and southerly along the shore of Burrows Island to the Burrows Island Lighthouse, then westerly to Bird Rocks, then westerly from Bird Rocks to the southernmost point on Decatur Island, then southerly across Lopez Pass to Lopez Island and following the shore of Lopez Island southerly and westerly to Iceberg Point, then from Iceberg Point to Cattle Point, then south southwest to the Salmon Bank Buoy, and then true south from the Salmon Bank Buoy to the Area 7 boundary, closed to salmon angling. Bellingham Bay closed to salmon angling 8/1-8/15; Samish Bay closed to salmon angling. Single point barbless hooks only.
10/1-10/31	2 fish limit, 1 Chinook; Samish Bay closed to salmon angling 10/1-10/15.
11/1-1/31	Closed
2/1-4/15	2 fish limit, (Chinook 22" min size), release unmarked Chinook, single point barbless hooks only.
4/16 - 4/30	Closed

5. Nooksack/Samish Terminal Region

Bellingham Bay (Areas 7B, 7C, 7D; 7A On-Reservation) Net

Managers agree to meet as necessary to reach agreement prior to August 1 on the Samish hatchery Chinook escapement goal and any adjustments to fishery schedules necessary to ensure that the number of Chinook reaching the hatchery meets the goal. Managers will also discuss options for in-season management.

Chinook	Trty	Areas 7B, 7C, & 7D: August 1 through September 6 (Wks 31-36), open weekly 4 PM Sunday to 4 PM Friday (except closed on 8/20 and 8/27); closed south and west of a line from Oyster Creek to the fisheries marker on Samish Island, except that hand pull gill nets may fish from 4:00 PM Sunday – 4:00 PM Wednesday south to a line from Oyster Creek to Fish Point on Samish Island; fishing pattern: 2,5,5,5,5,5. 6 ½" mesh in 7B, off reservation areas and 7C except when open for sockeye in 7 and 7A. Areas 7B and 7D on reservation: July 27 through September 6 (Wks 31-36) open Sunday 4 PM through Saturday 4 PM, fishing pattern: 2,6,6,6,6,6.
	Ntrty	Areas 7B & 7C: Wks 33 (wb 8/10)-Wk 36 (wb 8/31); GN pattern beginning wk 33: 1,3,3,3 (GN will not be scheduled for Sundays Wks 34-36) PS pattern beginning wk 34: 1,1,1, brailing required; PS coho NR.
Coho		Areas 7B, 7C: September 7 through October 25 (Wks 37-43), open Sunday 4 PM – Saturday 4 PM. 6,6,6,6,6,6,6.
		Areas 7B and 7D on reservation: September 7 through October 25 (Wks 37-43), open Sunday 4 PM – Saturday 4 PM. 6,6,6,6,6,6,6.
	Trty	7A on reservation fishery: September 21 through October 18 (Wks 39-42). Open weekly 4 PM Sunday through 4 PM Wednesday.
	Ntrty	Area 7B: Wks 37 (wb 9/7)-Wk 43 (wb 10/19); GN fishing pattern: 3,3,7,7,7,7,7 (24 hrs for all days); PS fishing pattern: 1,3,7,7,7,7,7.
Chum	Trty	Areas 7B, 7C, & 7D: October 26 – December 15 (Wks 44-51); open 3 days/wk. 3,3,3,3,3,3,2

	Ntrty	Area 7B: Wks 44 (wb 10/26)-Wk 49 (wb 11/30); PS/GN; 7,5,5,5,5,5. Whatcom Creek Zone (east of line from Post Point to flashing red light at west entrance of Squalicum Harbor) open 7 days per week.
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Nooksack River Treaty Net (Ntrty net closed)

NOTE: Nooksack River Tribal commercial fishery openings will be 00:01 a.m. (Lummi openings at 4:00 p.m.) and will close at 4:00 p.m. (concurrent with Lummi), on a weekly basis.

Chinook	April 1 – May 31	April and May limited ceremonial and subsistence Chinook harvest as required. Harvest will not exceed 80 total (expected 9 NOR) Chinook. The fishery will occur in the north fork between the railroad trestle just down river from the Highway 9 bridge and the mouth of Racehorse Creek (RM 36.6 to 45.2) and the Nooksack River between Slater Road bridge and the river mouth (between RM 0.0 and 3.5).
	7/27-9/6 (wks 31-36)	Open 4 PM Sunday and close 4 PM Saturday, except wk 32 open Sunday 4 PM to Wednesday 4 PM. Fishing pattern: 6,6,6,6,6,6. The river is divided into five zones during this period. These zones open on subsequent weeks, proceeding upriver, to protect migrating spring Chinook.
Coho	9/7 - 11/1 (wks 37-44)	Open Sunday 4 PM through Saturday 4 PM; 6 days/wk. 6,6,6,6,6,6,6
Chum	11/20-21	Subsistence harvest
	11/2 – 12/15 (Wks 45-51);	Commercial. Open 3 days/wk. 3,3,3,3,3,3,3.

Bellingham Bay Terminal Area Recreational

5/1-8/15	Closed to salmon angling.
8/16-10/31	4 fish limit, 2 Chinook (Chinook 22" min size); Samish Bay closed to salmon angling thru 10/15.
11/1-4/15	Same as Area 7.
4/16-4/30	Closed to salmon angling.

Nooksack River Recreational; mainstem and North Fork

(from Lummi Indian Reservation boundary to yellow marker at the FFA high school barn in Deming)	9/1 – 12/31	2 fish limit, 12" min size, release unmarked Chinook and unmarked coho. All species-night closure and non-buoyant lure restriction 8/1-11/30.
(from yellow marker at the FFA high school barn in Deming to confluence of North and South forks)	10/16 – 12/31	2 fish limit, 12" min size, release Chinook and unmarked coho. All species-night closure and non-buoyant lure restriction 10/1-11/30.
(from confluence of North and South forks to Maple Creek on North Fork)	10/1 – 10/31	2 fish limit, 12" min size, release Chinook and unmarked coho. All species-night closure and non-buoyant lure restriction 8/1-11/30.

Nooksack River Recreational, South Fork

(from mouth to Skookum Creek)	10/16 – 12/31	2 fish limit, 12" min size, release Chinook and unmarked coho. All species-selective gear rules 6/1–2/28, and night closure 8/1-10/31. The water from Saxon Road Bridge to Skookum Creek closed to all fishing from 7/1 – 10/16.
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Samish River Recreational

(from mouth to Thomas Rd. Bridge)	7/1 – 12/31	2 fish limit, 12" min size. All species-night closure and non-buoyant lure restriction 8/1-12/31.
(from Thomas Rd. Bridge to I-5 Bridge)	10/1 – 12/31	2 fish limit, 12" min size. All species-night closure and non-buoyant lure restriction 8/1-12/31.

Dakota Creek Recreational

(mouth to Giles Road Bridge)	10/1 – 12/31	2 fish limit, 12" min size.
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Whatcom Creek Recreational

(mouth to yellow markers below foot bridge below Dupont St. in Bellingham)	8/1 – 12/31	6 fish/2 adult limit, 12” min size. All Species – night closure and non-buoyant lure restriction 8/1-12/31.
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All other NOOKSACK/SAMISH TERMINAL REGION freshwater recreational: Closed to salmon angling.

6. Skagit Terminal Region

Skagit Bay (Area 8) Net

Note: Fishing schedules for Skagit Bay and Skagit River are pre-season projections. Schedules may be changed in-season as necessary to meet management objectives.

Chinook	Area 8	Closed
Sockeye	Area 8	<u>Swinomish</u> fishing pattern: wk 19 (wb 5/4), wks 26 – 31 (wb 6/22 – wb 7/27); 1,3,3,2,2,1,1. <u>Upper Skagit</u> fishing pattern: Will not open for Stillaguamish Chinook conservation issues.
	Ntrty	Closed
Coho	Trty	Terminal Treaty HR target 12.5%. If ISU changes abundance status, HR may be modified following co-manager discussions.
	Area 8	<u>Swinomish</u> fishing pattern: wks 39 - 41 (wb 9/21-wb 10/5); 2,2,2. <u>Upper Skagit</u> fishing pattern: wks 40 - 42 (wb 9/28 – wb 10/12); 2.167,2.167,2.167.
	Ntrty	Closed
Chum Test	Area 8	1 boat at Jetty 1 day/wk 44 (wb 10/26) & 45 (wb 11/2) and 1 boat in Bay 1 day/wk 44 (wb 10/26)& 45 (wb 11/2).
Chum	Treaty	<u>Swinomish</u> fishing pattern: wk 44 (wb 10/26);1. <u>Upper Skagit</u> fishing pattern: wk 45 (wb 11/2);1.167.
	Ntrty	Wk 45 (wb 11/2) through wk 48 (wb 11/23) GN 3,3,3,3 (daylight hours); and PS 1,1,1,1.

Skagit River Treaty Net (Ntrty net closed)

Chinook	Areas 78C and 78D	<p>Ceremonial and Subsistence – 850 fish total Swinomish, Sauk-Suiattle, and Upper Skagit Tribes.</p> <p>Upper Skagit fishing pattern: wks 30 – 31 (wb 7/20-wb 7/27);1.167,1.167.</p>
Sockeye	<p><u>In-season management measures, and monitoring actions, will be conducted according to the document, “Baker Sockeye Fishery Guidelines and Responses.”</u></p>	
	Area 78C:	<p><u>Swinomish</u> fishing pattern: wk 19 (wb 5/4), wks 26-31, (wb 6/22-wb 7/27); 1,3,3,2,2,1,1. <u>Sauk-Suiattle</u> fishing pattern: wk 19 (wb 5/4), wks 26 – 31, (wb 6/22 – wb 7/27); 1,3,3,2,2,1,1 <u>Upper Skagit</u> fishing pattern: wks 19-21 (wb 5/4 – wb 5/18), 27-28 (wb 6/29-wb 7/6); 1.1,1.1,1.1,2.167,2.167.</p>
	Area 78D	<p><u>Upper Skagit:</u> fishing pattern: wks 19-21 (wb 5/4-wb 5/18), 27-28 (wb 6/29-wb 7/6); 1.1,1.1,1.1,2.167, 2.167.</p>
Coho	<p>Terminal Treaty HR target 12.5%. If ISU changes abundance status, HR may be modified following co-manager discussions.</p>	
	Area 78C:	<p><u>Swinomish</u> fishing pattern: wks 39-41 (wb 9/21 – wb 10/5); 2,2,2. <u>Sauk-Suiattle</u> fishing pattern: wks 39-41 (wb 9/21 – wb 10/5); 2,2,2. <u>Upper Skagit</u> fishing pattern: wks 40-42 (wb 9/28 – wb 10/12); 2.167,2.167,2.167.</p>
	Area 78D	<p><u>Upper Skagit</u> fishing pattern: wks 40-42 (wb 9/28 – wb 10/12); 2.167,2.167,2.167.</p>
Chum	Area 78C	<p><u>Swinomish</u> fishing pattern: wk 44 (wb 10/26); 1. <u>Sauk-Suiattle</u> fishing pattern: wk 44 (wb 10/26); 1. <u>Upper Skagit</u> fishing pattern: wk 45 (wb 11/2);1.167.</p>
	78D	<p><u>Upper Skagit</u> fishing pattern: wk 45 (wb 11/2); 1.167.</p>
River Test	Chinook	<p>(Blakes) Wk 19 (wb 5/4)-wk 35 (wb 8/24); 1 boat, 6 hours/wk.</p>
	Sockeye	<p>Three locations, 2 hrs each location, one day/week; wks 20-30, Chinook retention – may release if over projection.</p>

	Coho	(Blakes & Spudhouse) wk 34 (wb 8/17)- wk 45 (wb 11/2); 2 boats, 12 hours/wk; River Area 2 (78D) wk 35 (wb 8/24) – wk 44 (wb 10/26); 2 setnets, 24 hours/wk.
	Chum	One boat at Blakes 1 day/wk 44 (wb 10/26) and wk 45 (wb 11/2).

