Washington Department of Fish and Wildlife
Puget Sound Treaty Indian Tribes

Puget Sound Chinook Comprehensive Harvest Management Plan

Annual Report Covering
The 2009-2010 Fishing Season

June 21, 2010

Acknowledgements

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Puget Sound Treaty Tribes:

Rebecca Bernard (Upper Skagit Tribe), Pete Kairis, Bob Hayman (Skagit River System Cooperative), Alan Chapman (Lummi Nation), Ned Currence (Nooksack Tribe), Mike Mahovlich (Muckleshoot Tribe), Cindy Gray (Skokomish Tribe), Diego Holmgren (Tulalip Tribes), Jon Oleyar (Suquamish Tribe), Chris Phinney (Puyallup Tribe), Joe Peters (Squaxin Island Tribe), and Craig Smith (Nisqually Tribe).

Northwest Indian Fisheries Commission:

Will Beattie, Bill Patton, and Amy Seiders.

Washington Department of Fish and Wildlife:

Kyle Adicks, Thom Johnson, Randy Cooper, Brett Barkdull, Andrew Fowler, Pete Verhey, Jennifer Whitney, Natasha Geiger, Aaron Bosworth, Larry Phillips, Mike Scharpf, Mark Baltzell, Laurie Peterson, Steve Thiesfeld, and Jeromy Jording.

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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, 2009 and April 30, 2010. This includes comparisons of pre-season projections with actual catch in all commercial and some recreational fisheries. 2008 Recreational catch estimates are presented for those areas where data were not available in time for the 2008-2009 report. Chinook spawning escapement estimates for 2009 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 net fisheries (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 the lack of sockeye-directed fisheries, due to weak Fraser River sockeye returns. Commercial catches in the Nooksack, Skagit, Stillaguamish/Snohomish, and South Puget Sound terminal areas were all below expectations, although catches in some South Sound extreme terminal areas were near or above projection. Catch exceeded preseason projections in Hood Canal.

Marine and freshwater landed recreational Chinook catch in the 2008-2009 season was estimated, from a combination of creel and preliminary Catch Record Card data, to be 45,800, slightly less than the pre-season projection of 47,100. Creel survey-based estimates of catch in 2009-2010 mark-selective recreational fisheries in Areas 5, 7, 8.1-8.2, 9-10, and 11, Skagit, Puyallup and Carbon rivers are included in this report. Total mortality estimates (catch + non-landed mortality) for the 2009-10 marine area selective fisheries were generally lower than pre-season expectations.

Spring Chinook escapement was below prediction for Skagit and Dungeness, at expectation for Nooksack, and above predicted for White River. Nooksack and Dungeness were both below the lower thresholds, while Skagit and White River were above their lower thresholds.

For summer/fall stocks, escapement was considerably lower than predicted for several units, including Skagit, Stillaguamish, Snohomish, Green, Nisqually and Hoko. Returns were closer to predictions, but still below for Lake Washington and Skokomish. Escapement exceeded expectations for the Puyallup, Mid-Hood Canal, and Elwha. The Stillaguamish, Green, Mid-Hood Canal and Hoko units were below their lower thresholds.

Coded-wire tag sampling of 2008 commercial fisheries achieved sampling rate above 20% in most, but not all areas. Areas 12C/12H (Hood Canal), 13A (Carr Inlet) and Area 13 D/F (Deep South Sound/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.

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 2009-2010 management year (May 1, 2009 through April 30, 2010)
- Projected and actual commercial landed catch in Puget Sound, and descriptions of fisheries, for the 2009-2010 management year
- Projected and actual landed catch for 2009 Puget Sound recreational fisheries where creel surveys were conducted, and for all 2008 Puget Sound recreational fisheries
- Estimates of total encounters for mark-selective fisheries, and non-landed mortality for commercial fisheries with Chinook non-retention, where data are available
- Projected and actual spawning escapement for all Puget Sound Chinook populations in 2009, 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
- 2008 Coded–wire tag sampling rates for commercial and recreational fisheries
- Pre-season ISBM annual exploitation rate indices

1.1 Management Objectives

General management objectives for Puget Sound Chinook populations, including Rebuilding Exploitation Rates (RERs), Critical Exploitation Rate Ceilings (CERC's), Upper Management Thresholds (UMTs), and Low Abundance Thresholds (LATs) are shown in Table 1. Table 2 identifies the rates that were used as the ceiling for each Management Unit (MU), and the projected exploitation rates and escapements for each unit, from the final pre-season FRAM model run (2309).

Pre-season fishery planning for 2009-2010 fisheries projected that natural spawning escapement would fall below the critical abundance thresholds for the Nooksack early and Mid-Hood Canal MUs. The FRAM run incorporating the 2003 fisheries regime and 2009 abundance forecasts projected an SUS ER of 6.6% for the Nooksack MU, and 11.9 pre-terminal SUS ER for the Mid Hood Canal MU. These rates were implemented as ceilings for pre-season planning. The exploitation rate on the Snohomish MU in northern fisheries

was projected to exceed the difference between the MU's ERC and critical ERC, so the CER ceiling of 15% in SUS fisheries was implemented. Model escapement projections for other MUs exceeded their LAT's. Escapement projections exceeded 1,200 for the Nisqually and Skokomish MUs (Table 2).

Table 1. 2009 Puget Sound Chinook Harvest Management Objectives.

Management Unit	ER Ceiling	Critical ER Ceiling	Upper Management Threshold	Low Abundance Threshold
Nooksack		6.6% SUS	4,000	
North Fork		(Rate from	2,000	1,000
South Fork		2003 regime run)	2,000	1,000
Skagit summer / fall	50%	17% SUS	14,500	4,800
Upper Skagit summer				2,200
Sauk summer				400
Lower Skagit fall				900
Skagit spring	38%	18% SUS	2,000	576
Upper Sauk				130
Cascade				170
Suiattle				170
Stillaguamish	25%	15% SUS	900	650
North Fork summer			600	500
South Fork & MS fall			300	
Snohomish	21%	15% SUS	4,600	2,000
Skykomish			3,600	1,745
Snoqualmie			1,000	521
Lake Washington	15% PTSUS	12% PTSUS		
Cedar River			1,200	200
Green	15% PTSUS	12% PTSUS	5,800	1,800
White River spring	20%	15% PTSUS	1,000	200
Puyallup fall	50%	12% PTSUS		500
South Prairie Creek			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	11.9% 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

Table 2. Management guidelines implemented and projected exploitation rates and escapements for Puget Sound Chinook from 2009-10 pre-season planning.

Management Unit	RER or CERC implemented	Projected ER[1]	Projected Escapement[1]	UMT	LAT
Nooksack	6.6% SUS[2]	2.3% SUS	315	4000	2000
Skagit summer fall	50%	48.6%	17549	14500	4800
Skagit spring	38%	33.5%	1204	2000	576
Stillaguamish	25%	22.7%	875	900	650
Snohomish	15% SUS	14.0% SUS	6665	4600	2000
L. Washington (Cedar)	15% PT SUS	10.7% PTSUS	1128	1200	200
Green	15% PT SUS	10.7% PTSUS	5,813	5800	1800
White	20%	19.8%	1390	1000	200
Puyallup	50%	49.8%	1153	500	500 (South Prairie Cr)
Nisqually		75.8%	1741	1200	
Skokomish	15% PT SUS	11.9% PTSUS	1217	3650 aggregate 1650 natural	1300 aggregate 800 natural
Mid Hood Canal	11.9% PT SUS [2]	11.7% PTSUS	114	750	400
Dungeness	10% SUS	4.3% SUS	786	925	500
Elwha	10% SUS	4.2% SUS	1864	2900	1000
Western SJDF	10% SUS	4.8% SUS	1015	850	500

1. FRAM 2309 projections

2. ER ceiling adjusted by modeling the 2003 fisheries regime with 2009 forecasted abundance.

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 2009-2010 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 ocean fisheries off the Washington coast (see Appendix). The final pre-season projections of catch under this regime were made in FRAM run number 2309.

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 below in Table 12.

Commercial troll and recreational catches in Washington coastal fisheries north of Cape Falcon were substantially less than their quotas (Table 3). Comparisons of projected and actual Puget Sound catch are provided here for two pre-terminal areas (Strait of Juan de Fuca and San Juan Islands), 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 2009-2010 fisheries, including in-season management actions that deviated from the pre-season plan, and explanations for differences in projected and actual catch.

Table 3. Summary of projected and actual Chinook landed catch in Washington ocean and Puget Sound fisheries in 2009.

Fishery	Projected	Actual
Washington ocean non-treaty troll	20,500	13,028
Washington ocean recreational	20,500	13,331
Washington ocean treaty troll	39,000	12,382
Puget Sound pre-terminal net & troll total		
Strait of Juan de Fuca troll	7,700	4,720
Strait of Juan de Fuca net	1,700	96
San Juan Islands net	5,026	1,017
Area 9 net / hook & line	714	0
Nooksack-Samish terminal net	14,529	11,446
Skagit terminal net	6,765	6,336
Stillaguamish-Snohomish net	3,081	1,604
South Puget Sound terminal net	50,139	38,992
Hood Canal terminal net	17,227	21,124
Strait Tributaries terminal net	4	4

2.1 Strait of Juan de Fuca and San Juan Islands

The 2009 SJF summer troll fishery caught 2,956 Chinook. The fishery opened on July 18th and was expected to run through September 30th, but catch and effort during the first week of the fishery were extraordinarily high. The fishery was immediately closed by emergency regulation on Monday, July 22nd, after four days of fishing.

The winter troll fishery for Nov. 2009 to April 15, 2010 landed 1,764 Chinook for the season. Catch rates were low from November through January, steadily increased through February and March, then dropped in April.

Fraser fisheries were modeled with anticipation of a sockeye return of more than 10,000,000 fish, and a pink salmon return of over 17,000,000 fish. Fishery openings targeting sockeye were expected to occur from mid-July to early August in the Strait of Juan de Fuca, and from late July to early August in the San Juans. Additional openings targeting pink salmon were expected to occur in late August or early September. Sockeye returned well below forecast, providing no allowable catch for the United States fisheries. Fisheries did not open until sockeye had largely cleared U.S. waters, and pink salmon were present in large abundances. Openings occurred between August 26 and September 12, with over 3,750,000 pink salmon landed. Treaty fishers landed a total of 91 Chinook in areas 4B/5/6C, and 1,017 Chinook in areas 7/7A in the pink-directed fishery.

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

Non-treaty purse seines are required to release all Chinook, so non-treaty bycatch projections included expected numbers of Chinook encounters, multiplied by an assumed mortality rate of 33% for summer fisheries, or 46% for fall (chum) fisheries. Pre-season projections were for 3,064 total mortalities in non-treaty sockeye and pink openings (including purse seine release mortality and gillnet landed mortality). The post-season estimate of total mortalities was 664.

Chum fisheries in Areas 7 and 7A opened on October 10, and remained open through November 15, with treaty and non-treaty fleets alternating open periods early in the season. No 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 3 Chinook encountered in a total of 31 sets observed. This expands to a total estimate of 7 Chinook mortalities, compared to a pre-season modeled value of 49 (landed + unlanded).

2.2 Nooksack/Samish Terminal Area

Spring Chinook C&S

In pre-season planning, the Lummi and Nooksack tribes again voluntarily restricted their harvest by agreeing to a target harvest of only 80 Nooksack Chinook. Because genetic analysis of natural-origin early Chinook caught in the 2007 fishery assigned fish caught in early July to the less-abundant South Fork population, fisheries were scheduled to occur earlier, in April and May, to further reduce impacts on the South Fork population.

The preseason plan provided for C&S catch of 80 early Chinook - 60 caught by Lummi fishers and 20 Chinook by Nooksack fishers. Actual catch was 75. The Lummi Nation's C&S fisheries occurred in the lower river, on April 22 and May 8th. The Nooksack Tribe only fished in the lower North Fork, on May 5, May 14, and May 21. Fishers were required to report their catch and have their Chinook sampled. Catches progressively diminished in the three May openings. All 75 Chinook caught were sampled. Sampling results are presented in Table 4.

Table 4. Catch and mark status of Nooksack early Chinook caught in 2009 tribal ceremonial and subsistence fisheries in the Nooksack River.

Date	Location	Catch	Adipose clip only	Adipose clip +CWT	CWT only	Unmarked/ Untagged
April 22	Estuary	27	11	6	5	5
May 5	North Fork	9	7	1	0	1
May 8	Estuary	33	16	5	5	7
May 14	North Fork	5	2	1	0	2
May 21	North Fork	1	0	0	0	1
Total		75	36	13	10	16

Fall Chinook & other species

For 2009 fisheries the fall Chinook management period for Bellingham Bay (Area 7B), Samish Bay (Area 7C), and Lummi Bay (Area 7D) was weeks 31 – 36. The coho management period in these areas included weeks 37 – 43, and the chum management period included weeks 44 – 51.

The fall Chinook management period in the Nooksack River included weeks 32 – 36. The coho management period included weeks 37 – 44, and the chum management period included weeks 45 – 51.

The tribal fall Chinook in the marine areas occurred as planned in weeks 32 – 36; catch was 6,581. The tribal coho fishery involved incidental catch of 1,536 Chinook. No Chinook were caught in the tribal chum fishery.

The non-Indian fall Chinook fishery occurred as scheduled in weeks 33 – 36, and caught 2,426 Chinook, well below the pre-season projection of 7,181. There were an additional 245 Chinook caught during the coho fishery.

Fall Chinook catch in marine areas totaled 10,789, substantially less than the pre-season projection of 14,002. Tribal in-river catch of fall Chinook was 582, which exceeded the pre-season projection of 447.

Table 5. Pre-season projected and actual landed catch of Chinook in Nooksack – Samish terminal-area fisheries in 2009.