Swinomish Channel Treaty Net (Ntrty net closed)

	Coho	No separate openings. Area opens during Area 8 openings.
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Area 8-1 Recreational

5/1-7/31	Closed
8/1-9/30	2 fish limit, Chinook release.
10/1- 10/31	Closed, except Oak Harbor open, 2 coho only limit.
11/1- 12/31	Closed.
1/1 – 4/30	2 fish limit, Chinook 22” min size, release unmarked Chinook. Single-point barbless hooks only. Season may close early if guidelines are expected to be exceeded (see attached Area 8-1/8-2 Plan). Total encounters of legal-sized Chinook will be estimated through a monitoring and sampling program (2008 8.1/8.2 MSF Mgt Plan). If at any time during the fishery total legal size encounters estimated from this program exceed the pre-season forecast level of 2,892 Chinook (FRAM #2108), the parties will consider modification to the fishing to ensure total encounters for the entire season to not exceed the pre-season forecast level by more than 10%.

Baker River/Lake Recreational

(mouth to Hwy 20 Bridge)	6/14 – 7/31*	2 fish limit, sockeye only, 12” min size. *Closed from 12:01 AM 6/30 through 2:00 PM 7/2 and from 12:01 AM 7/9 through 2:00 PM 7/11.
From Hwy 20 Bridge upstream to Dam	6/14 – 7/31	2 fish limit, sockeye only, 12” min size.
Baker Lake	July - August	Dependent on ISU. Potential fishery starting date to be determined. 2 fish limit, sockeye only, 12” min. size.

Cascade River Recreational

(mouth to Rockport-Cascade Road Bridge)	6/1 – 7/15	4 fish limit, only 2 may be adults, marked Chinook only, 12” min. size. Co-managers will consult on harvest guidelines and fishery may close early.
	9/16 – 11/30	4 fish limit, coho only, 12” min size.

Skagit River Recreational

(mouth to Memorial Hwy. Bridge (Hwy 536 at Mt. Vernon))	9/1 – 12/31	2 fish limit, 12" min size, release Chinook.
(From Memorial Hwy Bridge to Gilligan Creek)	9/1 – 12/31	2 fish limit, 12" min size, release Chinook.
(From Gilligan Creek to Dalles Bridge at Concrete)	9/16 – 12/31	2 fish limit, 12" min size, release Chinook. All Species – night closure and non-buoyant lure restriction 7/1 - 11/30.
(From Dalles Bridge at Concrete to Cascade River)	6/1-7/15	4 marked Chinook, only 2 may be adults, 12" min size, open only from Highway 530 bridge at Rockport to Cascade River. All species – night closure and non-buoyant lure restriction. Co-managers will consult on harvest guidelines and fishery may close early.
	6/14 – 7/31	2 fish limit, sockeye only; 12" min size; open only downstream of a point 200' above the E. bank of the Baker River. All species-night closure and non-buoyant lure restriction 7/1-11/30. Closed from 12:01 AM 6/30 through 2:00 PM 7/2 and from 12:01 AM 7/9 through 2:00 PM 7/11.
	9/16 – 12/31	2 fish limit, 12" min size, release Chinook. All species – night closure and non-buoyant lure restriction 7/1 through 11/30.
	6/1-6/13 and 8/1-8/31	Closed waters – between a line projected across the thread of the river 200' above the east bank of the Baker River and a line projected across the thread of the river 200' below the west bank of the Baker River.

All other SKAGIT TERMINAL REGION freshwater recreational closed to salmon angling.

7. Stillaguamish/Snohomish Terminal Region

Area 8A Net

Chinook	Trty	Closed (Ceremonial set-aside of up to 100 Chinook, July-September period).
	Ntrty	Closed

Coho	Trty	Wks 35 (wb 8/24)-Wk 36 (wb 8/31); Pilot Fishery max 10 GN, 5 RH/wk (RH rel chin); Wks 37 (wb 9/7) – Wk 42 (wb 10/12); 3 days per week, 15 GN, 10 RH fleet expected. Update fishery weeks 38-40. Manage for CCMP breakpoints and rates.
	Test	Wk 37 – wk 42; 1 day per week, 2 GN landings per week.
	Ntrty PS	Wks 40-41 (wb 9/28 – wb 10/5): PS limited participation (2 boats per day): Chinook NR, fishing pattern: 1,1. PS limited to area north of a line from the Clinton ferry dock to the Mukilteo ferry dock during Wk 40. Wk 42: PS full fleet; Chinook NR, fishing pattern: 1.
	Ntrty GN	Wks 41 - 42 (wb 10/5 – wb 10/12) GN fishing pattern: 1,3; GN fish night hours Wk 41.
Chum	Trty	Wks 43 (wb 10/19) - Wk 48 (wb 11/23); expected 3 days per week; manage for Stillaguamish and Snohomish harvest rates and minimum escapement goals based on in-season update. Regional management plan to be developed by September 30, 2008.
	Test	Wks 43 – Wk 48, 1 day per week, 2 GN landings per week.
	Ntrty	Wks 43 (wb 10/19)-Wk 48 (wb 11/23); PS Chinook NR; PS fishing pattern: 1,2,1,2,1,2; GN fishing pattern: 3,3,3,3,3,3 daylight hours.
Area 8D Net		
Chinook	Trty	BS, RH, GN gear outside Tulalip Bay may be open during the following periods: 5/4 – 6/14 12:01 AM Sun – 11:59 PM Sat 6/15 – 9/1 12:01 PM Mon – 11:59 PM Thu 9/2 – 9/20 12:01 AM Mon – 11:59 PM Fri Setnets inside Tulalip Bay may be open during the following periods: 5/4 – 9/20 12:01 AM Sun – 11:59 PM Sat Openings will be approx. 3 days/week for each gear.
	Ntrty	Closed (see recreational SAF)
Coho	Trty	Wk 39 (wb 9/21) – Wk 45 (wb 11/2); open to target Tulalip hatchery coho.

	Ntrty	Wk 39 (wb 9/21)-Wk 45 (wb 11/2); PS Chinook NR; PS fishing pattern: 1,1,1,1,1,2,1; GN fish at night Wks 39-41 then daylight Wks 42 - 45; GN fishing pattern: 3,3,3,2,2,2,2. Closed east of the line from Mission Point to Hermosa Point.
Chum	Trty	Wk 46 (wb 11/9) - Wk 52 (wb 12/21); open to target Tulalip hatchery chum. Managed to allow for hatchery egg take needs based on Tulalip hatchery escapement updates and projections. All Area 8D fisheries will close concurrently as agreed to by regional co-managers to ensure egg take requirements are met.
	Ntrty	Wks 46 (wb 11/9)-Wk 48 (wb 11/23); PS fishing pattern: 2,1,2; GN fishing pattern: 2,2,2 daylight hours. Closed east of the line from Mission Point to Hermosa Point. Managed to allow for hatchery egg take needs based on Tulalip hatchery escapement updates and projections. All Area 8D fisheries will close concurrently as agreed to by co-managers as necessary to ensure egg take requirements are met. PS open concurrent with Ntrty 8A.

Stillaguamish River Treaty Net (Ntrty net closed)

Chinook	Closed
Coho	Open Wk 39 (wb 9/21) - Wk 43 (wb 10/19); max 5 days per week.
Chum	Wks 44 (wb 10/26)-Wk 52 (wb 12/21); 5 days per week.

Snohomish River Treaty Net (Ntrty net closed)

Chinook, Pink, Coho, Chum	Closed
Coho Test	Closed

Area 8-2 Recreational

5/1-7/31	Closed
8/1-9/30	2 fish limit, Chinook release.
10/1 – 10/31	Closed north of a line due east from Randall Point, daily limit 2, release Chinook.
11/1 – 12/31	Closed

1/1 - 4/30	2 fish limit, Chinook 22" min size, release unmarked Chinook. Single-point barbless hooks only. Season may close early if guidelines are expected to be exceeded (see attached Area 8-1/8-2 Plan). Total encounters of legal-sized Chinook will be estimated through a monitoring and sampling program (2008 8.1/8.2 MSF Mgt Plan). If at any time during the fishery total legal size encounters estimated from this program exceed the pre-season forecast level of 2,892 Chinook (FRAM #2108), the parties will consider modification to the fishing to ensure total encounters for the entire season to not exceed the pre-season forecast level by more than 10%.
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Tulalip Special Area Recreational Fishery

Same as Area 8-2 Recreational, except during the period 6/15-9/28:	6/15-9/1	Open 12:01 AM Friday – 11:59 AM Monday each week. Open within Tulalip Special Area boundaries only. Closed to all angling east of the line from Mission Point to Hermosa Point. 2 fish limit salmon (Chinook 22" min. size).
	9/2-9/28	Open Saturday and Sunday each week. Open within Tulalip Special Area boundaries only. Closed to all angling east of the line from Mission Point to Hermosa Point. 2 fish limit salmon (Chinook 22" min. size).

Snohomish River Recreational

(mouth to confluence of Skykomish and Snoqualmie rivers, including all channels)	9/1 – 12/31	2 fish limit, 12" min. size, release Chinook and pink. All species – night closure and non-buoyant lure restriction 8/1 – 11/30.
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Snoqualmie River Recreational

(mouth to Snoqualmie Falls, including all channels)	9/1 – 12/31	2 fish limit, 12" min size, release Chinook and pink salmon. All species- selective gear rules 6/1-11/30, except motors allowed; night closure 9/1-11/30. Closed waters – within Puget Power tunnels at falls, and within 50' of any point on Puget Power's lower Plant building #2 (north bank).
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Skykomish River Recreational

(From mouth to Lewis St. Bridge in Monroe)	9/1 – 12/31	2 fish limit. 12” min size, release Chinook and pink. Fishing from any floating device prohibited 11/1-2/28 from the boat ramp below Lewis Street Bridge at Monroe to 2500’ downstream. All species - night closure and non-buoyant lure restriction 8/1-11/30.
(From Lewis St. Bridge in Monroe to Wallace River)	6/1 – 7/31	2 fish limit, 12” min size, marked Chinook only. All species - night closure and non-buoyant lure restriction 6/1-11/30. Managed for hatchery broodstock. Evaluation by co-managers by June 30 about possibility of earlier fishery closure.
	9/1 – 12/31	2 fish limit, 12” min size, release Chinook and pink. All species - night closure and non-buoyant lure restriction through 11/30.
(From Wallace River to the forks)	9/1 – 12/31	2 fish limit, 12” min size, release Chinook and pink. All species – night closure and non-buoyant lure restriction 8/1–11/30. Closed waters – from 1500’ upstream to 1000’ downstream of Reiter Ponds outlet 6/1 to 8:00 a.m. 8/1 and within this 2,500’ section, fishing from any floating device within this area prohibited 8:00 AM 8/1-2/28.

Wallace River Recreational

Mouth to 363rd Avenue SE/Reese Rd	9/1 – 11/30	2 fish limit for coho only, 12” min size. Fishing from any floating device prohibited 11/1-2/28.
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Stillaguamish River Recreational

(river and all sloughs downstream of Marine Drive)	11/1 – 12/31	2 fish limit, 12” min size, release Chinook and pink. All species-night closure and non-buoyant lure restriction 8/1-11/30.
(Marine Drive upstream to forks)	11/1 - 12/31	2 fish limit, 12” min size, release Chinook and pink. All Species-night closure 8/1-11/30 and selective gear rules except motors allowed 6/1-11/30. Closed waters – from water control structure/barrier dam (downstream of I-5) 200’ downstream.

All other STILLAGUAMISH/SNOHOMISH TERMINAL REGION freshwater recreational closed to salmon angling.

8. Admiralty Inlet Area

Area 9 Net

Chinook	Trty	Ceremonial and Subsistence – Up to 700 Chinook as agreed upon by those Tribes with U &A in Area 9, (PS and Hook & Line, release all chum 8/1 – 9/30).
Chum	Research	Wk 43–Wk 47 research fishery to develop stock composition/timing information. Research catch quota of 1,200 chum. Details of research program based on agreement developed in 2005.
Chum	Trty	A limited area and effort Tribal chum fishery may occur in the vicinity of Apple Cove Point and North of The Hood Canal Bridge with a maximum catch of 30,000 chum. Chinook, steelhead, and coho NR in purse seine gear. Fishery pending agreement by all affected tribes and the State. Fishery will be structured so as not to exceed modeled Chinook and coho impacts.
	Ntrty	Closed

Area 9 Recreational

5/1-7/15	Closed
7/16-8/15	2 fish limit; Chinook 22" min size, release unmarked Chinook, unmarked coho, and chum. Single-point barbless hooks only. 7000 Chinook quota for Areas 9/10 with a guideline of 4000 in Area 9. Closed south and west of a line from Foulweather Bluff to Olele Point.
8/16-9/15	2 fish limit, release Chinook, chum, and unmarked coho. Single-point barbless hooks only.
9/16-9/30	2 fish limit, release Chinook and chum.
10/1-10/31	2 fish limit, release Chinook
11/1-11/30	2 fish limit, release unmarked Chinook (Chinook 22" min size). Single-point barbless hooks only.
12/1-1/15	Closed
1/16-4/15	2 fish limit, Chinook 22" min size, release unmarked Chinook. Single-point barbless hooks only.
4/16 – 4/30	Closed

Edmonds Pier Recreational

Year-Round	2 fish limit, 1 Chinook (22" min size), release chum 8/1-9/30.
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9. South Sound Region

9.1 Area 10 subregion

Area 10 Net

Chinook		Closed
Sockeye	Trty	Fishery dependent upon ISU (Ballard lock counts)
	Ntrty	Closed
Coho	Test	Gillnet: Wks 37 (wb 9/7)-Wk 39 (wb 9/21); 3 boats, 3 sites; fishing pattern: 2,2,2
	Trty	Fishery based on ISU beginning Wk 37. Treaty allocation based on intertribal sharing agreement. Fishing schedule for Area 10 shall be set consistent with the MST agreement (1983).
	Ntrty	Closed
Chum	Test	Purse Seine: Wks 41 (wb 10/5)-Wk 46 (wb 11/9); 1 site, fishing pattern: 1,1,1,1,1,1.
	Trty	Treaty allocation based on intertribal sharing agreement; Wks 41 (wb 10/5) – Wk 48 (wb 11/23) fishing pattern – ISU dependent; Fishing schedule for Area 10 shall be set consistent with the MST agreement (1983).
	Ntrty	Wks 43 (wb 10/19) - 48 (wb 11/23); PS Chinook and coho NR; PS fishing pattern: 1,2,1,2,1,1; GN fishing pattern: 2,2,2,2,2,2. ISU Dependent.

Area 10A Treaty Net (Ntrty net closed; see below for recreational SAF)

Chinook	Test	Gillnet: Wks 29-31, 7/16, 7/23, 7/30; 5 sites (Wednesday nights, if possible).
	Trty	Wks 32-34, 1 day/wk. Reference terminal management plan. 8/6, 8/13, 8/20.
Coho		Wks 36 (wb 8/31)-Wk 44 (wb 10/26); Weeks 36 & 37, 5 days/wk. Starting Week 38; fishing pattern: reference 80B Coho Schedule.
Chum		Wks 45 (wb 11/2)-Wk 48 (wb 11/23); fishing pattern to be determined.

Duwamish/Green River (Area 80B) Treaty Net (Ntrty net closed)

Chinook	Wk 32 – 34	1 day/wk. Reference terminal management plan. 8/6, 8/13, 8/20.
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Coho	Wk 37 – Wk 44	Closed until Chinook clear or coho predominate. Clearance fishery on lower river (up to 16 th Avenue Bridge) begins 9/11; (6 sites); Fishing Pattern: If Chinook clearance is met or coho predominate, fishery will open Sept 14 and be open continuous through Oct. 3; starting Sept. 21, fishery will open up to Hwy 99 Bridge. Starting Oct 5, fishery will open up to Hwy 167 Bridge and will revert back to 5 days/wk.
Chum	Wks 45 (wb11/2)-Wk 48 (wb 11/23)	fishing pattern to be determined

Area 10E Treaty Net (Ntrty net closed; see below for recreational SAF)

Chinook	Wks 30 (wb 7/20)-Wk 38 (wb 9/14); fishing pattern: 7days/wk. Possible extension for Sinclair Inlet
Coho	On-Reservation only; Wks 38 (wb 9/14)-Wk 43 (wb 10/19); setnet/beach seine; 7 days/wk.
Chum	Wks 43 (wb 10/19)-Wk 50 (wb 12/7); schedule dependent upon ISU.

Lake Washington System (includes lake, ship canal, & Lake Sammamish)

Areas 10F, 10G, 10C, 10D Treaty Net (Ntrty net closed)

Sockeye	Dependent upon ISU (lock counts). Potential fishery beginning Wk 28 (7/6).						
Chinook	10C closed; 10F and 10G to be determined pending NOAA Fisheries Agreement; reference Terminal Management Plan; 10D will be based on ISU (lock counts)						
Coho	The coho fisheries in the four following areas are dependent upon the ISU (if lock counts project run size < 10,000 coho entering the lake, then no coho fishery):						
	<table border="1"> <tr> <td>Lower ship canal (below Ballard Locks)</td> <td>Closed until Chinook clearance as seen in lock counts; anticipated pattern 5-7 days/wk dependent on in-season information, with a potential start date for fisheries beginning Wk 38 (9/14).</td> </tr> <tr> <td>Upper ship canal (above Ballard Locks):</td> <td>Species composition test fishery in mid September, 3 sites, or Chinook clearance as seen in lock counts: fishing pattern 5 days/wk.</td> </tr> <tr> <td>North end Lake Washington (North of Hwy. 520 bridge):</td> <td>Species composition test fishery in mid-September (7 sites) or limited commercial fishery: fishing pattern 5 days/wk.</td> </tr> </table>	Lower ship canal (below Ballard Locks)	Closed until Chinook clearance as seen in lock counts; anticipated pattern 5-7 days/wk dependent on in-season information, with a potential start date for fisheries beginning Wk 38 (9/14).	Upper ship canal (above Ballard Locks):	Species composition test fishery in mid September, 3 sites, or Chinook clearance as seen in lock counts: fishing pattern 5 days/wk.	North end Lake Washington (North of Hwy. 520 bridge):	Species composition test fishery in mid-September (7 sites) or limited commercial fishery: fishing pattern 5 days/wk.
Lower ship canal (below Ballard Locks)	Closed until Chinook clearance as seen in lock counts; anticipated pattern 5-7 days/wk dependent on in-season information, with a potential start date for fisheries beginning Wk 38 (9/14).						
Upper ship canal (above Ballard Locks):	Species composition test fishery in mid September, 3 sites, or Chinook clearance as seen in lock counts: fishing pattern 5 days/wk.						
North end Lake Washington (North of Hwy. 520 bridge):	Species composition test fishery in mid-September (7 sites) or limited commercial fishery: fishing pattern 5 days/wk.						

Lake Sammamish Treaty Net

Chinook and Coho	Fisheries will be based on ISU from the Ballard Lock counts.
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Area 10 Recreational

5/1-5/31	Closed
6/1-6/30	Catch-and-release in waters N of Meadow Pt./Pt. Monroe line.
7/1-7/15	2 fish limit, Chinook release.
7/16-8/15	2 fish limit; Chinook 22" min size, release unmarked Chinook and release chum after 8/1. Single-point barbless hooks only. 7000 Chinook quota for Areas 9/10 with a guideline of 3000 in Area 10.
8/16-10/15	2 fish limit; release Chinook and release chum through 9/15.
10/16-11/30	2 fish limit, 1 Chinook, (Chinook 22" min size).
12/1-1/31	2 fish limit, release unmarked Chinook (Chinook 22" min size). Single-point barbless hooks only.
2/1-4/30	Closed
	Shilshole Bay (East of Meadow Point/West Point line) closed 7/1-8/31.
	Outer Elliott Bay (E of West Pt./Alki Pt line to Pier 91/Duwamish Head line) Closed to salmon angling 7/1-8/26.
	Inner Elliott Bay (E of Pier 91/Duwamish Head line) closed to salmon angling 7/1-8/26 except for indicated openings identified in "Elliott Bay Recreational" section below. Elliott Bay fishing piers open; see below.
	Special gear restrictions in Duwamish Waterways area when open.

Area 10 Piers Recreational

Seacrest Pier, Pier 86, Waterman Pier, Bremerton Boardwalk, Illahee State Park Pier	Year-Round	2 fish limit, 1 Chinook (22" min size), release chum 8/1-9/15.
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Elliott Bay Recreational SAF

5/1 – 6/30	Same as Area 10
7/1 – 7/3	Closed
7/4-8/25	Open E of Pier 91/Duwamish Head line, weekly 12:01 AM. Friday through 11:59 PM. Monday, 7/4–8/25. 2 fish limit, release chum 8/1-8/25. Special gear restrictions in Duwamish Waterways area when open.
8/26	Closed

8/27-4/30	Same as Area 10.
Sinclair Inlet Recreational SAF	
5/1-6/30	Same regulations as Area 10.
7/1-9/30	Open S of Manette Bridge, S of line drawn true W from Battle Point, and W of line drawn true S from Point White; 2 fish limit (Chinook 22" min size), release chum 8/1-9/15.
10/1-4/30	Same regulations as Area 10.

Green River Recreational		
(1 st Avenue Bridge to old highway 99/Tukwila Intl. Boulevard)	9/16 – 12/31	6 fish/3 adult limit, 12" min size, release Chinook. All species-night closure and non-buoyant lure restriction Sept. 1-Nov. 30. Fishing from any floating device prohibited 11/1-2/15.
(old highway 99/Tukwila Intl. Boulevard to I-405)	9/1 – 12/31	6 fish/3 adult limit, 12" min size, only 1 Chinook. All species-night closure and non-buoyant lure restriction Sept. 1-Nov. 30. Fishing from any floating device prohibited 11/1-2/15.
(I-405 to the S. 277 th Bridge in Auburn)	10/1 – 12/31	6 fish/3 adult limit, 12" min size, release Chinook. All species-night closure and non-buoyant lure restriction 10/1-11/30. Fishing from any floating device prohibited 11/1-2/15.
(S. 277 th Bridge to Auburn-Black Diamond Rd Bridge)	10/16 – 12/31	6 fish/3 adult limit, 12" min size, release Chinook. All species-night closure and non-buoyant lure restriction 10/16-11/30. Fishing from any floating device prohibited 11/1-2/28.
(from Auburn-Black Diamond Rd Bridge to Tacoma Headworks Dam)	11/1 – 12/31	2 fish limit, 12" min size, chum only. All species-night closure and non-buoyant lure restriction 8/1-11/30. Closed waters- within 150' of the Palmer Ponds outlet rack and within 150' of the mouth of Keta (Crisp) Creek.

The 2008/2009 WDFW sport pamphlet will reflect the following season end dates for trout and other game fish fall/winter season. These end dates are subject to change based on State-Tribal agreement:

	Mouth to S. 277 th Bridge in Auburn: Feb. 15
	S. 277 th Bridge to Tacoma Headworks Dam: Feb. 28

Soos Creek Recreational		
(mouth to bridge near hatchery residence)	10/16 – 11/30	2 fish limit, 12" min size, coho only. Juvenile anglers (under 15 years old) only, 1 single point hook; night closure through 10/31

Lake Washington Recreational		
East of the Montlake Bridge	July-August	Dependent upon ISU (lock counts). Potential fishery, starting date to be determined. 2 fish limit, sockeye only, 12" min. size.

North of Hwy 520 Bridge	TBD	Dependent upon ISU (lock counts), Co-manager and NOAA Agreement. Potential Chinook fishery, starting date to be determined.
North of Hwy 520 Bridge	9/16 – 10/31	4 fish limit, coho only, 12" min size

Lake Sammamish Recreational

8/16 – 11/30	4 fish limit, only 2 chinook, 12" min size, release sockeye. Closed: waters within 100 yards of the mouth of Issaquah Creek are closed to salmon fishing.
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All other SOUTH SOUND AREA 10 REGION freshwater: Closed to salmon angling.