Area	Timestep	Projected	Actual	Difference
7B, 7C, 7D Treaty net	Jul-Sep	6,582	8,112	1,530
	Oct-Dec	170	5	-165
7B, 7C Non-treaty net	Jul-Sep	7,181	2,671	-4,510
	Oct-Dec	69	1	-68
Nooksack River Treaty net	Early Chinook, May-Jun	80	75	-5
	Fall Chinook, Jul-Sep	447	576	129
	Fall Chinook, Oct-Dec		6	6

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 hatchery spring Chinook, pink and summer/fall timed Chinook, Ceremonial and Subsistence fisheries targeted at summer/fall timed Chinook (565 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 3.2.10 for discussion of sport fisheries) and a summer/fall run Chinook directed sport fishery. Chinook non-retention was required in the Non-treaty purse seine fisheries at all times, and in the river sport fisheries before June 1 and after August 9. Chinook retention was permitted in Non-treaty gill net fisheries and Treaty fisheries, the test fisheries, during the spring Chinook selective river sport fishery June 1 through July 15 (for marked fish only) and during a directed summer/fall Chinook sport fishery, that could retain unmarked Chinook, from July 9 through August 9.

Test fisheries were conducted mostly as scheduled, except the Blake's Drift Chinook test was cut short in Management Week (hereafter as week) 19 due to the test boat overheating, and in week 35 due to the pink commercial fishery. The weeks 35, 36, and 37 Blakes Drift coho test fisheries, the week 32 Blakes Drift pink test fishery (a new test fishery to evaluate run timing), and the week 36 Spudhouse test were also not conducted due to the pink commercial fishery. The weeks 44 and 45 Blakes Drift chum test fishery was plagued with spawned out pinks and poor river conditions; though both weeks of the test fisheries occurred but were cut short. One Bay chum test fishery occurred in each of weeks 44 and 45. The Brown's Point (Area 8) pink test did not occur. Chinook catches in the test fisheries were more than expected (by 14 Chinook), during spring run timing (catch was 65, expected catch was 51), more (by 36), than expected during summer/fall run timing (catch was 152; expected catch was 116), less than expected (by 157), during the coho test fisheries, with a catch of 57, compared to 214 predicted, and more than expected (by 58), in the pink test fishery with a catch of 127 when 69 were expected (Table 6). Overall, the Chinook catch in all the test and research fisheries combined, 401 Chinook, was 52 Chinook lower than the preseason prediction of 453.

Hatchery spring timed Chinook-directed Treaty commercial fisheries encompassed catch from weeks 19–20 Swinomish and Sauk-Suiattle fisheries and weeks 19–21 Upper Skagit fishery. Preseason catch projections of hatchery (196.5) and natural (137.5) spring-timed Chinook were modeled (FRAM 2309) for the Treaty commercial fisheries—total 348.7. Postseason spring-timed Chinook catches for those same time periods totaled 443; 348.7 hatchery and 94.3 natural origin spring Chinook—a difference of 152.2 more hatchery origin Chinook and 43.5 less natural origin Chinook, or a total difference of 109 spring-timed Chinook.

The Baker sockeye run was approximately 6,861, more than double the preseason forecast of 3,093 sockeye—though still under escapement and program needs and no sockeye fisheries occurred in 2009. The sockeye run was seven days earlier than the last five odd-year average; the 50% trap return date was July 9 rather than the expected date of July 16. No sockeye directed commercial, or sport fisheries occurred in 2009.

For pink salmon, a robust fishery was scheduled based on the preseason forecast of approximately 1.178 million terminal return pinks. After the week 36 inseason update of 1.162 million pinks, the inseason update seemed to confirm the preseason forecast and fisheries occurred as scheduled preseason. The Swinomish fishery opened as scheduled

in week 34 for one day and continued through week 37 at six days a week after week 34. The Sauk-Suiattle Tribe also opened as scheduled for one day in week 34 and fished through week 37 for 4 days a week after week 34. The Upper Skagit pink fishery was conducted according to their preseason schedule in week 35 and continued through week 37 at 28 hours per week. Chinook commercial catch during the pink-directed fisheries, 2,848, was more than predicted preseason, 1,792, for the Swinomish and Upper Skagit Tribes'; a difference of 879 Chinook (Table 6).

Five Chinook mortalities were expected during the Non-Treaty pink directed commercial fishery in Area 8 in weeks 34—36. Both purse seine and gill net fisheries were opened three days a week. Chinook retention was not allowed in the purse seine fishery, while gill net Chinook retention was allowed. A total of 49 Chinook were landed by the gillnet fleet. Based on onboard sampling, there were an estimated 10 Chinook release mortalities during the purse seine openings.

Summer/fall timed Chinook-directed Treaty commercial fisheries encompassed catch from weeks 28–32 for Swinomish, weeks 28–31 for Sauk-Suiattle and weeks 28–32 for Upper Skagit Tribes. Preseason catch projections (3,002 commercial and 565 C&S) of wild indicator stock (99) and natural (3,567) summer/fall-timed Chinook were modeled (FRAM Chin2309) for the Treaty commercial and C&S fisheries—total 3,666. Postseason Summer/fall-timed Chinook catches for those same time periods totaled 2,552 commercial and 220 C&S Chinook—a difference of 450 and 345 respectively less than expectation. Total difference of preseason expectation to post season observed catches of summer/fall-timed Chinook was 795 fewer fish.

Discretion selecting a coho fishery open week that coincided with the more reliable week 39 ISU was recognized preseason; the week 38 ISU continues to fail to capture the inseason abundance with any reliability. The Swinomish, Sauk-Suiattle, and Upper Skagit Tribes were scheduled to open the coho fishery in week 39 (Table 6). Coho abundance was expected to be "Moderate" (i.e., ER ceiling of 35%). Early test fishery catches of coho indicated a run that was much larger than forecast. The preliminary Baker model ISU of about 53,000 coho indicated that the run was larger than predicted by preseason forecast of terminal area abundance (TAA was 37,526 as predicted by FRAM coho0921)—the ISU model eventually settled down to about 83,000 coho; the preliminary terminal run size is approximately 97,000 coho, but that is subject to change. Reflective of the forecast and the inseason updates, the Swinomish and Sauk-Suiattle Tribes' coho fishery did not occur in weeks 39 and 40, as coho bycatch during the pink fisheries encompassed those Tribes' share of harvestable coho. Because the pink return was so abundant, spawned out fish leaving the system and new fish entering the system precluded the regularly scheduled Upper Skagit Tribe fishery in weeks 39 through 42. After the pinks cleared, the Upper Skagit Tribe opened for 28 hours in week 43 with no Chinook by-catch. The Treaty coho commercial fishery was expected to catch 457 Chinook and catches were zero (Table 6).

The preseason forecast of harvestable chum was low and the preseason schedule reflected the low abundance with one day each of fishing in weeks 45 and 46 for Swinomish and Sauk-Suiattle Tribes and one day each of fishing in weeks 46 and 47 for the Upper Skagit Tribe as fishery placeholders dependent on the ISU. No Chinook mortalities were anticipated in the placeholder fisheries. The ISU of chum abundance, 17,161, indicated that the terminal run size abundance was less than then the approximately 26,000 that was predicted, and was under the escapement goal of 40,000 fish, therefore no treaty commercial chum fisheries occurred. Non-treaty chum directed fisheries were not scheduled based on the low preseason forecast.

There were 6,287 total Chinook mortalities estimated in Skagit treaty terminal area net fisheries during the adult accounting period: 65 spring-timed Chinook and 336 summer/fall timed Chinook in test fisheries; 220 in the C&S fisheries; 443 spring-timed Chinook in the hatchery spring Chinook directed fishery; 2,552 in the summer/fall timed Chinook fishery; 2,848 in the pink directed fishery; zero in the coho fishery; and no chum fishery occurred in 2009. In comparison, catch projections during preseason planning indicated that 6,759 Chinook would be caught: 453 in test fisheries; 565 in the C&S fisheries; 339 during the hatchery spring Chinook directed fisheries; 3,157 during summer/fall timed Chinook fisheries; 1,792 during the pink directed fishery; 457 during coho fisheries; and zero during chum fisheries. Thus, post-season observed terminal treaty Chinook mortalities were 472 fewer Chinook than what was projected preseason. This decrease in observed mortalities from projected mortalities occurred on both spring timed and summer/fall timed Chinook—though for springs the number of wild mortalities during the commercial hatchery-directed fishery was lower; 94 observed compared to 140 predicted preseason, while the number of hatchery spring Chinook mortalities was higher; 349 observed compared to 198 predicted preseason. 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 12,757, almost half of expected), and Swinomish and Sauk-Suiattle Tribes not conducting a coho directed fishery because coho bycatch was more than expected during the pink fishery. An exception to this preseason to postseason comparison was the spring Chinook directed fishery that caught 150 more hatchery Chinook than expected (though somewhat offset by 46 fewer wild spring Chinook than expected), and the pink directed fishery which caught 879 more Chinook than expected. Most of the shortfalls in projected catch occurred during the summer/fall directed Chinook fishery (528 fewer) and the coho directed fishery (457 fewer). Preseason projection of Chinook catch during Treaty directed commercial fisheries was 5,745 compared to postseason observed of 5,666—a difference of 79 fewer Chinook. Additionally, effort during the C&S fishery was lower than expected and translated into less catch than was targeted; catch was 220 compared to the identified target of 565—a difference of 345 fewer Chinook. Of the post-season estimated mortalities in tribal fisheries, all were landed catch, because Chinook retention was allowed during all tribal fisheries.

For wild spring Chinook, the preseason prediction of terminal commercial net harvest rate was 9.9%; the preliminary postseason estimated harvest rate is about 8.2%, using a preliminary terminal return of 1,140 wild spring Chinook, which is a 1.7 percentage point lower harvest rate. For summer/falls, the preseason prediction of treaty commercial and C&S terminal harvest rate was approximately 24.2%; the preliminary postseason estimated treaty harvest rate, using a preliminary terminal run size of 12,757 wild and wild indicator broodstock, is approximately 43%, or about a 21 percentage point higher harvest rate. Thus, wild spring Chinook treaty harvest rate was lower than predicted and the treaty commercial and C&S harvest rate on summer/fall timed Chinook was higher.

Table 6. Skagit terminal area projected and actual Chinook catches for treaty fisheries in 2009.

	Preseason Projected--*unFRAMIZED values*			Post-season Observed/Estimated			Difference (Post-Pre)	
Fishery	Schedule	Landed Catch	Total Mortality	Schedule	Landed Catch	Total Mortality	Landed Catch	Total Mortality
Test:								
Chinook	1 site, wks 19-35	167	167	Wks 19-34	217	217	50	50
Pink	3 sites, wks 32-33	69	69	Wks 33; 32-33	127	127	58	58
Coho	3 sites, wks 34-45	214	214	Wks 34; 37-45	57	57	-157	-157
Chum	3 sites, wks 44-45	0	0	Same	0	0	0	0
Research	Jetty, July	400-600	3	Same	0	0	0	-3
Area 8/78C Hatchery Spring Chinook Swinomish and Sauk-Suiattle Tribes:								
Week 19	1 day/1 day	28	28	Same	47	47	20	20
Week 20	1 day/1 day	41	41	Same	91	91	51	51
Area 78C/78D Hatchery Spring Chinook Upper Skagit Tribe:								
Week 19	1 day	58	58	Same	66	66	8	8
Week 20	1 day	130	130	Same	117	117	-13	-13
Week 21	1 day	82	82	Same	122	122	40	40
Area 8/78C/78D Chinook C&S Swinomish, Sauk-Suiattle, Upper Skagit Tribes:								
Summer/Fall Chinook Timing	Variable to target	565	565	Variable to target	220	220	-345	-345
Areas 8/78C Summer/Fall Chinook Swinomish and Sauk-Suiattle Tribes:								
Week 28	2 days/2 days	270	270	Same	36	36	-234	-234
Week 29	2 days/2 days	306	306	Same	111	111	-195	-195
Week 30	2 days/1 days	462	462	Same	171	171	-291	-291
Week 31	2 days/1 days	490	490	Same	370	370	-120	-120
Week 32	2 days	309	309	Same	428	428	119	119
Areas 78C/78D Summer/Fall Chinook Upper Skagit Tribe:								
Week 28	1.167 days	67	67	Same	137	137	70	70
Week 29	1.167 days	130	130	Same	129	129	-1	-1
Week 30	1.167 days	287	287	Same	196	196	-91	-91
Week 31	1.167 days	701	701	Same	414	414	-287	-287
Week 32	1.167 days	135	135	Same	560	560	425	425
Areas 8/78C Pink Swinomish and Sauk-Suiattle Tribes:								
Week 34	1 day/1 day	117	117	Same	254	254	137	137
Week 35	6 days/4 days	487	487	Same	412	412	-75	-75
Week 36	6 days/4 days	306	306	Same	268	268	-38	-38
Week 37	6 days/4 days	324	324	Same	175	175	-149	-149
Areas 78C/78D Pink Upper Skagit Tribe:								
Week 35	1.167 days	183	183	Same	396	396	213	213
Week 36	1.167 days	140	140	Same	311	311	171	171
Week 37	1.167 days	98	98	Same	196	196	98	98
Week 38	1.167 days	137	137	Same	659	659	522	522
Areas 8/78C Coho Swinomish/Sauk-Suiattle Tribes:								
Week 39	2 days/2 days	34	34	None	0	0	-34	-34
Week 40	2 days/2 days	11	11	None	0	0	-11	-11

Table 6, continued. Skagit terminal area projected and actual Chinook catches for treaty fisheries in 2009.								
Areas 78C/78D Coho Upper Skagit Tribe:								
Week 39	1 day	149	149	None	0	0	-149	-149
Week 40	2 days	157	157	0.125 days	0	0	-157	-157
Week 41	2 days	106	106	0.125 days	0	0	-106	-106
Week 42	None	0	0	Same	0	0	0	0
Week 43	None	0	0	1.375 days	0	0	0	0
Areas 8/78C Chum Swinomish/Sauk-Suiattle Tribes:								
Week 45	1 day/1day	0	0	None	0	0	0	0
Week 46	1 day/1/day	0	0	None	0	0	0	0
Area 78C/78D Chum Upper Skagit Tribe:								
Week 46	1 day	0	0	None	0	0	0	0
Week 47	1 day	0	0	None	0	0	0	0
Total Skagit Terminal Area		**6,760**	**6,763**		**6,287**	**6,287**	**-473**	**-476**

2.4 Stillaguamish/Snohomish Terminal Area

The tribal Chinook fishery in Area 8D opened, as planned, in week 19. Most landings occurred in weeks 21 – 29; there was little fishing effort in weeks 30 – 38. Catch during the Chinook management period was 1,489, compared with the pre-season projection of 2,195. One Chinook was caught during the Area 8D coho fishery; the pre-season projection was five.