9.2 Area 11 Subregion

Area 11 Net

Chinook	All	Closed
Coho	Trty:	Commercial fishery open beginning Wks 37 (wb 9/7)- Wk 41 (wb 10/5); ISU dependent; gillnets 7 days/wk, could close any time. Beach seine daylight hours only, 7 days/wk.
	Ntrty:	Closed
Chum	Trty:	Commercial fishery open Wks 42 (wb 10/12)-Wk 49 (wb 11/30); gillnets 7 nights/wk, could close at anytime. Beach seine daylight hours only, 7 days/wk.
	Ntrty	Wks 43 (wb 10/19) - 48 (wb 11/23); PS Chinook and coho NR; PS fishing pattern: 1,2,1,2,1,1; GN fishing pattern: 2,2,2,2,2. ISU dependent.

Area 11A Net Treaty Net (Ntrty net closed)

Chinook	Closed
Coho	Commercial fishery open Wks 37 (wb 9/7)-Wk 42 (wb 10/12); 3 nights/wk
Chum	Commercial fishery open Wks 46 (wb 11/9)- Wk 53 (wb 12/28) 3 nights/wk.

Puyallup River (Area 81B) Treaty Net (Ntrty net closed)

Chinook	Test Fishery:	Wks 30 (wb 7/20)-Wk 33 (wb 8/10); 1 day/wk, drift net only.
	Commercial fishery	Closed.
Coho	Commercial fishery Wks 36 (wb 8/31)-Wk 42 (wb 10/12) fishing pattern: 0.5,2,2,3,4,4,4.	

Chum	Test fishery Wks 43 (wb 10/19)-Wk 46 (wb 11/09) 1 day/wk, drift net only.
Winter Chum	Commercial fishery Wks 46 (wb 11/09) – Wk 53 (wb 12/28) total days yet to be determined in steelhead management plan.

White River Treaty Net

Sp. Chinook	Ceremonial and subsistence fisheries.
Coho/Chum	Ceremonial and subsistence fisheries.

Area 11 Recreational

5/1-5/31	Closed
6/1-6/30	2 fish limit (Chinook 22" min. size), release unmarked Chinook; Single-point barbless hooks only. Commencement Bay (E. of Cliff House Restaurant/Sperry Ocean Dock line) closed to salmon angling.
7/1-9/30	2 fish limit (Chinook 22" min. size), release unmarked Chinook; Single-point barbless hooks only. Commencement Bay (E. of Cliff House Restaurant/Sperry Ocean Dock line) closed to salmon angling through 7/31.
10/1-10/31	2 fish limit, (Chinook 22" min size).
11/1-12/31	2 fish limit, 1 Chinook (Chinook 22" min size).
1/1-2/13	Closed
2/14-4/10	1 fish limit (Chinook 22" min size).
4/11-4/30	Closed
Dash Point Dock, Point Defiance Boathouse Dock, Les Davis Pier, Des Moines Pier and Redondo Pier	Year-Round 2 fish limit, 1 Chinook (22" min size).

Puyallup River Recreational:

(from 11th St. Bridge to Carbon River)	8/16 – 12/31	6 fish/2 adult limit, 12" min size, release unmarked adult Chinook. All species – single point barbless hooks required 8/1-11/30.
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Carbon River Recreational

(mouth to Voight Creek)	9/1 – 11/30	6 fish/4 adult limit, no more than 2 adult Chinook; 12" min size, release unmarked adult Chinook, and release chum. All species night closure, non-buoyant lure restriction, and single point barbless hooks 8/1-11/30.
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All other SOUTH SOUND AREA 11 REGION freshwater recreational Closed to salmon angling

9.3 Area 13 Subregion

Fox Island/Ketron Island (Area 13)

Chinook	Treaty:	8/1-9/15, 7 days/wk
	Ntrty:	Closed
Coho	Treaty:	9/15-10/20, 7 days/wk
	Ntrty:	Closed
Chum	Treaty:	Closed unless opened by Medicine Creek Treaty Tribes' agreement
	Ntrty:	Closed

Sequalitchew (Area 13) Treaty Net (Ntrty net closed)

Chinook and Chum	Closed	
Coho		To be determined by State-Tribal agreement prior to cooperative management meeting (June 1).

Carr Inlet (Area 13A) Treaty Net¹(Ntrty net closed) ¹ Based on Medicine Creek Treaty tribal proposal annual regulations. Individual tribal regulations may deviate from this schedule.

Chinook	8/1-9/20, 7 days/wk, open in sections.
Coho	9/14-10/25, 7 days/wk, in-season monitoring to meet hatchery escapement need.
Chum	10/26-12/6, 7 days/wk

Chambers Bay (Area 13C) Treaty Net¹ (Ntrty net closed)

Chinook	Wks 31 (wb 7/27)-Wk 41 (wb 10/5); 4 days/wk. Beach seines Sunday noon to Tuesday noon. Set nets Wednesday noon to Friday noon.
Coho	Wks 42 (wb 10/12)-Wk 44 (wb 10/26); 2 days/wk. Beach seines Sunday noon to Monday noon. Set nets Monday noon to Tuesday noon.
Chum	Wks 45 (wb 11/2)-Wk 48 (wb 11/23); 3 days/wk. 4 days/wk. Beach seines Sunday noon to Tuesday noon. Set nets Wednesday noon to Friday noon.

Area 13D Treaty Net (Ntrty net closed)

Chinook	7/15-9/9 or earlier date dependent on in-season management needs; 7 days/wk
Coho	9/10-12/31 or earlier date dependent on in-season management needs.

Peale Pass (13D-3)	7 days/wk
Pickering Pass (13D-2)	7 days/wk
Dana Pass (13D-1)	7 days/wk
Southern Case (13D-4)	7 days/wk
Chum	Open approximately 10/22; 2-3 days per week; managed weekly by updates (~10/11).
Area 13E Net	Closed to all fishing
Budd Inlet (Area 13F) Treaty Net (Ntrty net closed)	
Chinook	7/15-9/9 or earlier date dependent on in-season management needs; 7 days/wk
Coho	Closed
Chum	Open approximately 11/1, 2-3 days per week, managed by weekly in-season updates
Eld Inlet (Area 13G) Treaty Net (Ntrty net closed)	
Chinook	7/15-9/9; opening dependent upon in-season data, outer portion only
Coho	Closed
Chum	Open approximately 11/1, 2-3 days per week, managed by weekly escapement updates
Totten Inlet (Area 13H) Treaty Net (Ntrty net closed)	
Chinook	7/30-9/9; schedule dependent on in-season data
Coho	Closed
Chum	Open approximately 10/8, 2-3 days per week; managed by weekly escapement updates
Little Skookum Inlet (Area 13I) Treaty Net (Ntrty net closed)	
Chinook	7/30-9/10; schedule dependent upon in-season data
Coho	Closed
Chum	Open approximately 12/1, 2-3 days per week; managed by weekly escapement updates
Hammersley Inlet (Area 13J) Treaty Net (Ntrty net closed)	
Chinook	7/30-9/9 or earlier date dependent on in-season management needs
Coho	Closed

Chum	Open approximately, 9/17-12/25, 2-3 days/wk; managed by weekly escapement updates
Northern Case Inlet (Area 13K) Treaty Net (Ntrty net closed)	
Chinook	7/15-9/9
Coho	9/10-12/31 or earlier date dependent on in-season management needs
Chum	Open approximately 9/17-12/25; 2-3 days/wk; managed by weekly escapement updates
Nisqually River (Area 83D) Treaty Net (Ntrty net closed)	
Chinook	Wks 28 (wb 7/6)-Wk 37 (wb 9/7); 3 days/wk; The Nisqually Indian Tribe will manage the Nisqually River Chinook run to attain an 1,200 natural spawning escapement goal. This will be achieved by running an in-season update and adjusting the fishing schedule accordingly.
Coho	Wks 41 (wb 10/5)-Wk 47 (wb 11/16); 3-4 days/wk
Chum	Proposed schedule: Wks 48 (wb 11/23)-Wk 5 (wb 1/25); 3,4 days/wk; per annual Nisqually River chum/steelhead management plan.
McAllister Creek (Area 83F) Treaty Net (Ntrty net closed)	
Chinook/Pink	Wks 27 (wb 7/1)-Wk 40 (wb 9/30); 3 days/wk
Coho	Wks 41 (wb 10/7)-Wk 48 (wb 11/25); 3-4 days/wk
Chum	Proposed schedule: Wks 49 (wb 12/2)-Wk 5 (wb 1/25); 4 days/wk per annual Nisqually River chum/steelhead management plan.
Area 13 Recreational	
5/1-6/30	2 fish limit (Chinook 22" min. size), release unmarked Chinook, Single-point barbless hooks only. Minter Creek mouth closed through 9/30.
7/1-9/30	2 fish limit (Chinook 22" min. size), release unmarked Chinook and unmarked coho; Single-point barbless hooks only. Minter Creek mouth closed through 9/30; Lower Budd Inlet closure zone 7/16-10/31.
10/1-10/31	2 fish limit, release unmarked coho (Chinook 22" min size). Single-point barbless hooks only. Lower Budd Inlet closure zone 7/16-10/31.
11/1-12/31	2 fish limit, 1 Chinook (Chinook 22" min size).
1/1-1/31	1 fish limit, (Chinook 22" min size).
2/1-2/28	Closed
3/1-4/30	1 fish limit, (Chinook 22" min size). Minter Creek mouth closure begins 4/16.

Fox Island Pier Recreational		
Year-Round	2 fish limit, 1 Chinook (22" min size); 7/1-10/31 release unmarked coho and single-point barbless hooks only.	
Chambers Creek Estuary Recreational		
(downstream of markers 400' below Boise-Cascade Dam to Burlington Northern Railroad Bridge)	7/1 – 11/15	6 fish/2 adult limit, 12" min size, release unmarked coho.
Deschutes River Recreational		
Capitol Lake (from outlet to 400' below lowest Tumwater Falls (Deschutes River) fish ladder).	7/1 – 10/15	6 fish/2 adult limit, 12" min size, release coho. All species night closure and non-buoyant lure restrictions 8/1 – 11/30.
(from Old Hwy 99 Bridge on Capitol Blvd in Tumwater to Henderson Blvd Bridge)	7/1 – 10/15	6 fish/2 adults limit, 12" min size, release coho.
(upstream of Henderson Blvd Bridge)	7/1 – 10/15	6 fish/2 adults limit, 12" min size, release coho, selective gear rules.
Kennedy Creek Recreational		
(mouth to northbound Hwy. 101 Bridge)	10/1 – 11/30	6 fish/2 adults limit, 12" min size, release unmarked coho, barbless hooks required. Night closure and non-buoyant lure restriction 10/1-12/31.
McAllister Creek Recreational		
(mouth to Olympia-Steilacoom Rd Bridge)	7/1 – 11/30	6 fish/2 adult limit, 12" min size. All species – night closure and non-buoyant lure restriction 8/1-11/30.
McLane Creek Recreational		
(from a line 50' north of and parallel to the Mud Bay Rd. Bridge to a line 100' upstream of and parallel to the	Same as Area 13	Same as Area 13

south bridge on Hwy.101)		
Minter Creek Recreational		
(mouth to 50' downstream of hatchery rack)	11/1 – 12/31	4 fish limit, 12" min size, chum only.
Nisqually River Recreational		
(mouth to the military tank crossing bridge, one mile upstream of the mouth of Muck Creek)	7/1 – 1/31	6 fish/2 adults limit, 12" min. size, release unmarked adult Chinook. All species – night closure and non-buoyant lure restriction 8/1-11/30.

All other SOUTH SOUND AREA 13 REGION freshwater recreational closed to salmon angling.

10. Hood Canal Region

Hood Canal Mainstem (Areas 12, 12B, 12C, 12D)

Treaty: 1,000 feet closure around streams that are closed to net fishing. Beach seines and hook and line gear release chum through 9/30 (through 10/10 if within 500' of western shore of Areas 12B and 12C).

Nontreaty: See WAC 220-47-307 for Nontreaty exclusion zones.

Chinook:	Trty:	Areas 12, 12B and 12D: Closed
		Area 12C: Open wb 7/20; through 8/23; 5 days/wk. Gillnets restricted to 7" min mesh starting 8/1.
		Area 12H: Open wb 8/3 through wb 9/21; hook and line gear continuous; beach seines daylight hours Tues and Thur each week; possible in-season modifications; Chum release.
	Ntrty	Closed
Coho	Trty:	Area 12: Open 9/25 through 10/18; for gillnets and beach seines. Beach seines for Coho only (release all Chinook and Chum through 9/30). No early start for beach seines. Both gear types may fish no more than 6 days/wk when open.
		Area 12B: Open 10/1 through 10/25 gillnets; 500 foot closure along western shore through 10/10; beach seines for Coho only. Both gear types may fish no more than 6 days/wk when open.

		Area 12C: Open 10/1 through 10/25, for gillnets; with 500 foot beach closure from Ayock Pt. to approx. 2,000 feet south of Lilliwaup (at the large house, north of Octopus Hole) through 10/10; beach seines for Coho (release all Chum through 9/30) may start no earlier than 9/21. Both gear types may fish 5 days/wk when open.
		Area 12D (west of Madrona Pt. - local name): Open for beach seines and gillnets no earlier than 10/1. Weekly schedules including Chum release through 9/30, identical to Area 12C.
	Ntrty:	Closed
Chum	<p>[WDFW and the Tribes will review recent catches and the in-season management method for the Hood Canal Chum fishery. Review to be completed by August 30, 2008. Changes may be made by agreement to the fishing schedule based on those reviews.]</p>	
	Trty:	Area 12: Open 10/19 through 11/20; 7 d/wk
		Area 12B: Open 10/26 through 11/20; 7d/wk
		Area 12C: Open 10/26 through 11/29; 7d/wk.
		Area 12D: Closed.
		Area 12H: Hook and line gear open from 10/19 through 11/29; beach seines open Tuesday and Thursday of each week. Then Monday and Wednesday for the week beginning 11/16; possible in-season adjustments. Starting 11/2, hatchery escapement control measures will go into effect.
	Ntrty:	Areas 12-12B: Open Wks 43 (wb 10/19) through wk 47 (wb 11/16), PS Chinook and unmarked coho NR live boxes required during Wks 43 and 44; PS fishing pattern: 1,2,1,2,1; GN fishing pattern: 2,2,2,2,2, daylight hours
		Area 12C: Open Wks 46 (wb 11/9) through wk 48 (wb 11/23) If needed to attain NT share. PS Chinook NR; PS fishing pattern: 1,1,1; GN fishing pattern: 2,2,2 [Area 12H: BS (Hoodsport Hatchery Zone) fishery in wks 46 – 48 pending discussions with the Co-Managers.]
		Area 12D Closed

NOTE: The following schedules during the chum management period are preliminary and are subject to revision, on the basis of final preseason forecasts of abundance, as well as review and application of inseason abundance assessment methods.

Port Gamble (Area 9A)

Chinook	All	Closed
Coho	Trty:	Open wb 8/24 through wb 10/26, gillnet only.
	Ntrty:	Open Wks 35 (wb 8/24) - 44 (wb 10/26) GN and skiff GN, both gears limited to 100 fathoms length and 60 meshes in depth; 3 days wk 35, then 7 days/wk; Chinook NR; chum NR through 9/30; release fish not to be retained by cutting ensnaring meshes. The beach area of the Port Gamble Indian Reservation, between Pt. Julia and the boundary marker at the south end of the reservation - closed to all fishing.
Chum	Trty:	Open wb 11/2 through wb 11/30.
	Ntrty:	Closed

Quilcene / Dabob (Area 12A)

Coho	Trty:	Open north of Pt. Whitney, wb 8/24 through wb 10/12; Chum and Chinook release from hook and line and beach seine gear through 9/30; beach seines 5 days/wk, daylight hours; hook and line open continuous. Gillnets closed before 9/1 and limited to 1 day/wk - 9/1 through 9/30. Gillnets will close if 12A summer chum escapement projected <1,500. Additional gillnet time may be added after 9/15, if 12A summer chum escapement projected >2,500 and coho harvest needs require it. Beach seine advanced notification required prior to fishing.
	Ntrty:	Open wks 35 (wb 8/24) – 40 (wb 9/28); Skiff gillnet fishing pattern 1,1,1,1,1 daylight hours; net must be attended at all times; Chinook NR; chum NR through 10/7; release fish not to be retained by cutting ensnaring meshes. Gillnets will close if 12A summer chum escapement projected <1,500. Potential additional gillnet time may be added after 9/15 if 12A summer chum escapement projected >2,500, per Summer Chum Salmon Conservation Initiative (SCSCI). Fishery will be managed consistent with SCSCI.
Chum	Trty:	Open to set and drift gillnets wb 10/19 through 11/20, South of an E-W line through Pt. Whitney.
	Ntrty:	Closed

Skokomish River (Area 82G) Treaty (Ntrty net closed)

The Skokomish Tribe will implement a commercial fishery in Purdy Creek (82J) on 9/24 & 10/8 including sampling and monitoring programs.

Note: Hook and line gear and beach seines release chum through 10/15.

Chinook	Open 8/03 through 9/20; no more than 3 days/wk; closed to gillnets below SR 106.
Coho	Open 9/21 through 10/4; no more than 4 days/wk, Open 10/5 – 11/15; five days per week. Both openings closed to gillnets below SR 106 through 9/30.
Chum	Open 11/16 through 12/6; 7 days/wk.

Big Quilcene River (Area 82F) Treaty (Ntrty net closed)

Coho	Openings to be determined in-season, for coho only, from 9/1 through wb 9/21. Closed below Rogers St. From Rogers St. to U.S. Hwy 101, hook and line gear only, release all other salmon. The hatchery area, from U.S. Hwy 101 to the Quilcene Hatchery rack, may be opened for short periods to take surplus coho. Hand held gear only (dipnets, hand lines, etc.).
Chum	Closed

Misc. Hood Canal Rivers (Dosewallips, Duckabush, Hamma Hamma, Tahuya, DeWatto, Union)

All species	Closed to commercial harvest.
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Area 12 Recreational

5/1-6/30	Closed
7/1-8/31	North of Ayock Pt. – Closed to salmon angling except see Quilcene/Dabob Bay Recreational below.
9/1-10/15	North of Ayock Pt. (including Quilcene/Dabob Bay) – 2 fish limit, coho only.
7/1-10/15	South of Ayock Pt. - 4 fish limit, 2 Chinook and 2 coho (Chinook 22" min size); release chum.
10/16-12/31	4 fish limit, 1 Chinook and 2 coho (Chinook 22" min size).
1/1-2/13	Closed
2/14-4/10	1 fish limit (Chinook 22" min size).
4/11-4/30	Closed

Quilcene/Dabob Bay Recreational

5/1-8/15	Same as Area 12
8/16-8/31	2 fish limit, coho only.
9/1-4/30	Same as Area 12

Hoodsport Hatchery Zone Recreational

Same as Area 12 except:

7/1-12/31	4 fish limit, no minimum size, only 2 Chinook greater than 24"; and only 2 coho, chum release 7/1-10/15; night closure.
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Dewatto River Recreational

(mouth to Dewatto-Holly Rd. Bridge)	9/16 – 10/31	2 fish limit, 12" min size, coho only. Selective Gear Rules.
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Dosewallips River Recreational

(mouth to Hwy. 101 Bridge)	11/1 – 12/15	2 fish limit, 12" min size, chum only
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Duckabush River Recreational

(mouth to Mason Co. PUD #1 overhead electrical distribution line)	11/1 – 12/15	2 fish limit, 12" min size, chum only
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Quilcene River Recreational

(from Rodgers St. to Hwy 101 Bridge)	8/16 – 10/31	4 fish, 12" min size, coho only. Only 1 single point barbless hook may be used. Only fish hooked inside the mouth may be retained.
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Skokomish River Recreational

(mouth to Hwy. 101 Bridge)	8/1 – 9/5	1 fish limit, 12" min size, release chum. All Species-night closure, non-buoyant lure restriction, and single point barbless hooks required through 11/30. Terminal gear (hooks, weights, lures or baits) and line must not be within 25' of Tribal gillnets.
	10/1 – 10/15	6 fish/4 adult, 12" min size, release Chinook and chum. All Species-night closure, non-buoyant lure restriction, and single point barbless hooks required through 11/30. Terminal gear (hooks, weights, lures or baits) and line must not be within 25' of Tribal gillnets.
	10/16 – 12/15	6 fish/4 adult, 12" min size, release Chinook. All Species-night closure, non-buoyant lure restriction, and single point barbless hooks required through 11/30. Terminal gear (hooks, weights, lures or baits) and line must not be within 25' of Tribal gillnets.

Tahuya River Recreational

(mouth to marker 1 mile above N. Shore Rd. Bridge)	9/16 – 10/31	2 fish limit, 12" min size, coho only. Selective Gear rules.
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All other HOOD CANAL REGION freshwater recreational closed to salmon angling.

Appendix 2. WDFW 2008 NOF Enforcement Report



Washington Department of Fish and Wildlife Enforcement Program



2008 North of Falcon Enforcement Activity Report



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Introduction

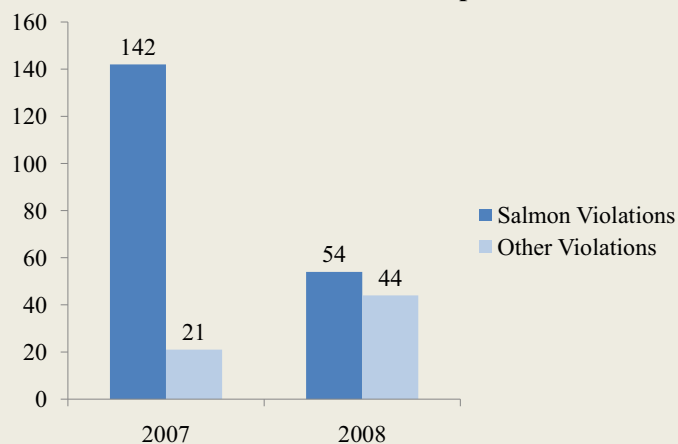
When attempting to determine true angler compliance with fishery rules through information obtained from overt uniformed officer presence, a number of issues must first be considered. While many contacts are random, abnormal or suspicious behavior does attract our attention. The discovery of the violations themselves is contingent upon the skill of the officer to detect it. And finally, the mere presence of the officer can have an effect on angler actions, sometimes effecting compliance at the time. Thus, a targeted violator contact, the failure of officers to recognize violations, or the inability for us to measure changes in compliance when the officer leaves the area, can all result in skewing the picture to some degree. Nonetheless, this report does provide useful information related to where to put enforcement resources, identifying the most commonly violated regulations, and in comparing one season to the next.