Non-treaty fisheries targeting coho opened in Area 8D in week 39, with openings continuing throughout the coho and chum management periods. No Chinook were landed by gillnet during those openings, and there were no landings by purse seine during the fishery.

The tribal C&S fishery in Area 8A caught 48 Chinook, compared with the pre-season projection of 100. Incidental Chinook catches during the treaty pink and coho fisheries were 38 and 10, respectively, which were substantially lower than pre-season projections of 509 and 182, respectively.

There were non-treaty fishery openings targeting pink salmon in Area 8A in weeks 34 and 35. A total of 15 Chinook were landed by the gillnet fleet. Based on onboard sampling, there were an estimated 39 Chinook release mortalities during the purse seine openings. Non-treaty coho fisheries in Area 8A began with a two-boat limited participation purse seine opening in weeks 40 and 41, followed by a full purse seine opening in week 42. Gillnets were open on one day in week 41, and two days in week 46. There were an estimated 3 Chinook mortalities during the purse seine coho openings. No Chinook were landed by gillnet during coho management. There were no openings for non-treaty chum fishing in 2009.

The tribal C&S fishery in the Stillaguamish River caught two Chinook; the pre-season projection was 58.

Table 7. Projected and actual Chinook catch in 2009 net fisheries in the Stillaguamish – Snohomish terminal area.				
Area		Projected[1/]	Actual[2/]	Difference
8A Chinook	Trty	100	48	-52
	Ntrty	--		
8A pink	Trty	509	38	-471
	Ntrty	23	15	-8
8A Coho	Trty	182	10	-172
	Ntrty	0	0	0
8A Chum	Trty	2	0	-2
	Ntrty	N/A	N/A	N/A
8A Test	Test	6		
8D Chinook	Trty	2,195	1,490	-705
	Ntrty	N/A		
8D Coho/Chum	Trty	5	1	-4
	Ntrty	1	0	-1
Stillaguamish R. Net	Treaty	58	2	-56
Total		3,081	1,604	-1477

2.5 South Puget Sound Terminal Areas

Table 8 compares projected and actual catches for 2009 South Puget Sound treaty fisheries. Descriptions of the fisheries by terminal area are in the following sections.

Table 8. Pre-season projections and actual Chinook catch in 2009 South Puget Sound Treaty terminal net fisheries.

	Management Period	Projected Catch	Actual Catch	Difference
Area 9	Chinook (C&S)	700	0	-700
	Chum	Included in Area 10		
Area 10/11	Coho & chum test	230	28	
	Coho & Chum	526	0	-728
Area 10E	Chinook	2,088	686	-1402
Area 10A	Chinook (test)	383	110	
	Chinook	1,454	870	
	Coho		9	
	Chum			-848
Duwamish River	Chinook	5,136	5,180	
	Coho		87	
	Chum			131
Lake Washington Ship Canal Lake Sammamish	Sockeye (C&S)			
	Coho	1,003	755	
	Chinook	5,000	0	-5,248
Puyallup River	Spring Chinook (C&S)	815	165	-650
	fall C&S		1	
	Chinook/Coho	1,908	1,937	30
Areas 13D-K	Chinook/Coho/Chum	6,890	6,891	1
Area 13A	Chinook/Coho/Chum	4,460	5,262	802
Areas 13C/Chambers	Chinook	5,499	2,937	-2562
Nisqually River	Chinook/coho	13,884	14,004	120

2.5.1 Marine Areas 9, 10 & 11

Chinook bycatch In the Area 10 chum test fishery at Apple Cove Point was 19 (blackmouth). The fishery occurred exactly as planned preseason.

The Area 9 commercial chum fishery was modeled preseason as catching 369 chinook, but the fishery did not occur as planned preseason. Suquamish conducted a smaller-scale commercial chum fishery in Area 9, just north of the Hood Canal bridge) with zero Chinook bycatch. The planned tribal C&S harvest (700) of Chinook in Area 9 did not occur.

The Area 9 chum research fishery, which had been modeled preseason as intercepting 15 chinook, did not occur. Area 9 Chinook catch was input to pre-season models as Area 10/11 (Treaty) in the October thru April timestep, due to insufficient Area 9 net fishery stock composition data in the base period.

The one purse seine treaty pink fishery in Area 10 occurred in late August. Chinook release and on-board observers were required during the fishery, with a cap of 400 Chinook encounters. 49 Chinook were encountered during the fishery. There were 9 Chinook caught during the Area 10 coho test fishery. No Chinook were landed during treaty coho and chum fisheries.

Non-treaty limited-participation (2 boats per gear type) fisheries targeting pink salmon occurred in weeks 35 and 36. These openings required Chinook release, and required a WDFW observer to be onboard the participating vessels. Total estimated Chinook mortality was 37 for purse seine, and 0 for gillnet.

Non-treaty chum fisheries opened in week 43, with openings continuing as scheduled through week 48. Total estimated Chinook mortality was 15 in purse seine gear and 2 in gillnet gear.

2.5.2 Lake Washington

For 2009 tribal fisheries in the lower (marine) and upper (freshwater) area of the Ship Canal, and Lake Union (10F), management periods were weeks 28 - 32 for sockeye, weeks 33 – 36 for chinook and 38 – 45 for coho. The coho fishery management period in North Lake Washington (10G) was weeks 41 – 45. For the fisheries in Lake Sammamish (10D), management periods were weeks 36 – 40 for chinook and weeks 41 – 45 for coho.

The 2009 Lake Washington sockeye return was far below the forecasted value and did not provide for directed commercial or recreational fisheries. The only sockeye fishery conducted was the annual test fishery for the Pacific Salmon Commission with no incidental chinook being caught. Due to the extreme low run of sockeye in-season all tribal ceremonial & subsistence fisheries remained closed.

The in-season data showed that the chinook run was well below the forecasted value and therefore did not trigger any discussions between the co-managers and NOAA pertaining to a directed fishery.

The coho return to Lake Washington was large enough to allow treaty commercial openings in the Ship Canal and in Lake Union. The North end (10G) of Lake Washington was kept closed to protect sockeye. The Suquamish Tribe caught 50 incidental chinook during their coho fisheries in the marine portion of the Ship Canal, while the Muckleshoot Tribe caught 705 chinook during their coho-directed fisheries within freshwater areas of the Ship Canal and Lake Union. This pre-season projected catch in 10G was 1,003. There were no coho- or chinook-directed fisheries in Lake Samammish (10D).

2.5.3 Elliott Bay/Duwamish River

For 2009 tribal fisheries in Area 10A, management periods were weeks 29 – 34 for Chinook, weeks 37 – 45 for coho, and 46 – 48 for chum. For fisheries in the Duwamish River (Area 80B), management periods were weeks 32 – 34 for Chinook, week 35 for pinks, weeks 37 – 45 for coho; and weeks 46 – 48 for chum.

The tribes conducted a chinook test fishery in inner Elliott Bay, fishing 5 sites one night a week for three weeks during weeks 29 – 31, prior to any commercial openings. The test catch from 2009 yielded a total of 110 chinook (vs. a projected 437), sufficient to trigger a 12-hour commercial opening in 10A and 80B in week 32. The catch in week 32 (August 5th) exceeded 4,000, indicative of strong abundance which triggered a second 12-hour opening in week 33 (August 12th). The Suquamish Tribe also conducted a 48-hour chinook directed C&S fishery in inner Elliott Bay on August 14th & 15th. Total commercial catches (including C&S) during the chinook management period in 10A and 80B was 870 and 5180 respectively. The planned pink fishery in week 35 in the river did not occur, but substantial harvest of pink salmon was taken in the river during the subsequent coho fishery that occurred from weeks 38 - 45. Total chinook catch for the season (includes all salmon fisheries) was 879 in Elliott Bay (10A) and 5,267 in the Duwamish River (80B). Aggregate total chinook catch in the 80B (5,267) slightly exceeded the pre-season projection of 5,136 while 10A (879) came in lower than the projected 1,454.

2.5.4 Area 10E (Sinclair Inlet)

The Chinook returning to Area 10E are the result of supplementation programs in East Kitsap operated by the Suquamish Tribe. The Sinclair Inlet terminal fishery was conducted as agreed upon in the pre-season fishing plan. Effort included between 3 and 6 gill-netters and between 2 and 4 set-netters. Overall tribal Chinook net catch was 686 (vs projected 2,088) and estimated recreational catch was 202. Including spawner enumeration for Gorst Creek, the estimated total 10E terminal runsize was 1,552 Chinook (only 27% of the preseason expectations). Due to rearing losses in 2007, the 2009 forecast return was highly dependent on the three year-old age class contributing at average survival rates. The 2009 forecast back to Sinclair Inlet was approximately 5,700, with around 97% being 3 year olds. The survival for this brood was a fraction of the prediction, consequently, terminal fisheries performed far below preseason expectations.

Two coded-wire tags were recovered from in-stream sampling of Chinook during spawner surveys of Gorst Creek, and two tags were collected from the Gorst fish trap. CWT recoveries for the commercial tribal fishery, fish trap and from in-stream surveys during 2009 have not been analyzed yet.

Intensive area sampling has consistently illustrated an estimated mark rate for Chinook returning to Sinclair Inlet of over 75% (commercial fisheries) and 83% (in-stream spawning surveys). These mark rates will likely be even higher when analyses of DIT contribution from Grovers Hatchery facility are completed. 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.

2.5.5 Puyallup River

Spring Chinook

The Muckleshoot and Puyallup tribes' ceremonial & subsistence (C&S) spring Chinook fisheries during May and June in the Puyallup and White rivers caught 165 spring Chinook. The preseason catch projection was 239. A preliminary estimate indicates the terminal harvest rate was about 8%:

observed catch / (catch + escapement) = 165 / (165 + 1712) = 0.08

This was substantially lower than the pre-season projection of 15%.

The Puyallup Tribe C&S fishery operated from week 24-25 with a total catch of 47 Chinook. The Puyallup fishery was opened 3 to 10 hours per day, for 1-2 days each week. The First Fish Ceremony fishery on June 13 caught 10 Chinook. During week 25, the fishery was opened June 16-17 to Puyallup tribal elders. Each of these two days the fishery was open from 8 am to 6 pm, with a total catch of 17. In week 26 the fishery was open from 8 am to 6 pm on June 26th to all Puyallup tribal members; catch was 20. No fisheries were scheduled after June 26th due to the low numbers of Spring Chinook returning to the Buckley Trap.

PTOI fisheries staff sampled 40 of the 47 Chinook caught during this time, with 11 of the 40 being identified as fall Chinook by their adipose clips. This expands to estimates of 13 fall Chinook, and 34 spring Chinook in the PTOI C&S fishery.

The Muckleshoot Tribe's ceremonial & subsistence (C&S) fishery in the Puyallup (81B) and White (81C) Rivers started May 15th (week 20) ending June 23rd (week 26) The total number of chinook caught was 118 (110 in the White River and 8 in the Puyallup River). Starting in early September (week 37) a coho C&S fishery was open in both rivers. During this time period the fishing effort was very limited due to the large number of pink salmon that were being encountered. No chinook were incidentally caught

Fall Chinook

The Puyallup tribal net fishery in the Puyallup River caught 1,937 Chinook; pre-season projected catch was 1,908.

The Puyallup Tribe did not conduct a test fishery in weeks 30-33 due to the low forecast of fall Chinook. The Tribe's C&S fishery for the Pow-Wow caught one Chinook; the pre-season projection of C&S catch was 175. The Tribe's commercial fishery began in week 35; the 12 hour opening on August 23 caught 1264 Chinook. The second commercial opening was a 24 hour opening in week 36 (the first week of the coho management period), with 361 Chinook landed. Subsequent opening during the coho management period, were two days per week in weeks 37 – 39, and three days per week in weeks 40 – 42.

Tribal fishing effort during the initial opening in week 35 was higher than in previous years (56 landings, compared to 24 landings in 2005). Estimation of the terminal harvest rate will not be available until the Puyallup River sport catch estimate is completed.

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

Chambers Bay (13C) and Carr Inlet (13A)

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 5,499 Chinook was modeled pre-season for Chambers Bay (13C) treaty fisheries, whereas actual catch there was 2,937. The lower-than-predicted catch was due to lower extreme terminal runsize than forecast. A harvest rate of 0.94 was the modeled for Chambers Bay, while the actual post-season harvest rate was 0.95.

In Carr Inlet, a fixed total catch of 4,460 Chinook was modeled pre-season, while actual catch totaled 5,262, or 18% higher than predicted. 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. Continued restrictions on directed Chinook fishing in the Puyallup River, and continued favorable market conditions in 2009 likely prompted tribal fishermen to direct more fishing effort into area 13A.

Area 13D-K (Deep South Sound)

Tribal fisheries in Areas 13D-K occurred as scheduled in pre-season planning. A total of 6,891 Chinook were caught, identical to the preseason projection 6,890. The majority of these Chinook are projected and caught in Budd Inlet (Area 13F), and included 100 Chinook taken by the C&S fishery. Incidental Chinook catch during coho fisheries was 245.