Marine Area 1: Ilwaco



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	17	8	9
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	3	0	3
LICENSE VIOLATIONS	33	2	31
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	1	1	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	54	11	43
BOAT SAFETY	8	3	5
GROUNDFISH/HALIBUT	5	5	0
OTHER	31	13	18
TOTAL OTHER VIOLATIONS	44	21	23

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	475
Salmon Violations	54
Other Violations	44
Total Violations	98
Patrol Hours	
Dock/Shore Hours	43.5
Boat Hours	74
Total Hours	117.5



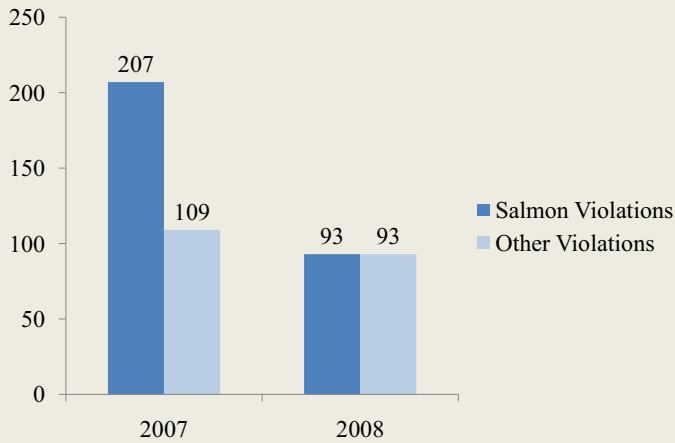
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 2: Westport



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	24	11	13
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	3	0	3
LICENSE VIOLATIONS	54	13	41
CLOSED AREA VIOLATION	9	3	6
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	3	3	0
TOTAL SALMON VIOLATIONS	93	30	63
BOAT SAFETY	10	2	8
CRAB (SPORT)	58	19	39
GROUNDFISH/HALIBUT	3	2	1
OTHER	20	7	13
ARREST WARRANT	2	2	0
TOTAL OTHER VIOLATIONS	93	32	61

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	1071
Salmon Violations	93
Other Violations	93
Total Violations	186
Patrol Hours	
Dock/Shore Hours	236
Boat Hours	97.5
Total Hours	333.5



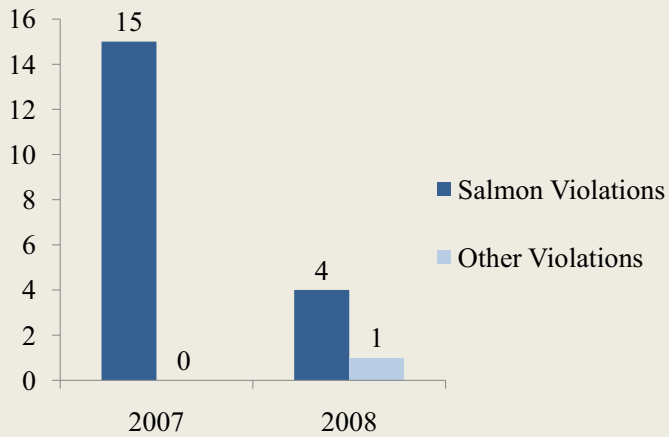
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 3: LaPush



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	2	1	1
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	2	1	1
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	4	2	2
BOAT SAFETY	1	1	0
TOTAL OTHER VIOLATIONS	1	1	0

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	66
Salmon Violations	4
Other Violations	1
Total Violations	5
Patrol Hours	
Dock/Shore Hours	34
Boat Hours	0
Total Hours	34



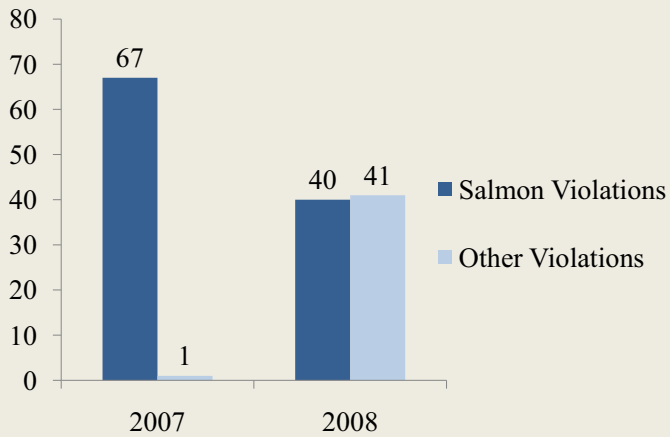
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 4: Neah Bay



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	14	5	9
CLOSED AREA VIOLATION	9	2	7
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	2	0	2
GEAR VIOLATIONS (SALMON)	1	1	0
LICENSE VIOLATIONS	14	5	9
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	40	13	27
GROUNDFISH/HALIBUT	9	5	4
CRAB (SPORT)	2	0	2
BOAT SAFETY	9	1	8
OTHER	21	21	0
TOTAL OTHER VIOLATIONS	41	27	14

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	438
Salmon Violations	40
Other Violations	41
Total Violations	91
Patrol Hours	
Dock/Shore Hours	14
Boat Hours	327
Total Hours	341



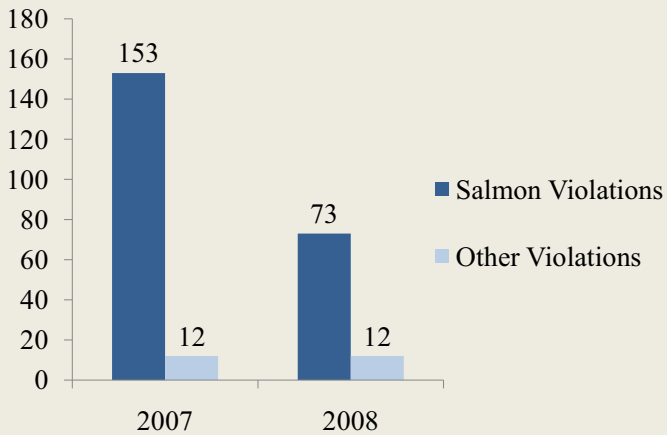
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 5: Sekiu



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	39	20	19
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	5	4	1
LICENSE VIOLATIONS	18	4	14
CLOSED AREA VIOLATION	2	2	0
UNDERSIZED CHINOOK	6	5	1
WILD CHINOOK	0	0	0
WILD COHO	3	3	0
TOTAL SALMON VIOLATIONS	73	38	35
BOAT SAFETY	7	1	6
GROUNDFISH/HALIBUT	5	2	3
TOTAL OTHER VIOLATIONS	12	3	9

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	647
Salmon Violations	73
Other Violations	12
Total Violations	85
Patrol Hours	
Dock/Shore Hours	0
Boat Hours	338
Total Hours	338



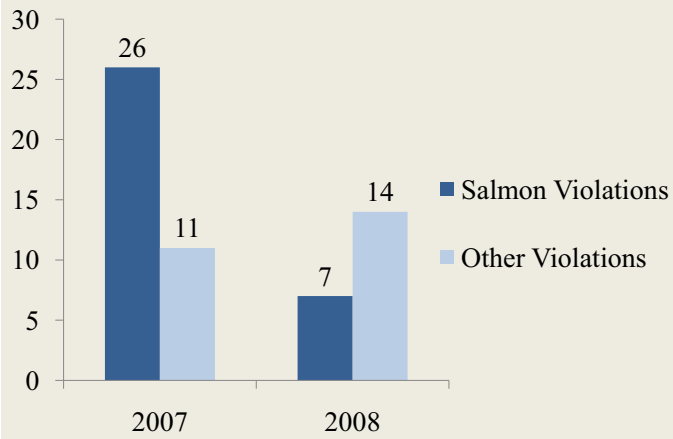
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 6: Port Angeles



Violation Type	Violations	Arrests	Warnings
LICENSE VIOLATIONS	0	0	0
BARB HOOKS (SALMON)	5	2	3
GEAR VIOLATIONS (SALMON)	2	1	1
EXCEED COHO	0	0	0
EXCEED CHINOOK	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
WILD COHO	0	0	0
WILD CHINOOK	0	0	0
UNDERSIZED CHINOOK	0	0	0
TOTAL SALMON VIOLATIONS	7	3	4
GROUND FISH/HALIBUT	1	1	0
CRAB (SPORT)	9	4	5
BOAT SAFETY	4	1	3
TOTAL OTHER VIOLATIONS	14	6	8

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	75
Salmon Violations	7
Other Violations	14
Total Violations	21
Patrol Hours	
Dock/Shore Hours	4
Boat Hours	178
Total Hours	182



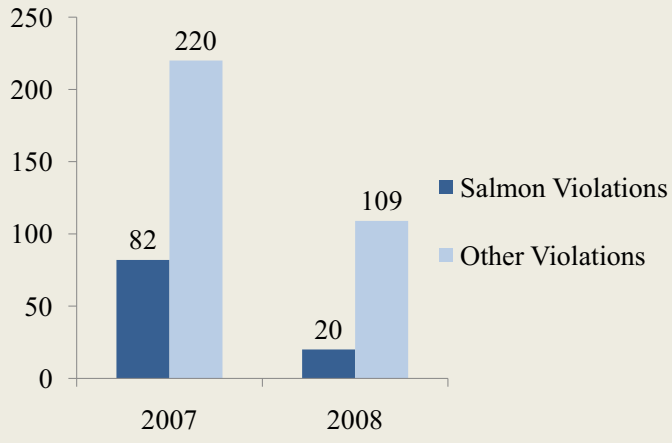
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 7: San Juan Islands



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	9	1	8
EXCEED CHINOOK	1	1	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	1	1	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	5	5	0
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	4	1	3
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	20	9	11
CRAB (SPORT)	91	32	59
DRUGS	1	1	0
OTHER	17	10	7
TOTAL OTHER VIOLATIONS	109	43	66

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	768
Salmon Violations	20
Other Violations	109
Total Violations	129
Patrol Hours	
Dock/Shore Hours	4
Boat Hours	204
Total Hours	208



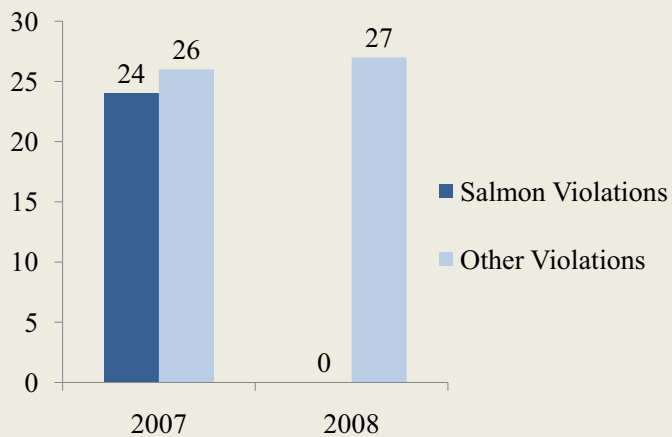
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 8-1: Deception Pass, Hope Inlet, Skagit Bay



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	0	0	0
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	0	0	0
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	0	0	0
BOAT SAFETY	15	0	15
CRAB (SPORT)	12	6	6
TOTAL OTHER VIOLATIONS	27	6	21

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	263
Salmon Violations	0
Other Violations	27
Total Violations	27
Patrol Hours	
Dock/Shore Hours	36
Boat Hours	0
Total Hours	36



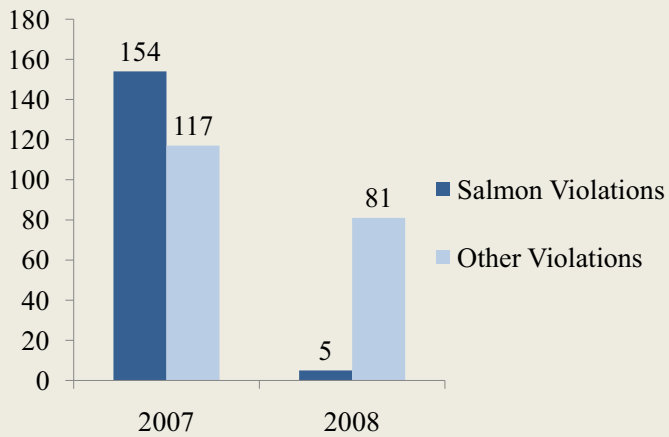
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 8-2: Port Susan, Port Gardner



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	3	1	2
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	2	2	0
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	5	3	2
BOAT SAFETY	1	1	0
CRAB (SPORT)	64	32	32
GROUND FISH/HALIBUT	2	2	0
OTHER	14	3	11
TOTAL OTHER VIOLATIONS	81	38	43

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	330
Salmon Violations	5
Other Violations	81
Total Violations	86
Patrol Hours	
Dock/Shore Hours	37
Boat Hours	81
Total Hours	118



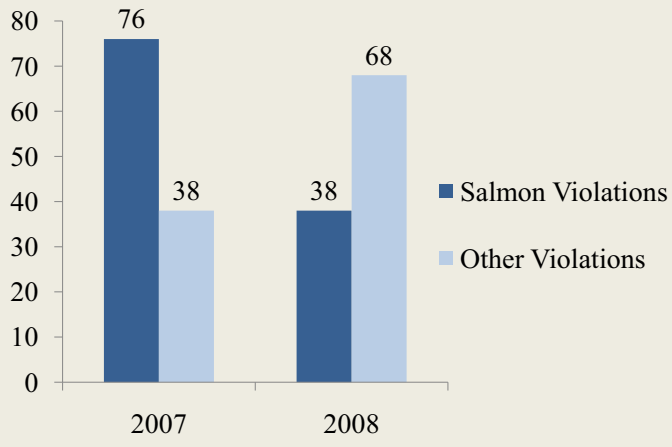
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 9: Admiralty Inlet



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	26	18	8
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	6	0	6
LICENSE VIOLATIONS	6	2	4
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	38	20	18
BOAT SAFETY	6	6	0
CRAB (SPORT)	49	10	39
GROUNDFISH/HALIBUT	7	7	0
OTHER	6	6	0
TOTAL OTHER VIOLATIONS	68	29	39

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	N/A
Salmon Violations	38
Other Violations	68
Total Violations	106
Patrol Hours	
Dock/Shore Hours	76
Boat Hours	164
Total Hours	240



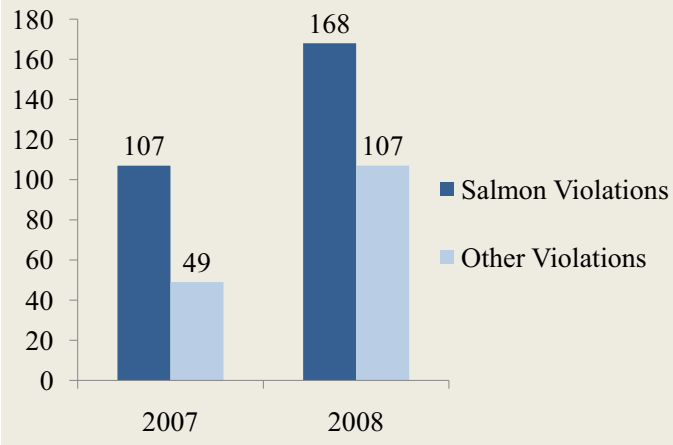
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 10: Seattle/Bremerton



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	39	26	13
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	9	8	1
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	50	43	7
CLOSED AREA VIOLATION	65	14	51
SNAGGING	3	1	2
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	2	1	1
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	168	93	75
CRAB (SPORT)	65	43	22
GROUNDFISH/HALIBUT	4	4	0
OTHER	33	18	15
ARREST WARRANT	5	5	0
TOTAL OTHER VIOLATIONS	107	70	37

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	1272
Salmon Violations	168
Other Violations	107
Total Violations	275
Patrol Hours	
Dock/Shore Hours	432
Boat Hours	152
Total Hours	584



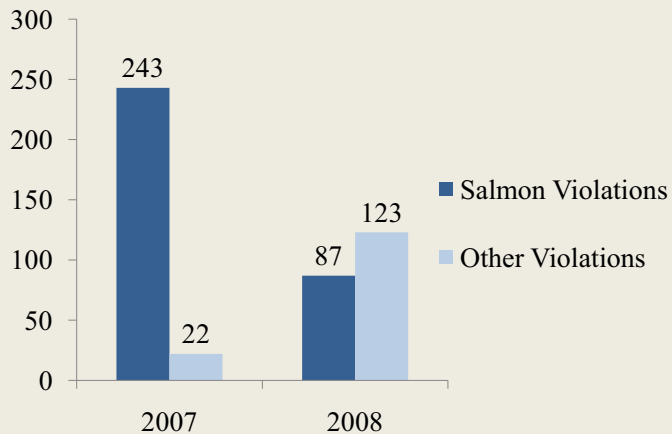
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 11: Tacoma/Vashon Island



Violation Types	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	61	36	25
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	3	3	0
GEAR VIOLATIONS (SALMON)	1	1	0
LICENSE VIOLATIONS	21	14	7
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	1	1	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	87	55	32
BOAT SAFETY	4	0	4
CRAB (SPORT)	66	21	45
DRUGS	3	0	3
GROUND FISH/HALIBUT	2	2	0
OTHER	48	27	21
TOTAL OTHER VIOLATIONS	123	50	73

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	493
Salmon Violations	87
Other Violations	123
Total Violations	210
Patrol Hours	
Dock/Shore Hours	43
Boat Hours	168
Total Hours	211



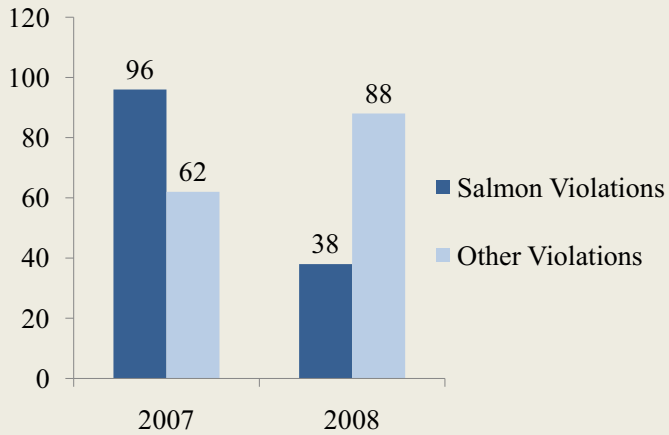
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 12: Hood Canal



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	25	14	11
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	1	0	1
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	0	0	0
CLOSED AREA VIOLATION	0	0	0
SNAGGING	12	9	3
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	38	23	15
BOAT SAFETY	42	7	35
CRAB (SPORT)	29	12	17
DRUGS	1	1	0
OTHER	16	5	11
TOTAL OTHER VIOLATIONS	88	25	63

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	494
Salmon Violations	38
Other Violations	88
Total Violations	126
Patrol Hours	
Dock/Shore Hours	27
Boat Hours	190
Total Hours	217



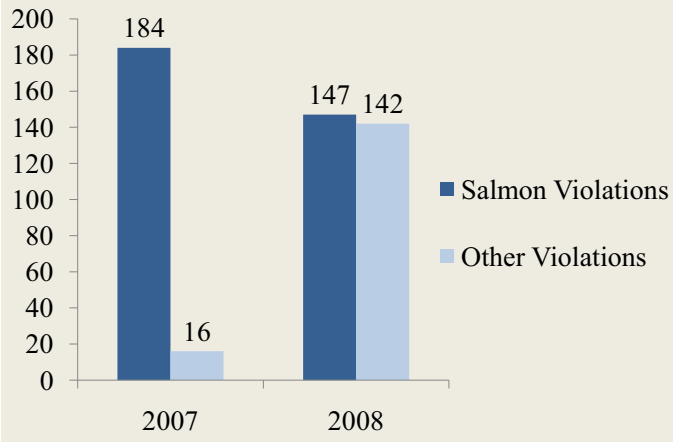
Note: Multiple Officers may be on a vessel during a boat hour.

Marine Area 13: Olympia



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	108	63	45
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	2	2	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	22	15	7
CLOSED AREA VIOLATION	10	7	3
SNAGGING	5	0	5
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	147	87	60
BOAT SAFETY	25	6	19
CRAB (SPORT)	37	13	24
DRUGS	2	2	0
OTHER	78	54	24
TOTAL OTHER VIOLATIONS	142	75	67

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	944
Salmon Violations	147
Other Violations	142
Total Violations	289
Patrol Hours	
Dock/Shore Hours	204
Boat Hours	208
Investigation	11
Total Hours	423



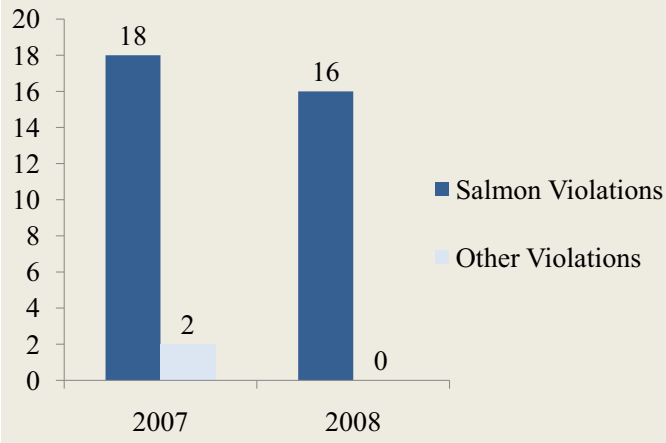
Note: Multiple Officers may be on a vessel during a boat hour.

Big Quilcene River



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	5	1	4
EXCEED CHINOOK	0	0	0
EXCEED COHO	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	2	2	0
CLOSED AREA VIOLATION	7	4	3
SNAGGING	2	2	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	16	9	7

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	155
Salmon Violations	16
Other Violations	0
Total Violations	16
Patrol Hours	
Dock/Shore Hours	76
Boat Hours	0
Total Hours	76



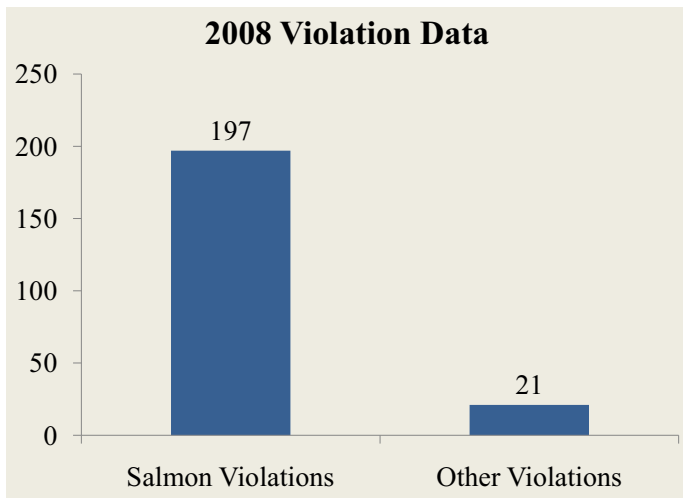
Note: Multiple Officers may be on a vessel during a boat hour.

Skokomish River

Enforcement Activity	
Contacts	669
Salmon Violations	197
Other Violations	21
Total Violations	218
Patrol Hours	
Dock/Shore Hours	447
Boat Hours	0
Joint Agency	8
Investigation	17
Total Hours	472

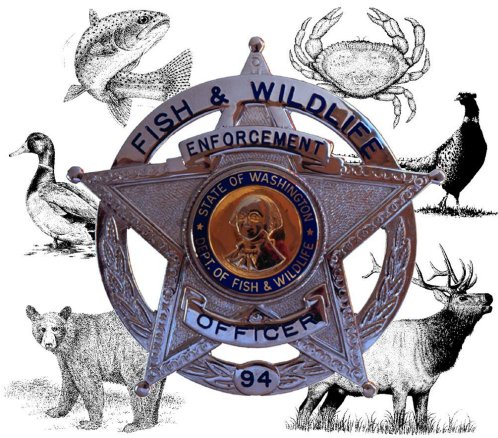


Violation Type	Violations	Arrests	Warnings
ATTEMP TO EXCEED	34	25	9
BARB HOOKS (SALMON)	11	7	4
EXCEED CHINOOK	6	6	0
EXCEED COHO	5	4	1
FAIL TO RECORD (SALMON)	41	25	16
FAIL TO SUBMIT (SALMON)	15	5	10
FISH HANDLING RULE	4	3	1
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE	6	2	4
LICENSE VIOLATIONS	0	0	0
CLOSED AREA VIOLATION	9	0	9
SNAGGING	66	49	17
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	0	0	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	197	126	71
BOAT SAFETY	3	1	2
DRUGS	1	1	0
OTHER	17	17	0
TOTAL OTHER VIOLATIONS	21	19	2



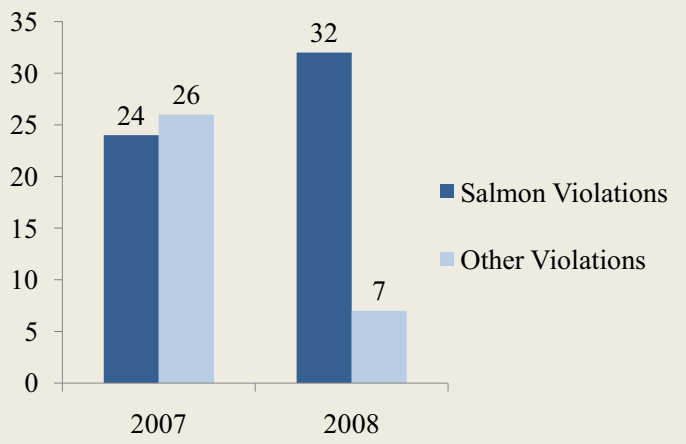
Note: Multiple Officers may be on a vessel during a boat hour.