Nearly all Chinook returning to Area 13D-K are of Deschutes hatchery origin, meaning that if catches are higher than expected, there is 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 30 – 37 (July 19 - September 9), 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 two weeks later than originally planned. The tribal coho fishery was open October 4th through November 18th. Tribal Chinook catch of 14,004 was low compared to 2006-2007 but very similar to 2008.

Weekly sampling rates for the commercial net fishery ranged from 20% to 66%, averaging 38%. Sampling indicated that about 8% of the catch were un-marked Chinook. In 2008 unmarked Chinook were about 15% of the catch.

Nisqually tribal and WDFW technical staff calculated three in-season updates of Chinook terminal abundance, based on catch rates observed in the river fishery (Table 9).

Table 9. 2009 in-season estimates of the terminal abundance of Nisqually Chinook.

ISU Date	Projected abundance
19-Aug	43,182
23-Aug	42,882
30-Aug	37,716

The tribal fishing schedule was not altered based on the in-season estimates. These estimates were viewed with caution because fishing effort was high due to the favorable market ($1.00-$2.50 per pound ex vessel value for the entire season), and because low flow conditions were suspected to be causing Chinook to hold in the estuary. The ISU model uses historical catch data, and assumes fishing effort is constant.

Total natural escapement was 872, compared to the escapement goal of 1,200. The hatchery rack return was 6,261 adults and 9,105 jacks. Based on tribal net catch and escapement, the total runsize, excluding jacks, was 21,157, around 5,000 less than the

pre-season forecast. Based on this runsize, which does not include sport catch, the tribal in-river harvest rate was 66%, compared to the pre-season planning projected harvest rate of 44%. The actual rate, which cannot be calculated until sport catch data are available, will be somewhat lower than 66%.

2.6 Hood Canal

For 2009 fisheries Chinook management periods were defined as follows: Areas 12, 12B, 12A, and 9A closed: in Area 12C weeks 30 (week beginning July 19) thru 35 (wb August 23); in Area 12H week 30 thru 39 (wb September 20); in the Skokomish River weeks 32 (wb August 2) through 38 (wb September 13). Coho management periods were defined as follows: in Area 9A weeks 35 – 48; in Areas 12, 12B, 12C, and 12H sequenced from weeks 39 – 43 (wb October 18); in Area 12A weeks 35 – 41 (wb October 4); and in the Skokomish River weeks 39 – 44 (wb October 25).

The tribal coho fisheries in Areas 9A and 12A occurred as planned, and involved incidental catch of 16 and zero Chinook, respectively. Non-treaty beach seine fisheries targeting coho were open in Area 12A opened in week 35, and continued through week 39. There were single day gillnet openings in weeks 36-38. GN fishing was closed after week 38, due to decreased coho abundance and increased encounters of summer chum. These openings were Chinook and chum non-retention of chum for both gears. 13 beach seine and 10 skiff gillnet sets were observed by WDFW staff during the fishery. No Chinook were encountered during those sets, so the total Chinook mortality estimate for the fishery is 0. The non-treaty skiff gillnet fishery in Area 9A opened in week 35, and continued as scheduled through week 44. Chinook retention was prohibited in this fishery. No on-board observation data is available for estimation of Chinook mortality.

There were no significant deviations from the fishing regime developed pre-season for the other marine-area fisheries in Hood Canal or in the Skokomish River. The tribal Chinook and coho fisheries in mainstem Hood Canal (Areas 12/12B/12C/12D) caught 4,665 Chinook; all but about 200 of these were taken during the Chinook management period (Table 10). The majority of this catch was projected to and did occur in southern Hood Canal (12C/12D), due to closure of the northern areas during Chinook migration. The tribal fishery in Area 12H caught 10,433 Chinook, 9% more than the pre-season projection of 9,558. The tribal fishery in the Skokomish River and Purdy Creek caught 6,018 Chinook; 150 were taken incidentally during the coho fishery. The river catch was 13% higher than the pre-season projection.

Table 10. Projected and actual Chinook catch in 2009 terminal-area fisheries in Hood Canal.

Area		Species	Projected Catch	Actual Catch
Port Gamble (9A)	- Treaty	CK/CO/CH	81	16
	- Non-Treaty	CO	0	0
Quilcene Dabob (12A)	- Treaty	CO	166	0
	- Non-Treaty	CO	0	0
Mainstem Hood Canal	- Treaty	CK/CO/CH	2,070	4,665
(12/12B/12C/12D)	- Non-Treaty	CH	6	0
Hoodsport Zone (12H)	- Treaty	CK/CH	9,558	10,433
Skokomish River (82G/J)	- Treaty	CK/CO/CH	5,346	6,018
		Total	17,227	21,124

Non-treaty chum fisheries opened in Areas 12/12B as scheduled in week 43, and remained open through week 47. There were also openings in area 12C during weeks 46-48. No Chinook were landed by gillnet during those openings. Based on onboard observations during purse seine openings, there were an estimated 37 Chinook purse seine release mortalities.

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 11).

The tribal coho fishery in Area 6D operated, as planned, 7 days per week from September 21 through November 4. Tribal regulations require nets to be attended, day time fishing only, and release of Chinook and chum through October 10. The tribal coho fishery in the lower Dungeness River started October 16, so no Chinook mortality occurred.

The non-treaty skiff gillnet fishery in Area 6D opened in week 39 and continued as scheduled through week 43, 5 days per week. Chinook retention was prohibited in this fishery. No on-board observation data is available for estimation of Chinook mortality.

The tribal ceremonial fishery in the Elwha River occurred in July, and caught 4 Chinook.

Table 11. Projected and actual Chinook catch in 2009 terminal-area fisheries in the Strait of Juan de Fuca region.

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

2.8 Non-Treaty Commercial Monitoring Data and Total Mortality Estimates

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 2009, efforts were concentrated on purse seine openings in Areas 7/7A, 8A, 10/11, and 12/12B. Summaries of observer data for 2009 are presented in Table 12. Expanded estimates of total mortality, where available, were presented above in the summaries for individual fisheries, and are summarized and compared to pre-season expectations in below in Table 13.

Table 12. Summary of commercial fishery observation data for 2009 Puget Sound non-treaty net fisheries.

Area	Gear type	# sets observed	Chinook	Coho	Sockeye	Pink	Chum	Steelhead
10	GN	3	0	1	0	39	2	0
10	PS	95	113	719	1	82,460	2,310	2
11	PS	53	0	25	0	1	3,485	0
12	PS	45	4	93	0	0	2,098	0
12A	BS	13	0	265	0	0	21	0
12A	GN	10	0	152	0	0	20	0
12B	PS	53	2	143	0	0	4,633	0
12C	PS	4	0	1	0	0	20	0
7	PS	76	47	475	839	99,502	1,467	1
7	RN	21	3	3	19	1,380	0	0
7A	PS	84	170	206	522	103,434	162	1
8	PS	14	13	7	0	2,211	0	0
8A	PS	43	31	61	1	17,071	11	4

Table 13. Total pre-season projected and post-season estimated Chinook mortality (landed + released) in Puget Sound non-treaty commercial salmon fisheries in 2010.

Area	Total Mortality (released + landed) Projected	Actual
6D	1	N/A
7/7A	3,413	671
8	5	59
8A	25	57
10-11	684	54
12/12B	15	37
9A	6	N/A
12A	2	0

2.9 Commercial Catch 2004-2008

Table 14 and Table 15 show recent commercial Chinook catches in treaty and non-treaty fisheries, including ceremonial, subsistence and take home catches reported on fish tickets for 2004-2008.

Table 14. Total Chinook catch in PFMC and Puget Sound treaty salmon fisheries, 2004-2008. PFMC totals based on PFMC historical data documents, others based on May 2010 TOCAS query.

	2004	2005	2006	2007	2008
PFMC treaty troll	49,735	41,975	30,545	22,943	20,902
JDF winter troll	20,750	5,344	998	4,345	1,824
4A/4B/5/6/6C	682	181	995	111	4,581
Elwha R	0	4	4	4	4
6D	0	2	3	1	0
7/7A	4,056	3,674	5,149	2,587	55
7B/7C/7D	5,564	6,139	11,809	9,658	11,700
Nooksack River	450	614	582	1,405	1,374
8	5	155	4	0	8
Skagit River	545	2,482	1,694	1,807	3,636
8A/8D	6,121	7,881	5,804	6,129	3,596
9	135	27	106	8	0
10	157	47	176	169	16
10A	4,011	848	2,202	1,429	991
Duwamish River	5,085	1,230	5,645	10,339	9,095
10C/10D/10F/10G	848	835	1,985	6,940	4,166
10E	3,357	3,718	5,059	4,097	1,229
11	0	0	6	4	6
11A	0	0	19	0	0
Puyallup River	3,600	2,576	2,500	3,236	2,896
White River	97	149	232	418	344
13	3	739	14	5	0
13A	1,045	3,156	5,958	8,733	9,164
13C / Chambers Cr	3,786	3,913	4,432	11,608	6,978
13D	253	134	1,629	94	2,819
13F	630	3,197	2,416	8,261	7,221
13F/13K	0	0	0	0	290
Nisqually River	13,743	11,185	21,438	23,107	13,898
9A	2	0	54	79	20
12A*	7	0	146	0	185
12/12B/12C/12D*	1,653	2,855	2,377	1,918	4,266
12H*	9,092	21,774	13,903	5,170	6,619
Skokomish R / Purdy Cr*	4,092	7,482	6,852	8,475	5,416

*Data are preliminary and are being reviewed and reconciled between Tribal, State, and NWIFC catch databases.

Table 15. Chinook catch in non-treaty Puget Sound Commercial salmon fisheries, 2004-2008, based on WDFW LIFT data.

Area	2004	2005	2006	2007	2008
7/7A	25	162	145	0	0
7B/7C	5,008	6,064	13,151	6,781	6,084
8	0	0	0	0	0
8A/8D	1	0	0	1	6
10/11	8	7	2	1	15
9A	0	0	0	0	0
12	0	3	0	2	0
Total	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 2009-2010 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 2008-2009 management year are also included here.

3.1 2008-2009 Recreational Catch

Total Recreational Chinook harvest in 2008-09, estimated from a combination of Catch Record Cards (CRC) and creel estimates where available, was around 45,800, compared to a preseason projection of 47,100. 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 higher than expectation. Catches in other marine areas were generally at or below projection. Projected and actual catches by area are presented in Table 16.

Table 16. Projected (FRAM 2108) and actual (Creel & preliminary CRC-based) Chinook catches in Puget Sound Recreational Fisheries during the 2008-2009 season.

Area/Fishery	Projected	Actual
Area 5-6		
MSF (July-August)	4,000	3,350
Other	730	1,149
Strait Tributaries	0	0
Area 7	2,536	3,526
Nooksack/Samish FW	4,306	5,010
Area 8-1 & 8-2		
MSF	1,449	1,566
Skagit River		
Spring MSF	451	283
Area 8D SAF	1,033	116
Stillaguamish River	0	0
Snohomish River		
Skyokomish MSF	211	572
Area 9		
Summer MSF	4,000	4,048
Other	2,308	1,266
Area 10		
Area 10 Summer MSF	3,000	1,034
Area 10 other	924	952
Area 11		
Area 11 MSF	7,178	7,400
Area 11 other	906	511
Area 10E SAF	950	1,024
Lake Washington		12
Lake Sammamish	153	217
Area 10A SAF	4,050	1,710
Green River	700	122
Puyallup River		
Carbon R MSF	1,099	734
Puyallup R MSF	358	800
Area 13		
Area 13 Summer MSF	733	1,299
Area 13 other	353	57
Chambers Cr	45	76
Nisqually/McAllister	1,084	1,586
Deschutes	177	164
Area 12	891	1,355
Skokomish River	3,500	5,826

3.2 2009-2010 Recreational Catch

3.2.1 Expected catch

Projected Chinook catches in 2009-2010 recreational fisheries are listed in Table 17. Total projected catch was 56,500. 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, 11, 12 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 17. Intense sampling efforts were applied to marine area selective fisheries throughout the year, meaning that creel estimates available for the many of those fisheries. Brief summaries of results of the creel 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 17. Projected (FRAM 2309) and actual (preliminary, where available) Chinook catches in Puget Sound recreational fisheries during the 2009-2010 season.

Area/Fishery	Projected	Actual
Area 5-6		
MSF (July-August)	4,500	6,047 *
Other	858	
Strait Tributaries	0	
Area 7	4,353	
Non MSF		
MSF (January-April)		954**
Nooksack/Samish Freshwater	4644	
Area 8-1 & 8-2		
MSF	1,539	906**
Skagit River		
Spring MSF	307	
Summer	752	116
Area 8D SAF	1,033	
Stillaguamish River	0	
Snohomish River		
Skyokomish MSF	171	
Area 9		
Summer MSF	8,851	3,248
Winter MSF	2,545	1,606**
Area 10		
Area 10 Summer MSF	2,923	1,643
Area 10 Winter MSF	1,781	335
Area 11		
Area 11 Summer MSF	6,438	3,318
Area 11 other	281	
Area 10E SAF	960	
Lake Sammamish	257	
Area 10A SAF	1,930	1,480
Green River	400	
Puyallup River		
Carbon R MSF	1,264	
Puyallup R MSF	772	
Area 13		
Area 13 Summer MSF	1,015	
Area 13 other	168	
Chambers Cr	46	
Nisqually	1,970	
Deschutes	227	
Area 12	612	
Skokomish River	5,864	

* Area 5 only

** Estimate through February 28

3.2.2 Marine Areas 5 & 6 Summer MSF

2009 was the 7th year of a summer mark-selective Chinook fishery in marine areas 5 & 6. The 2009 fishery was scheduled to open for a set season, July 1 through August 15.