Nisqually River



Violation Type	Violations	Arrests	Warnings
BARB HOOKS (SALMON)	0	0	0
EXCEED CHINOOK	0	0	0
EXCEED COHO	1	1	0
FAIL TO SUBMIT (SALMON)	6	6	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	1	1	0
LICENSE VIOLATIONS	0	0	0
NIGHT CLOSURE	23	23	0
CLOSED AREA VIOLATION	0	0	0
UNDERSIZED CHINOOK	0	0	0
WILD CHINOOK	1	1	0
WILD COHO	0	0	0
TOTAL SALMON VIOLATIONS	32	32	0
OTHER	4	4	0
ARREST WARRANT	3	3	0
TOTAL OTHER VIOLATIONS	7	7	0

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	183
Salmon Violations	32
Other Violations	7
Total Violations	39
Patrol Hours	
Dock/Shore Hours	60
Boat Hours	0
Total Hours	60

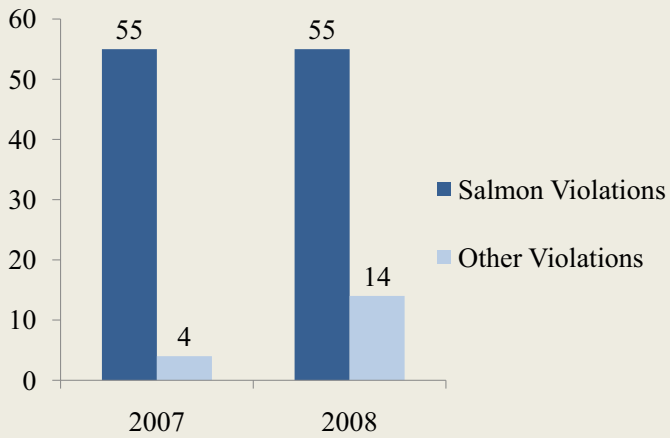
Note: Multiple Officers may be on a vessel during a boat hour.

Carbon River



Violation Type	Violations	Arrests	Warnings
SNAGGING	1	1	0
LICENSE VIOLATIONS	11	10	1
BARB HOOKS (SALMON)	26	23	3
GEAR VIOLATIONS (SALMON)	0	0	0
EXCEED COHO	0	0	0
EXCEED CHINOOK	8	5	3
FAIL TO SUBMIT (SALMON)	0	0	0
WILD COHO	0	0	0
WILD CHINOOK	0	0	0
UNDERSIZED CHINOOK	0	0	0
CLOSED AREA VIOLATION	9	7	2
TOTAL SALMON VIOLATIONS	55	46	9
ARREST WARRANT	8	8	0
OTHER	6	6	0
TOTAL OTHER VIOLATIONS	14	14	0

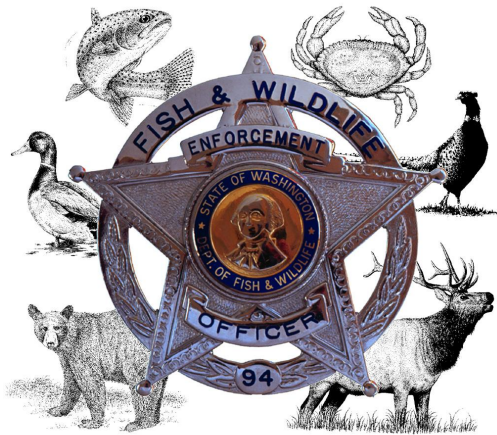
2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	457
Salmon Violations	55
Other Violations	14
Total Violations	69
Patrol Hours	
Dock/Shore Hours	128
Boat Hours	0
Total Hours	128

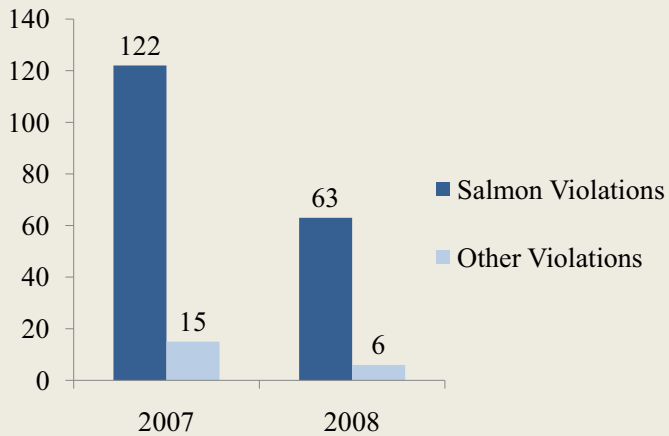
Note: Multiple Officers may be on a vessel during a boat hour.

Puyallup River



Violation Type	Violations	Arrests	Warnings
FISH HANDLING RULE	4	4	0
LICENSE VIOLATIONS	3	3	0
BARB HOOKS (SALMON)	50	35	15
GEAR VIOLATIONS (SALMON)	0	0	0
EXCEED COHO	0	0	0
EXCEED CHINOOK	0	0	0
FAIL TO SUBMIT (SALMON)	6	5	1
WILD COHO	0	0	0
WILD CHINOOK	0	0	0
UNDERSIZED CHINOOK	0	0	0
CLOSED AREA VIOLATION	0	0	0
TOTAL SALMON VIOLATIONS	63	47	16
DRUGS	2	2	0
ARREST WARRANT	4	4	0
TOTAL OTHER VIOLATIONS	6	6	0

2007 - 2008 Violation Comparison



Enforcement Activity	
Contacts	436
Salmon Violations	63
Other Violations	6
Total Violations	69
Patrol Hours	
Dock/Shore Hours	110
Boat Hours	0
Total Hours	110

Note: Multiple Officers may be on a vessel during a boat hour.

Contact Information:

Deputy Chief Mike Cenci

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Enforcement Program

600 Capitol Way North

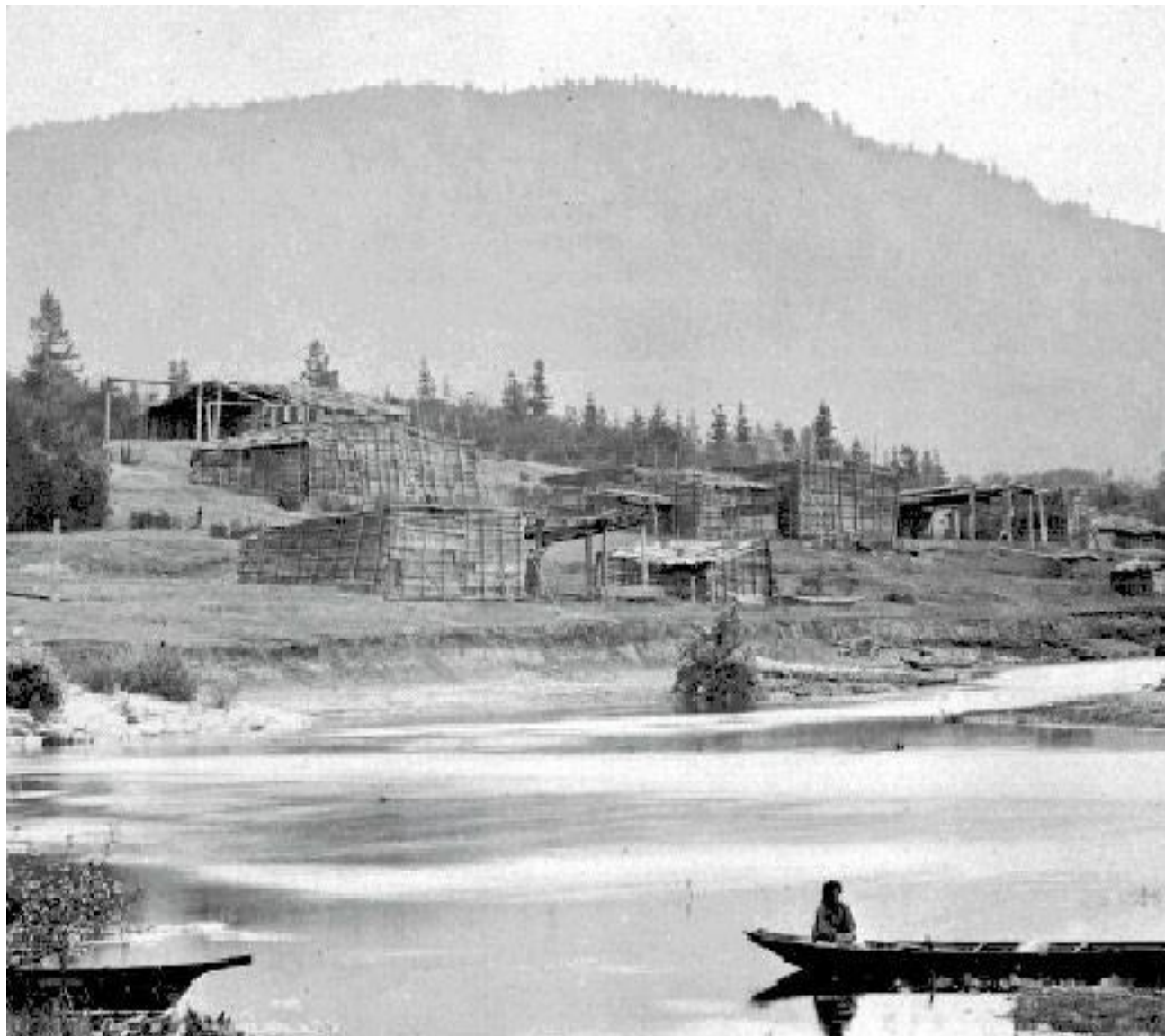
Olympia WA 98501 1091

Department Number: 360-902-2379

Email: MIKE.CENCI@DFW.WAGOV

Appendix 3. Puyallup Tribe 2008 Fisheries Enforcement Report

PUYALLUP TRIBAL FISH & WILDLIFE ENFORCMENT REPORT 2008



Introduction

This report hopefully shows the great work of the Puyallup Fish and Wildlife enforcement Department for the year 2008. Officers have worked hard to enforce standards and laws set in previous years. However, we will continue to make improvements in order to achieve the mission of protecting the Puyallup Tribal members and the Nations precious Fish and Wildlife resources.

Mission

The Mission statment for the Puyallup Tribal Fish and Wildlife Enforcement is to provide for Tribal members safety, to protect fish from unlawful harvest, to protect Fish habitat, and to educate the public about Tribal fishing rights.



Breakdown of written violations for 2008

Illegal set net	17
Fishing in closed waters	8
Unmarked gear or nets	8
Persons eligible to fish	4
Wasting of fish/Shellfish	4
No boat registration	5
Fish buyer violation	1
Fishing with no Tribal fishing card	2

Fish ticket violation	2
Helpers card violation	3
Unlawful assistance.	4
Boat incidents	4