WDFW conducted comprehensive fishery monitoring activities during the Areas 5 and 6 mark-selective fisheries (WDFW 2010a). The study designs used in the two areas during 2009, however, differed markedly from those previously employed (2003-2008). First, a scaled-back version (i.e., with fewer sites and days sampled) of the former dockside sample design (i.e., Intensive or "Murthy" [probability-based] sampling) 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. In addition, 2009 was the first season in which a test fishing vessel was not operated in Area 5. 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 component. In both Areas 5 and 6, an enhanced Voluntary Trip Report (VTR) program was used to obtain estimates of Chinook encounter rates by size class (legal or sub-legal) and mark status (ad-marked or unmarked), similar to our approach used successfully during summer 2008.

For Area 5, a total of 6,047 Chinook were estimated to have been landed (5,696 marked and 351 unmarked,Table 18). An estimated total of 29,791 Chinook were released (10,093 marked and 19,698 unmarked).

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.

Because in-season estimates of unmarked Chinook encounters were higher than pre-season model projections, particularly for sub-legal sized Chinook, the fishery in Areas 5 and 6 was closed to Chinook retention earlier than scheduled, on August 6.

Table 18. Comparison of modeled (i.e., using FRAM, model run 2309) and estimated total Chinook encounters for the Area 5, July 1-Aug. 6, 2009 mark-selective Chinook fishery.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	6,574	4,319	2,255	86
	Mark.	11,464	5,074	6,390	4,414
	Total	18,038	9,393	8,645	4,500
	% Mark.	64	54	74	98
Estimated (Creel) Encounters	Unmark.	20,049	6,015	14,035	351
	Mark.	15,789	5,326	10,463	5,696
	Total	35,838	11,340	24,498	6,047
	% Mark.	44	47	43	94

3.2.3 Marine Area 7 Winter MSF

Starting December 1, 2009, the WDFW began monitoring the third year of a Chinook season under mark-selective harvest regulations in Marine Area 7, the first year of an extended winter MSF season. The fishery remained open through April 15, so final results are not yet available. Preliminary results (through February 28) are presented in Table 19 below (from WDFW 2010b). Estimated encounters have been below modeled expectations for all mark and size groups through February.

Table 19. Predicted (modeled) versus observed (preliminary field estimates) of marked and unmarked Chinook encounters due to the Area 7 winter selective Chinook fishery (season: December 1, 2009 – April 30, 2010). *

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	3,573	1,173	2,400	94
	Mark.	7,564	2,374	5,190	2,065
	Total	11,137	3,547	7,590	2,159
	% Mark.	68	67	68	96
Estimated (Creel) Encounters	Unmark.	940	705	235	0
	Mark.	1,730	1,103	627	954
	Total	3,670	1,808	862	954
	% Mark.	65	61	73	100

*Predictions are for the entire Area 7 winter season and are based on pre-season FRAM model run 2309. Observations are DRAFT estimates of Chinook encounters from creel surveys for the sampling period from December 1, 2009 through February 28, 2010.

3.2.4 Marine Areas 8-1 & 8-2 Winter MSF

On November 1, 2009 the Puget Sound Sampling Program began intensively monitoring the fifth year of a selective Chinook fishery in Areas 8-1 and 8-2. The fishery remained open until April 30, so final results are not yet available. Draft estimates of encounters and catch through February 28 are presented below in Table 20 (from WDFW 2010b). Estimated encounters have been below modeled expectations for all mark and size groups through February.

Table 20. Predicted (modeled) versus observed (preliminary field estimates) of marked and unmarked Chinook encounters due to the 2009-10 Areas 8-1 and 8-2 winter selective Chinook fishery. *

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	6,129	1,119	5,010	67
	Mark.	10,832	1,692	9,140	1,472
	Total	16,961	2,811	14,150	1,539
	% Mark.	64	60	65	96
Estimated (Creel) Encounters	Unmark.	946	248	698	4
	Mark.	3,005	1,036	1,968	902
	Total	3,951	1,284	2,666	906
	% Mark.	76	81	74	100

*Predictions are based on pre-season FRAM model run 2309. Observations are DRAFT estimates of Chinook encounters from creel surveys for the sampling period from November 1, 2009 to February 28, 2010.

3.2.5 Marine Areas 9 & 10 Summer MSF

In 2009, a recreational mark-selective fishery occurred for the third consecutive year in marine areas 9 and 10. Unlike in the previous year, the 2009 fishery was managed as a fixed season, from July 16-August 31, rather than being managed to a quota. As in the previous two years, WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program in Areas 9 and 10 during their summer seasons in order to collect the data needed to provide in-season catch estimates and to estimate key parameters characterizing the fishery and its impacts on unmarked salmon.

Total harvest in Areas 9 and 10 was estimated to be 3,248 and 1,643 Chinook, respectively (4,850 total, Table 21 (from WDFW 2010c)). Anglers released an estimated 12,895 Chinook (8,718 marked, 4,177 unmarked) in Area 9 and 3,807 Chinook (2,708 marked, 1,099 unmarked) in Area 10 (16,702 estimated releases overall). In-season estimates of encounters of unmarked Chinook were lower than pre-season projections in both areas.

Table 21. Comparison of modeled (i.e., using FRAM, model run 2309) and estimated total Chinook encounters for the Areas 9 and 10 July 16-August 31, 2009 mark-selective Chinook fisheries.

Marine Area	Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
9	FRAM Encounters	Unmark.	8,469	3,334	5,135	67
		Mark.	27,022	10,097	16,925	8,784
		Total	35,491	13,431	22,060	8,851
		% Mark.	76	75	77	99
	Estimated (Creel) Encounters	Unmark.	4,196	1,291	2,905	20
		Mark.	11,946	3,552	8,395	3,229
		Total	16,143	4,843	11,300	3,248
		% Mark.	74	73	74	99
10	FRAM Encounters	Unmark.	3,334	1,264	2,070	25
		Mark.	8,436	3,331	5,105	2,898
		Total	11,770	4,595	7,175	2,923
		% Mark.	72	73	71	99
	Estimated (Creel) Encounters	Unmark.	1,121	104	1,017	22
		Mark.	4,329	1,725	2,604	1,621
		Total	5,450	1,829	3,621	1,643
		% Mark.	79	94	72	99

3.2.6 Marine area 9 Winter MSF

On November 1, 2009, the Puget Sound Sampling Program began monitoring the third 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 January 16 through April 15, 2009. Final results are not yet available. Draft estimates of impacts through February 28 are presented below, in Table 22 (from WDFW 2010b). Estimated encounters have been below modeled expectations for all mark and size groups through February.

Table 22. Predicted (modeled) versus observed (preliminary field estimates) of marked and unmarked Chinook encounters due to the Area 9 winter selective Chinook fishery in 2009-10.*

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	3,654	959	2,695	58
	Mark.	11,699	2,859	8,840	2,487
	Total	15,353	3,818	11,535	2,545
	% Mark.	76	75	77	98
Estimated (Creel) Encounters	Unmark.	1,153	347	806	27
	Mark.	4,482	1,815	2,667	1,579
	Total	5,635	2,162	3,473	1,606
	% Mark.	80	84	77	98

*Predictions are for the entire winter season in Area 9 and are based on pre-season FRAM model run 2309. Observations are DRAFT estimates of Chinook encounters from creel surveys for the sampling period from November 1-30, 2009 and January 16 - February 28, 2010.

3.2.7 Marine area 10 Winter MSF

For the period from October 1, 2009 through January 31, 2010, WDFW monitored the third year of a selective Chinook fishery in Area 10 during the winter season. Draft results from that monitoring are presented below in Table 23 (from WDFW 2010b). Actual encounters were well below modeled encounters in all categories. Finalized results will be available at a later date.

Table 23. Predicted (modeled) versus observed (preliminary field estimates) marked and unmarked Chinook encounters due to the Area 10 selective Chinook fishery from October 1, 2009 through January 31, 2010. Predictions are based on pre-season FRAM model run 2309.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	7,138	3,943	3,195	45
	Mark.	9,411	1,996	7,415	1,736
	Total	16,549	5,939	10,610	1,781
	% Mark.	57	34	70	98
Estimated (Creel) Encounters	Unmark.	964	82	882	3
	Mark.	2,782	382	2,400	332
	Total	3,746	464	3,282	335
	% Mark.	74	82	73	99

3.2.8 Area 11 Summer MSF

A summertime recreational mark-selective fishery was implemented for the third season in Area 11 in 2009, running from June 1 through September 30. WDFW's Puget Sound Sampling Unit (PSSU) implemented an intensive monitoring program in Area 11 to collect the data needed to provide in-season catch estimates and to estimate key parameters characterizing the fishery and its impacts on unmarked salmon. An estimated total of 3,318 Chinook were landed during the fishery (Table 24 (from WDFW 2010d)). Anglers released an estimated 8,903 Chinook (4,310 marked, 4,593 unmarked). Overall, 2009 catch rates for Chinook (retained Chinook per angler trip) were lower than those observed in Area 11 during the summers of 2007 and 2008. Effort levels (estimated angler trips) in Area 11 were similar in 2009 compared to 2008.

Table 24. Comparison of modeled (i.e., using FRAM, model run 2309) and estimated total Chinook encounters for the Area 11 summer 2009 mark-selective Chinook fishery, June 1-September 30, 2009.

Data Source	Group	Total Encounters	Legal	Sublegal	Landed Only
FRAM Encounters	Unmark.	5,987	1,642	4,345	33
	Mark.	21,137	7,362	13,775	6,405
	Total	27,124	9,004	18,120	6,438
	% Mark.	78	82	76	100
Estimated (Creel) Encounters	Unmark.	4,630	1,295	3,335	37
	Mark.	7,592	3,636	3,955	3,281
	Total	12,221	4,931	7,290	3,318
	% Mark.	62	74	54	99

3.2.9 Area 11 Winter MSF

Starting February 1, 2010, the Puget Sound Sampling Program began monitoring the first year of a Chinook season under mark-selective harvest regulations in Marine Area 11, which remained open through April 30, 2010. For the sampling period from February 1 to February 28, 2010, an estimated total of 111 Chinook (all marked) were retained in 1,321 angler trips in Area 11 (WDFW 2010b). In addition to landed catch, an estimated 98 Chinook were released (all marked). In total, 209 Chinook were encountered (retained plus released) in Area 11 during the sampling period from February 1 through February 28, 2010. Results for the entire season will be available at a later date.

3.2.10 Skagit Spring and Summer

The Skagit spring Chinook mark selective fishery took place as scheduled from June 1 through July 15. A creel survey was not conducted in 2009, so total mortality estimates will not be available until sometime in the future. For forecasting purposes 288 marked hatchery fish were estimated to have been retained in the fishery and 2.5 release mortalities of unmarked hatchery fish for 290.5 total hatchery mortalities. One hundred unmarked fish were estimated to have been released and at 10% release mortality, ten

were assumed to have died. Of those ten fish, given FRAM calculated unmark mortalities as 25% hatchery and 75 % wild, of the ten release mortality Chinook, 7.5 were natural fish for total preliminary estimated natural mortality. The pre-season projection of 320 hatchery and 30 natural fish mortality was more than the preliminary, postseason estimate by 119.5 hatchery and 22.5 wild fish.

A recreational fishery allowing retention of Chinook was open in the lower Skagit River, for 3 days per week from July 9 through August 9. WDFW conducted creel surveys throughout the fishery, with a total estimated Chinook harvest of 116 adults and 82 jacks, well below the projected catch of 744.

3.2.11 Puyallup 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 Puyallup River in 2009. 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 2009 survey was 77 percent. As with most years, CPUE was highest during the first week of the fishery, but quickly dropped to levels below the average of past years. A total of 39 Chinook were sampled during the fishery, with 100% being adipose clipped, and none having a CWT.

3.2.12 Carbon River Creel

The Washington Department of Fish and Wildlife (WDFW) conducted a seventh year of creel surveys during the recreational mark selective Chinook fishery on the Carbon River in 2009. 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 42 reported Chinook caught and released, 72 percent were marked, 21 percent were not marked, and mark status was unknown (anglers did not remember the mark status) for the remaining 7 percent. Biological data (scales for age analysis, fork length, identification for sex, and check for CWT) were collected from 78 Chinook. The mark rate of sampled Chinook was 99 percent during the fishery. One harvested Chinook was unmarked. No CWT's were recovered. As in past years, CPUE during the first week of the fishery was the highest, but quickly dropped to levels below the average of past years.

3.3 2004-2008 Recreational Catch

Landed catches of Chinook by recreational fisheries by area from 2004 through 2008 are presented in Table 25. Based on preliminary data for 2008, recreational Chinook catches in 2008 were down from the peak in 2007 in marine and freshwater areas.

Table 25. Recreational Chinook catch in Puget Sound, 2004-2008. 2008 data are preliminary.

Marine Area	2004	2005	2006	2007	2008
5	3,865	1,955	4,350	5,028	3,294
6	1,135	470	954	1,898	1,205
7	2,265	2,099	3,325	4,959	3,526
8.1	406	493	427	808	679
8.2	2,057	1,411	1,732	1,333	887
9	1,591	1,710	1,141	7,754	5,314
10	4,282	2,732	4,370	8,495	4,720
11	8,318	7,477	9,143	14,165	7,911
12	2,017	2,556	1,881	2,815	1,356
13	1,185	1,855	2,189	3,102	1,356
Marine total	**27,121**	**22,758**	**29,512**	**50,357**	**30,363**
Freshwater Region					
Straits	19	17	0	15	0
Nook-Sam-Whatcom	1,061	4,069	6,645	6,380	5,010
Skagit	35	141	648	885	283
Stilly-Sno	177	217	233	717	572
South Sound	2,529	3,340	4,282	6,550	3,711
Hood Canal	1,964	4,460	5,313	5,235	5,826
Freshwater total	**5,785**	**12,244**	**17,121**	**19,782**	**15,402**
Marine + FW total	**32,906**	**35,002**	**46,633**	**70,139**	**45,765**

4 Spawning escapement

This section presents natural Chinook escapement estimates for 2009, and compares them to projections from FRAM 2309. Table 26 summarizes upper and lower management thresholds, predicted escapement, and actual 2009 escapement for Puget Sound Chinook management units.

In general, pre-season FRAM projections are made for natural escapement (the number of Chinook spawning naturally). For some MUs where hatchery-origin adults contribute to natural spawning, the FRAM projections of escapement include natural and hatchery-origin fish that spawn naturally. This includes projections for the Skagit, Cedar, Green, Puyallup, Nisqually, Skokomish, Mid-Hood Canal, Dungeness, and Elwha. For the White MU, the projection includes all fish returning to the Buckley Trap or White River Hatchery facilities, including supplementation-origin fish that do not spawn naturally. Natural-origin adults that are used for hatchery broodstock may be included in the projections of natural escapement.

FRAM projects natural-origin escapement for the Nooksack, Skagit Spring, Stillaguamish 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 2009 samples. The comparisons in Table 26 represent the best currently available data for comparing predicted and actual escapements.

Spring Chinook escapement was below predictions for Skagit and Dungeness, at expectation for Nooksack, and above predicted for White River. Nooksack and Dungeness were both below the lower thresholds, while Skagit and White River were above their lower thresholds.

For summer/fall stocks, escapement was considerably lower than predicted for several units, including Skagit, Stillaguamish, Snohomish, Green, Nisqually and Hoko. Returns were closer to predictions, but still below for Lake Washington and Skokomish. Escapement exceeded expectations for the Puyallup, Mid-Hood Canal, and Elwha. Note that the Snohomish comparison presented is not quite correct, as NOR/HOR compositions is not yet available. The Stillaguamish, Green, 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 26. Management thresholds, predicted 2009 escapement, and actual 2009 escapement estimates for Puget Sound Chinook management units.

Management Unit	Upper Management Threshold	Lower Management Threshold	Predicted escapement	Actual escapement
Nooksack	4,000		315[1]	314
North Fork	2,000	1,000		269[1]
South Fork	2,000	1,000		45[2]
Skagit summer / fall	14,500	4,800	17,549	6,955
Upper Skagit summer		2,200		5,290
Sauk summer		400		226
Lower Skagit fall		900		1,439
Skagit spring	2,000	576	1204[1]	978[1]
Upper Sauk		130		367[1]
Cascade		170		338[1]
Suiattle		170		273[1]
Stillaguamish	900	650	875[1]	474[1]
North Fork summer	600	500		431[1,4]
South Fork & MS fall	300			43[5]
Snohomish	4,600	2,000	6,665[1]	2,309[3]
Skykomish	3,600	1,745		1414[3]
Snoqualmie	1,000	521		895[3]
Lake Washington				
Cedar River	1,200	200	1,128	713
North Lake Tributaries				1,161
Green	5,800	1,800	5,813	688
White River spring	1,000	200	1,390	1,712
Puyallup fall		500	1,153	1,526
South Prairie Creek	500			
Nisqually	1,100		1,741	870
Skokomish	3,650 aggregate; 1,650 natural	1,300 aggregate; 800 natural	1,217	1,066
Mid-Hood Canal	750	400	114	129
Dungeness	925	500	786	220
Elwha	2,900	1,000	1,864	2,192
Western SJDF	850	500	1,015	385[6]

1. Natural-origin only.
2. Natural-origin, SF NOR's only, as determined by carcass sampling and DNA analysis .
3. Natural and hatchery origin.
4. Does not include 156 collected for broodstock.
5. No NOR/HOR estimate available. Assumed to be 100% NOR for calculation of MU NOR total.
6. Includes 282 fish taken for broodstock.

4.1 Escapement surveys and estimation methods

4.2 North Puget Sound

4.2.1 Nooksack River

North and Middle forks 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 by the 3.48 expansion factor. This expansion factor was derived by dividing cumulative redd count escapement numbers by the total carcass counts in five separate years and using the average.

From 2005 through 2008, because of lower water flows and higher river bank exposure, it was believed 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, the Middle Fork estimates were calculated using fish per redd (using a standard 2.5 fish per redd expansion factor) and applying the 3.48 expansion factor to estimate the North Fork carcass counts only. The resulting combined number is the NF/MF Nooksack escapement estimate.

In 2009 higher than normal water flows and associated scouring events in the Middle Fork Nooksack limited redd observations during the early Chinook spawning season. As a result, the Co-managers decided to adjust the Middle fork escapement methodology to account for less than optimum viewing conditions. An expansion factor was calculated in a method similar to the North Fork (see explanation above). For the four previous years (2005- 2008) the ratio of escapement based on redd counts (# redds x 2.5) to the number of carcasses observed was calculated (Table 27). The average ratio from those four years was used as an expansion factor for calculation of the 2009 Middle Fork escapement, with a resulting estimate of 170. Based on carcass sampling and otolith analysis, 23 of those 170 fish were NORs (natural-origin recruits).

Table 27. Ratios of redd-based escapement estimates to numbers of carcasses observed for MF Nooksack early Chinook, 2005-2008.

Return Year	MF Redds observed	MF estimate based on redds x 2.5	ALL MF carcasses observed	MF Expansion %
2005	116	290	219	1.32
2006	71	178	150	1.19
2007	106	265	150	1.77
2008	114	285	85	3.35
4-year Average				**1.91**

The main stem North Fork Nooksack River exhibited its characteristic glacial color throughout the summer survey season. The majority of Spring Chinook spawning did take place though in main stem side channels near the mouths of major year round tributaries. The North Fork early Chinook escapement estimate was calculated using the traditional expansion of 3.98 times the number of carcasses observed. A total of 498 carcasses

were observed in 2009, expanding to an estimate of 1,733 Chinook for the North Fork. Based on carcass sampling and otolith analysis, 246 of those were NORs. Summing the estimates for the Middle and North forks leads to a total estimate of 1903 natural spawners, 269 of which were NORs.

South Fork

The South Fork Nooksack early Chinook population escapement estimate methodology has been used since the 2006 estimate. It was also applied retroactively to escapements back to 1999, since these were considered better estimates of the true population abundances. The methodology estimates the number of returning native South Fork Spring Chinook, while also estimating the number of hatchery strays from other sources (primarily Kendall Hatchery origin releases) as well as natural origin (NOR) North/Middle Fork Chinook and NOR Nooksack/Samish summer-fall Chinook.

The basis of the methodology is conducting a total census of redds in their spawning habitat through September, and multiplying this redd count by 2.5 adults/redd. This produces a total estimate of early timed Chinook. Carcasses are sampled and evaluated. Because all production is still wild for this population, the percentage of total carcasses that are determined to be hatchery origin (by adipose fin clip, coded wire tag, and/or unique otolith marks specific to Kendall or Samish Hatcheries) were excluded. The remainder is an estimate of total natural origin Chinook, regardless of stock composition.

Then the total natural origin estimate was separated into different estimates by stock. This is conducted by analyzing tissue samples from natural origin carcass collected through Oct. 7 using microsatellite DNA, with individuals assigned to the best fitting of the three Nooksack DNA baselines (North/Middle Fork early Chinook, South Fork early Chinook, and Samish/Nooksack summer-fall Chinook). Applying the best fit assignment ratios from the analyzed carcasses to the remaining unanalyzed, unmarked carcasses generates stock estimates for all the recovered natural origin carcasses. The final South Fork early Chinook population escapement estimate is determined by including only the percentage of all evaluated carcasses that are natural origin (NOR) to the total early Chinook estimate, then applying the proportion of NORs that were South Fork population by DNA stock assignment.

In 2009 a total of 181 redds were counted to Oct. 1 in the South Fork and its tributaries. Expanding this by 2.5 adults per redd creates an estimate of 453 total early Chinook. A total of 84 carcasses were sampled through Oct. 7 in 2009 in the South Fork and its tributaries. A hatchery mark was detected on 30 (35.71%) of these, and 23 of those had marks identifying them as Kendall Hatchery origin strays. The other 7 included Samish Hatchery origin strays.

The remaining 54 carcasses were NORs (64.28% of all sampled carcasses); since they had no marks identifying them as hatchery strays. Applying 64.28% to the 453 early Chinook results in a total estimate of 290 natural origin Chinook (regardless of stock composition). Of the 54 NOR carcasses, 39 were successfully analyzed by DNA, and assigned to the respective stock baselines. Nine (23.08%) were assigned to the North/Middle Fork population, and 24 (61.54%) were assigned to the Samish/Nooksack summer-fall Chinook stock. The remaining 6 (15.38%) were assigned to the South Fork early Chinook population.

Applying these DNA ratios to the 290 NOR early Chinook results in an estimate of 58 North/Middle Fork NORs, 187 NOR Samish/Nooksack summer-fall Chinook, and a final South Fork early Chinook population escapement estimate 45 Chinook. Applying the

otolith results to the total HOR estimate results in an estimate of 128 Kendall Hatchery origin Chinook,(including 4 pre-spawn mortalities), and 38 hatchery strays from other sources. Table 28 displays these results.

Table 28. 2009 South Fork early Chinook escapement estimate and other Chinook by stock, and origin through Oct. 1.

S Fk Chinook Origin and Stock	Percent of total Chinook	Estimated Chinook
North Fork Hatchery	27.38	128
Other Hatchery	8.33	38
North Fork NORs	12.86	58
Fall Stock NORS	41.43	187
Native South Fork Escapement	10.00	45
Total Chinook to Oct. 1	100.00	453

4.2.2 Skagit River

Escapement estimates for the six populations of Skagit River Chinook were calculated using estimated fish per redd expansions. Redds were counted using one of two methods. In tributaries to the Skagit River and tributaries and upper reaches of the Sauk River, redds were counted by foot or float surveys. Redds in the main stem Skagit River, and in the Sauk River below the mouth of the White Chuck River were counted by helicopter survey. Due to the high cost associated with helicopter charter the number of flight surveys was kept to a minimum, but effective number. First flight for a population generally occurred just after spawning began. Likewise, the final flight may have occurred before spawning was fully completed. Because redds were generally observed during the first flight and may be built after the last flight, actual beginning and end dates of main stem spawning populations were estimated using historical data and field observations.

In addition to looking for redds surveyors also searched for Chinook carcasses. Total numbers of carcasses sampled are presented in Table 29. All accessible carcasses that had not decomposed to the point of disintegration upon disturbance were sampled. Each carcass was electronically sampled for coded wire tag (CWT), and visually examined for any external hatchery marks. Carcasses were also measured for fork length, scale sampled, and sexed. The snout was collected from any carcass identified to be coded-wire tagged. Snouts were tagged with a number referencing other biological information collected and frozen at the lab for later CWT extraction and reading.

In 2009, avian predation and scavenging limited the number of carcasses found from the Suiattle spring, Upper Cascade spring, and Skagit Hatchery spring populations. Normally scavenging by bears removes many carcasses of the Upper Sauk spring population. However, very little bear sign was observed in 2009. For the Skagit summer, Lower Skagit fall, and Sauk summer populations, the limiting factor to locating carcasses generally was the resources available to devote to searching for them.

Table 29. Chinook carcasses sampled from the six Skagit River Basin populations.

	N				Escapement	
Chinook population	Sampled	Unmarked	CWT[*1]	AD[*2]	N	% sampled
Suiattle spring	12	12	0	0	273	4.4
Upper Cascade spring	7	7	0	0	338	2.1
Upper Sauk spring	81	79	2	0	367	22.1
Skagit summer	498	464	30	4	5,290	9.4
Sauk Summer	0	0	0	0	250	0
Lower Skagit fall	51	48	3	0	1,439	3.5
Skagit hatchery spring	18	8	9	1	315	5.7

[*1] Coded wire tagged

[*2] Adipose clipped only

Through most of 2009 Chinook spawning, weather and flow conditions were favorable for conducting surveys and identifying redds. However October rainstorms elevated stream flows and caused disruptions to our fall Chinook spawning survey interval. Additionally a large return of pink salmon complicated surveys for Sauk spring Chinook, and Skagit fall Chinook, but especially interfered with main stem aerial redd surveys for Skagit summer Chinook. Pink salmon spawning concealed Chinook redds with their numbers and by superimposing pink redds on or near Chinook redds. Despite the difficulty with pinks the 2009 data set was mostly complete with minimal deviation from our prescribed escapement estimate methodologies. Historically, surveying lower Sauk summer Chinook and lower Skagit fall Chinook has been difficult and routinely interrupted by weather and resulting flow conditions. However the 2009 surveys were generally complete.

Suiattle spring Chinook

Suiattle River spring Chinook spawn in the clear water tributaries of the turbid Suiattle River. Spawning has not regularly been observed throughout the turbid main stem, but has been documented in the main stem at interfaces with clear water tributaries. Historically surveyed streams include Big Creek, Tenas Creek, Straight Creek, Circle Creek, Buck Creek, Lime Creek, Downey Creek, Sulphur Creek, and Milk Creek. Circle Creek suffered severe habitat damage from a flood in 1990 which created fish passage issues. Additionally, access to Circle Creek was eliminated during a 2003 flood which wiped out the vehicle bridge spanning the Suiattle River. Because Circle Creek was still inaccessible in 2009 it was not surveyed.

The Suiattle River spring Chinook escapement estimation method has been used since 1994. Spawning ground indexes were surveyed on foot every 7 to 10 days. Redds were marked with dated PVC flagging tape and counted and recorded. The cumulative redd count from all surveyed tributaries (which is the entire known spawning area) was expanded by 2.5 fish per redd to calculate the escapement estimate.

The indexes surveyed in 2009 represented the total known spawning distribution of the population (except for Circle Creek in high water years). The indexes included most clear water tributaries in the basin with enough flow to allow Chinook access. Redds constructed in the mixing zone between a tributary and the mainstem were included in the total for the tributary.

Access to the Suiattle River tributaries continued to be problematic in 2009 due to damaged roads and hiking trails from the 2003 flood. The barriers were not impassable to personnel, but greatly increased the time it took to reach and complete the indices.

Tributaries were surveyed for spring Chinook redds between August 4 and September 29, 2009. The survey interval goal was generally maintained throughout the survey period.

A total of 109 redds were identified by surveyors (Table 30). The 2009 Suiattle River spring Chinook escapement estimate was 273 fish.

Table 30. Suiattle River spring Chinook redd counts from 2009 spawning ground surveys. Redds found at the interface of the Suiattle River and a tributary were included in the count for the tributary. Dates without a redd count indicate no survey occurred that day on that stream.

	Survey date														
Stream	8/4	8/10	8/11	8/12	8/18	8/19	8/21	8/31	9/1	9/9	9/14	9/17	9/21	9/29	Sum
Big	0		0		0				9	0		0			9
Tenas	0		1		3				1	0		0			5
Straight	0			0		1			0		0				1
Buck		9			9				14	3			0		35
Lime				0		2			1		0				3
Downey		7			11			18		5			0	1	42
Sulphur		0			2		0	7		3			0		12
Milk		1				0		1		0			0		2
														Total:	109

Upper Cascade spring Chinook

Upper Cascade spring Chinook surveys cover the entire known spawning distribution of the population. Surveyed areas were the main stem 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 Cascade spring Chinook escapement estimate methodology was implemented in 1992. Indexes were surveyed by foot, or cataraft if flows were too high. Redds were marked with dated PVC flagging and counted. The cumulative redd count was expanded by 2.5 fish per redd to calculate escapement.

Survey coverage in 2009 was complete and maintained the prescribed survey interval of 10 to 14 days. The indices were surveyed from August 12 through September 23, 2009 (Table 31).

Table 31. Redd counts from Upper Cascade River spring Chinook spawning ground surveys. The main stem Cascade River was divided into four indices between river miles 8.1 and 18.6. Dates without a redd count indicate no survey occurred that day.

	Survey date							
Stream	8/12	8/17	8/27	9/8	9/11	9/22	9/23	Sum
Cascade River		32	51	29	8	6	5	131
SF Cascade River	0	0	0		0		0	0
NF Cascade River	0	0	0		0		0	0
Kindy Creek	0	0	0		0		0	0
Marble Creek		2	2	0		0		4
							Total:	135

The total number of upper Cascade spring Chinook redds in 2009 were 135. The escapement estimate was 338 fish.

Upper Sauk spring Chinook

Spawning ground surveys for upper Sauk River spring Chinook encompass the known spawning distribution of the population. Main stem 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 approximately RM 3.5.

Most surveys were performed on foot, or by cataraft if flows were too high, except for the 0.9 mile section below the White Chuck River. The section from RM 31.0 to RM 31.9 is too dangerous to walk or float so was surveyed by helicopter. Redds in sections surveyed from the ground were marked with dated PVC flagging and recorded. All visible redds in the aerial survey sections were counted and recorded. Redd days were calculated from the aerial surveyed section using the area under the curve (AUC) method. Estimated redds were calculated by dividing redd days by redd life. The redd life value used was 21 days (Schuller, 1974). Actual and estimated redds were summed and expanded by 2.5 fish per redd to estimate escapement. The Sauk River spring Chinook escapement estimate methodology has remained unchanged since 1994.

Low flows throughout most of the 2009 season enabled complete survey coverage of all indices. The run timing was again late with spawning beginning mid August and peak redd counts occurring mid to late September. Historically, upper Sauk spring Chinook spawned early August through late September and peak spawning occurring early September. However in recent years few redds were been built before September 1, and spawning has occurred into October. Peak spawning in 2009 occurred during the second week of September which was one week later than the peak in 2008. Surveys began August 21 and concluded October 6 (Table 32).

Table 32. Upper Sauk River spring Chinook redd counts from 2009 foot surveys of spawning ground indexes. Dates without a redd count indicate no survey occurred on that day.

	Survey date								
Stream	8/21	8/24	9/2	9/3	9/14	9/15	9/28	10/6	Sum
Sauk River	5	0	26	2	29	31	20	2	115
NF Sauk River		4		3		3	0		10
S^2 Sauk River		0		0		5	0		5
Falls Creek					14		0		14
								Total:	144

A large pink salmon return to the Skagit River Basin mildly complicated spring Chinook surveys. Several instances of densely concentrated pink salmon superimposing redds on Chinook redds were observed. However in many cases Chinook were observed selecting spawning habitat they could use, but pink salmon could not; this consisted of larger than ideal substrate, and spawning directly in the thalweg.

A total of 144 redds were observed from RM 31.9 upstream and including the forks. The AUC method estimated 3 redds were constructed between RM 31.0 and RM 31.9. The 2009 upper Sauk River spring Chinook escapement estimate was 367 fish.

Upper Skagit summer Chinook

Skagit summer Chinook escapement estimation methodologies have remained unchanged since at least 1974. The escapement estimate is composed of a ground based survey redd count and an aerial based estimated redd count from the AUC method. The survey protocol stipulates surveying nearly the entire known spawning distribution of the population which includes the main stem Skagit River from the mouth of the Sauk River (RM 67.2) to the Seattle City Light powerhouse at Newhalem (RM 94.3), and several tributaries. Tributaries surveyed were the Cascade River (RM 0.0 to 4.2) and Illabot Creek, Diobsud Creek, Bacon Creek, Falls Creek and Goodell Creek. All redds located in tributaries were marked with dated PVC tape and recorded. Infrequent spawning in some tributaries not normally surveyed has been documented historically, but limited staffing prevented us from monitoring those areas. The survey interval for tributaries was every 10 to 14 days and the interval for flights was approximately once every two weeks. 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. The AUC method used an assumed redd life of 21 days (Schuller, 1974) to calculate total redds. Beginning and end points for the curve were estimated using field observations of redd construction and historical data

Tributary surveys began September 4 and concluded October 28 (Table 33). Weather conditions were favorable for surveys throughout most of the spawning period. Early September was marked by low flows in all tributaries, but especially in Diobsud Creek. Diobsud Creek flows were very low; the stream may have been impassable to Chinook near the mouth of the creek. We surveyed the main stem Skagit River by helicopter four times in 2009 beginning September 9. Weather conditions were also generally favorable for the flights.

Table 33. Tributary Skagit summer Chinook redd counts from 2009 spawning ground surveys. All tributaries were surveyed on foot. Dates without a number indicate no survey occurred that day.

	Survey date												
Creek	9/4	9/11	9/18	9/25	10/2	10/5	10/9	10/12	10/16	10/20	10/28	11/9	Sum
Goodell	0	0	2	0		0	0	0	0		0		2
Bacon	5	8	24	12	3			6		1	0		59
Falls	1	0	0	0	0			0		0	0		1
Diobsud	0	0	1	0	0		0		0		0		1
Illabot	0	0	0	0	0		0		1		1	0	2
												Total:	65

Pink salmon spawning complicated foot and aerial surveys of Skagit summer Chinook spawning. In the tributaries we encountered the same problems with redd superimposition, and observed Chinook behavioral responses similar to what we saw during the upper Sauk River spring Chinook surveys. The density of pink salmon made redd identification during aerial surveys especially difficult. Because of the difficulties we supplemented our aerial data with individual redd data gathered by Seattle City Light (SCL) biologists from sections of the main stem Skagit upstream of the town of Rockport. Our assumption was some summer Chinook redds were likely obscured by pink salmon and pink salmon digging, and therefore not counted during aerial counts. We compared the difference of SCL's redd counts with our flight counts (It was necessary to calculate new redds from the aerial total redd counts by assuming 21 day redd life so we were comparing the same type of count.) from the same section and during the same weeks. We then expanded our total aerial counts by the difference between the SCL count and our aerial count. Because the expanded aerial counts were counts of total visible redds and not just new redds, we applied the AUC to the corrected counts and estimated total redds.

Upper Skagit summers exhibited spawn timing of approximately one week later than historical in the main stem, which was a week earlier from the last several years. The delayed spawning trend has not occurred in tributaries.

An estimated 2,028 Skagit summer Chinook redds were constructed in the main stem Skagit River in 2009. Surveyors located 23 redds in the Cascade River and 65 redds in the other Skagit River tributary indexes. The Skagit River summer Chinook escapement estimate was 5,290 fish.

For the fourth 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

Sauk River summer Chinook escapement was estimated by summing calculated main stem redds with redds counted in one tributary, and expanding the sum by fish per redd. The methodology has remained unchanged since at least 1974. The main stem was surveyed by helicopter at approximately two week intervals 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 Chinook stock distributions. Redd days were calculated by the AUC and divided

by the assumed redd life of 21 days (Schuller 1974) to calculate total redds. Beginning and end points for the curve were estimated using field observations of redd construction and historical data. Any redds counted in the tributary were added to the AUC redds and the sum was multiplied by 2.5 fish per redd to calculate escapement. The area surveyed represented the total known spawning distribution of the population. Dan Creek was the only tributary surveyed.

The October 2003 flood changed the distribution of summer Chinook spawning in the Sauk River from historic levels. Downstream of the Suiattle River mouth the Sauk River experienced a loss of suitable gravel due to deposition of fine sediment and as a result, less spawning was observed. Upstream of the Suiattle River, new usable gravel had been deposited and increased spawning was observed. As an example of the changes, prior to the 2003 flood few redds were typically observed above the Darrington Bridge at RM 21.0 (spawning ground database). However, In recent years as much as 26% of the Sauk summer Chinook population has utilized the spawning habitat above the bridge. The same change in spawning distribution has been observed with other species, most noticeably steelhead.

We surveyed the Sauk River four times by helicopter between September 9 and October 21, 2009. We began surveying Dan Creek September 17 and concluded October 21. Flow and visibility conditions were generally favorable in the Sauk River upstream of the Suiattle River. However, redd visibility was hampered by turbid Suiattle River water on the first and last flights. Spawning pink salmon were especially abundant during the second and third flights but did not create the difficulties described while surveying the Skagit River summer Chinook population. Dan Creek was again too low for Chinook passage through September of 2009. Pink salmon were observed using Dan Creek, but surveyors doubted Chinook would be motivated to travel through the ankle deep water. No live Chinook, or Chinook redds were observed in Dan Creek.

The 2009 Sauk summer Chinook escapement estimate was 250 fish. An estimated 100 redds were constructed in the Sauk River summer Chinook zone.

Lower Skagit fall Chinook

Skagit Fall Chinook escapement was calculated using total redd counts from main stem Skagit River aerial surveys and new redd counts from several tributaries. The main stem was flown by helicopter at approximately two week intervals from Highway 9 at Sedro Woolley to the Sauk River. Redd days were calculated from the aerial count using the AUC method. Beginning and end points for the curve were estimated using field observations of redd construction and historical data. Redd days were then 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. Two sets of tributaries were surveyed. Finney Creek, Pressentin Creek, O'Toole Creek, Grandy Creek, Day Creek, Alder Creek, Jones Creek, and Hansen Creek were surveyed every 7 to 10 days (Table 34). The tributaries Jackman Creek and East Fork Nookachamps Creek were occasionally surveyed. The Upper Skagit Indian Tribe (USIT) and Skagit Fisheries Enhancement Group (SFEG) participated in fall Chinook surveys in the tributaries (Table 35). All tributaries were surveyed by foot, and all new redds were marked with dated PVC flagging and recorded. The areas surveyed represented nearly the entire known spawning distribution of the population. Some limited spawning may occur in tributaries not surveyed.

The mainstem was surveyed by helicopter three times in 2009 from RM 24.5 (Highway 9 Bridge) to the mouth of the Sauk River (RM 67.2) beginning September 29. The third

flight was not used in the escapement calculation due to poor visibility during the flight and flattened and obscured redds from a high flow event preceding the flight. Pink salmon spawning was not an issue during aerial counts of fall Chinook redds.

Tributary surveys began September 17 and terminated November 11, 2009 (Table 34). Flow conditions and pink salmon spawning complicated tributary fall Chinook surveys. Day Creek and Finney Creek, two of the largest tributaries surveyed, were completely inundated with pink salmon until a mid October high flow event. After flows subsided it was apparent many pink salmon had been washed out. However water clarity was generally moderate to poor in Day Creek, and Finney Creek remained at or near zero visibility the remainder of the spawning period.

Table 34. Redds counted during Skagit Fall Chinook spawning ground index surveys performed by WDFW in 2009. Dates without a number indicated no survey occurred on that day.

Creek	Survey date												Sum
	9/17	9/24	10/1	10/2	10/8	10/15	10/20	10/22	11/3	11/4	11/5	11/11	
Finney	1	0	1		2	2					0		6
Day		0		0	4	0		6	4			0	14
Pressentin		0	0		0	0		1	1	0		0	2
Jackman					0		0		0				0
O'Toole					0			0					0
												Total:	22

Table 35. Skagit Fall Chinook spawning ground redd counts from 2009. Surveys were performed by the Upper Skagit Indian Tribe (USIT) and the Skagit Fisheries Enhancement Group (SFEG). Finney Creek, Grandy Creek, and East Fork Nookachamps Creek (EFN) were surveyed by USIT. Alder Creek, Jones Creek, and Hansen Creek were surveyed by SFEG. Dates without a number indicate no surveyed occurred that day.

Creek	Survey date												Sum
	9/23	10/2	10/6	10/12	10/16	10/20	10/21	10/27	11/2	11/3	11/4	11/10	
Finney	0		5										5
Grandy	0	0		0	0	0			0				0
EFN					1	0							1
Alder							0				0	0	0
Jones							0	0			0	0	0
Hansen											0	0	0
												Total:	6

Surveyors identified 28 fall Chinook redds in Skagit River tributaries. Tributary redds were down significantly from 2008. An estimated 548 redds were built in the main stem Skagit River. The 2009 Skagit River fall Chinook escapement estimate was 1,439 fish.

Comparison of actual and projected escapements

The 2009 spawning escapement of wild Skagit summer/fall Chinook plus the wild indicator stock groups of 7,127 was lower than the Upper Escapement Threshold (14,500; Low Abundance Threshold is 4,800) for the third year in a row, even though the three brood year escapements that contributed to the 2009 Skagit summer/fall Chinook run were all higher than 20,000, which was well in excess of the Upper Escapement Threshold.

Although the lower escapement in 2007 was predicted, all three years' return abundances were apparently adversely affected by poor ocean conditions and floods. FRAM predicted spawning escapement of summer/fall naturals was modeled at 17,549 Chinook. The 2009 observed spawning escapement of wild Skagit spring Chinook was 978, lower than the FRAM predicted escapement of 1,204. Though lower than expected, the wild spring Chinook escapement was higher than the Low Abundance Threshold of 576, but below the Upper Management Threshold of 2,000.

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 Creek, Illabot Creek and Diobsud Creek were also surveyed by foot to determine whether strays were spawning in those streams.

Carcass recoveries revealed redds built before September 1 in the all the sites surveyed could be reasonably expected to have been constructed by hatchery spring Chinook strays.

Surveys began July 23, 2009. A cumulative total of 95 redds were observed in the Cascade River and another 31 redds were observed in the tributaries prior to September 1. Using an expansion of 2.5 fish per redd, an estimated 315 stray Marblemount Hatchery spring Chinook spawned in natural spawning areas.

4.2.3 Stillaguamish River

Escapement estimates for the two Stillaguamish Chinook populations were calculated by multiplying cumulative redd counts by 2.5 fish. Since 2008 Chinook redds found in the North and South Forks have been individually counted during periodic foot or raft surveys using the marked redd census method. Previous to 2008 redd counts in the North and South Forks were estimated using area under the curve methodology based on aerial surveys. Aerial surveys continue to provide redd count data for the Lower Mainstem. As in 2008 redd enumeration in the North Fork in 2009 was a collaborative effort between Washington Department of Fish and Wildlife (WDFW) and Stillaguamish Tribe Department of Natural Resources. Tribal staff provided ground coverage of the North Fork Stillaguamish River from its mouth to river mile (RM) 30.0. WDFW staff surveyed the remaining known Chinook spawning areas in the Stillaguamish basin.

Throughout most of the 2009 Chinook spawning season, weather and flow conditions were favorable for conducting surveys and identifying redds. However October rainstorms elevated stream flows and disrupted our ability to enumerate fall Chinook redds in the South Fork Stillaguamish beyond October 9. Additionally a large return of Pink salmon complicated surveys for Stillaguamish summer and fall Chinook. Pink salmon spawning

concealed Chinook redds with their numbers and by superimposing Pink redds on or near Chinook redds.

For 2009 the estimated natural spawning escapement for Stillaguamish Chinook salmon was 1,001, divided into 958 for the summer population and 43 for the fall population.

Stillaguamish summer Chinook

Stillaguamish River summer Chinook spawning surveys covered the entire known distribution of the population. Surveyed areas were the North Fork from RM 0.0 to 34.4 and North Fork tributaries including Squire, Segelson, French, Brooks, and Grant creeks, and Boulder River. Survey conditions for counting fall Chinook in the North Fork Stillaguamish were generally good throughout the spawning period. Survey coverage began August 24 and Chinook redds were detected up through October 14. Rainstorms caused elevated stream levels in mid-October and hampered some of the later surveys with decreased visibility.

A total of 383 Stillaguamish summer Chinook redds were counted in 2009. The escapement estimate was 958 fish. An additional 156 fish were taken for hatchery brood stock and were not included in the escapement estimate.

Carcasses were sampled for hatchery marks, including adipose clips and CWTs. A total of 352 Chinook carcasses were examined during the season. Based on that sampling, the 958 fish escapement was composed of 431 NORs and 527 HORs.

Stillaguamish fall Chinook

Fall Chinook escapement to the South Fork in 2009 was estimated using expansion of redd counts from foot and raft surveys. Areas surveyed were the South Fork from the confluence to Granite Falls (river miles 18.8 to 34.5), Canyon, Jim, and Pilchuck Creeks, and the Lower Mainstem from the Interstate 5 highway bridges to the confluence at Arlington (river miles 11.0 to 17.8). Flow and turbidity conditions in October severely hindered our ability to monitor the spawning efforts of fall Chinook in the South Fork Stillaguamish River. Three ground based surveys were completed between September 21 and October 9. October storms elevated water levels and increased turbidity to preclude further survey coverage.

A total 17 Chinook redds were found in the South Fork Stillaguamish River in 2009. The escapement estimate was 43 adult fish.

One Chinook carcass was sampled on the South Fork Stillaguamish in 2009. It was found below Jordan near river mile 25 on September 22 and was a hatchery origin fish with a coded-wire-tag in its snout. Obtaining sufficient carcasses for sampling and estimation of NOR/HOR ratios in the SF has always been difficult. No NOR/HOR composition estimate is available for 2009.

4.2.4 Snohomish River

Escapement estimates of naturally spawning Summer/Fall Chinook salmon returning the Snohomish River are calculated from cumulative redd counts made from physical surveys of their spawning grounds, and from counts of adult fish passed at Sunset Falls. Redd counts were multiplied by 2.5 (fish per redd) to yield escapement. Survey methods included ground based walking and float surveys, and aerial surveys done from a

helicopter. Ground counted redds were monitored using marked-redd-census methodology. Ground surveys were done at a frequency of seven to fourteen days so as to not miss new redds. Redds were flagged to prevent re-counting on subsequent surveys. Aerial surveys were conducted on the Snohomish, Skykomish and Snoqualmie Rivers at target intervals of two weeks. 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).

Throughout most of the 2009 Chinook spawning season, weather and flow conditions were favorable for conducting surveys and identifying redds. However October rainstorms elevated stream flows and disrupted our survey intervals due to poor visibility. Additionally a large return of Pink salmon complicated surveys. Pink salmon spawning concealed Chinook redds with their numbers and by superimposing Pink redds on or near Chinook redds.

For 2009 the estimated natural spawning escapement for Snohomish system Chinook salmon was 2,309, divided into 1,414 for the Skykomish population and 895 for the Snoqualmie population.

Skykomish summer/fall Chinook

Spawning ground surveys were conducted throughout the known spawning distribution of Skykomish summer/fall Chinook. Survey reaches were the mainstem Snohomish and Skykomish rivers, Pilchuck, Sultan, and Wallace rivers, Elwell and Bridal Veil creeks, and in the North and South forks of the Skykomish River.

Low stream flows in September allowed surveyors good viewing conditions for finding redds but also restricted access by Chinook to some of the smaller streams, such as Woods, Olney, and Bridal Veil creeks. Ground survey intervals were kept to seven to ten days until late October rains elevated stream levels for about two weeks. Four aerial surveys were flown on the Mainstem Snohomish, Skykomish and South Fork Skykomish between September 15 and October 22. The North Fork Skykomish was flown twice. Surveys of the Sultan River were conducted by Snohomish PUD using a combination of ground and aerial coverage.

The 2009 estimated escapement for Skykomish Chinook was 1,414 fish. Of these, 709 were estimated from aerial surveys of mainstem reaches, 363 were estimated from ground counts of tributary reaches, and 342 were adults trapped at Sunset Falls.

Chinook carcasses sampled from the Skykomish population during spawning ground surveys totaled 211, of which 61 were marked with CWTs, adipose fin clips or both. All hatchery origin Skykomish Chinook were otolith marked but not all of them got CWTs or adipose clips. This information has not yet been used to estimate NOR/HOR composition on the spawning grounds.

Snoqualmie summer/fall Chinook

The escapement estimate for Snoqualmie summer/fall Chinook was made using cumulative redd counts from boat and foot surveys of known spawning habitat. Surveyed reaches include the Snoqualmie River and its tributaries, including the Tolt and Raging rivers and Tokul Creek. Chinook redds were observed from early September to early

November. Rainstorms in mid-October elevated stream flows and turbidity and interrupted survey coverage for about two weeks.

In 2009, a total escapement of 895 Chinook was estimated for Snoqualmie Chinook, based on a total count of 358 redds.

A total of 241 Chinook carcasses were sampled for marks and tags in the Snoqualmie basin in 2009. Of the fish sampled, 69 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

There were a total of 285 Chinook redds counted in the Cedar River in 2009, including 258 below Landsburg dam, and 27 above. The redd-based escapement estimate, including redds above Landsburg, is 713 Chinook, below the FRAM projected escapement of 1,128. 170 carcasses were sampled during the season, with 18.2% having adipose marks, and 81.8% being unmarked.

North Lake Washington Tributaries

Escapement to Bear and Cottage Creeks is based on live counts, and uses the AUC method. In 2009, there were an estimated 30 spawners in Bear Creek, and 67 in Cottage Creek. Additional natural spawning occurs in Issaquah Creek. In 2009, and estimated 1.064 Chinook spawned downstream of the hatchery rack (983 carcasses below trap, 30 live fish at the time of last survey, and AUC estimate of 51 in EF Issaquah Creek). An additional 847 Chinook were released above the hatchery rack and allowed to spawn naturally. Carcass sampling results are not yet available.

4.3.2 Green River

Chinook spawning escapement for the Green River Basin is estimated using data collected by boat surveys on the main-stem Green River and foot surveys on Newaukum Creek. The analysis of Chinook escapement data; boat/foot surveys, aerial surveys and supplemental carcass data collection, has been under review since 2002. From 2003 to 2007, the “adjusted peak count method” was use to calculate spawner escapement, however, in 2008, technical staff from WDFW and the Muckleshoot and Suquamish Tribes agreed that the “adjusted peak count method” likely resulted in estimates that were too high. Staff agreed to use the New Redd Index Expansion method (NRIE), employed prior to 2003, for future surveys including 2009, as the provisional method. The NRIE method enumerates new redds in index sections each week throughout the spawning season and relates these counts to non-index sections of the river. Similarly, index section counts are expanded for those sections which cannot be surveyed by boat or foot using aerial counts.

In 2009, boat surveys of the main-stem Green River were complicated by a return of pink salmon (Oncorhynchus gorbuscha) estimated in excess of three million. Redd construction activity by pink salmon reduced Chinook redd life to less than seven days. As

a result, staff from WDFW and the Muckleshoot Tribe agreed to count all redds observed each week as "new redds" in both index and non-index sections.

This method produced a natural spawning Chinook escapement estimate for the Green River basin of 688 (665 main-stem Green River and 23 Newaukum Creek) for 2009. This is the lowest natural spawning escapement estimate since 1989. Based on carcass sampling, the natural spawning escapement was comprised of 182 NORs and 506 HORs (26.4 and 73.6%, respectively).

4.3.3 White River

The escapement estimates for White River spring Chinook is derived using trap counts at the Army Corps of Engineers (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 number of Natural Origin Recruit (NOR) and Acclimation Pond (AP) Chinook trapped at Buckley fish trap was 888. The number of these fish that were hauled upstream of Buckley Diversion Dam in 2009 was 868 (Table 36).

There were 20 of the NOR Chinook caught at Buckley trap that were taken to the White River hatchery for NOR incorporation into the hatchery production, rather than being trucked upstream.

Table 36. Number of Chinook hauled upstream of Buckley fish trap in 2009.

Origin	Adults	Jacks	Totals
Wild (NOR)	573	33	606
Acclimation Pond	214	48	262
Totals	**787**	**81**	**868**

There are two smolt release hatchery programs for White River spring Chinook. The first, located out of basin, is the Minter Creek/Hupp Springs program, which 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 2009 was 615 adults and 46 jacks, for a total of 661.

The return of spring Chinook to the White River hatchery in 2009 was 1,111. 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, 925 were adults and 186 were jacks.

The total return of adult White River spring Chinook to the White River basin was 1,712, more than the FRAM projected escapement of 1,390.

4.3.4 Puyallup River

The Puyallup Tribal Fisheries (PTF) and Washington Department of Fish and Wildlife (WDFW) staffs agreed to use an adjusted AUC-based methodology to estimate escapement for Chinook in the Puyallup River basin during odd years. The estimated spawning escapement of fall Chinook into the Puyallup River basin in 2009 is 1,526 fish, more than the FRAM projected escapement of 1,153.

This escapement estimate is made up of 501 Natural-Origin Recruits (NORs) and 1,025 Hatchery-Origin Recruits (HORs) based on mark sampling of the spawning populations in South Prairie Creek, Puyallup River tributaries, and in the White River and tributaries.

The 2009 Puyallup River escapement estimate includes fall race Chinook naturally spawning in the lower White River downstream of the Buckley diversion dam trap. These fish have been enumerated by PTF biologists through spawning ground surveys since 2002 and have not been accounted for in past escapement estimates. The co-managers are revising the 2002 to 2008 escapement estimates based on spawning ground survey data provided during these years.

South Prairie Creek

Odd-year estimates for SPC are based on live count AUC adjusted by the mean South Prairie redd-based estimate/AUC-based estimate ratio. This adjustment is necessary because pink returns in odd years often preclude objective Chinook redd accounting and historic live count-based estimates have been very conservative when compared to redd-based estimates in this system. The South Prairie Creek (SPC) sub-basin spawning escapement estimate for 2009 is 710 spawners. This escapement is made up of 147 NORs and 563 HORs. The 2009 SPC redd estimate/AUC estimate ratio was 2.11, based on even-year data from 1994 to 2008. The 2009 AUC spawner curve yielded an escapement estimate of 330 spawners for SPC. Expanding the SPC AUC-based escapement (330 X 2.11) yielded a South Prairie escapement of 696. Wilkeson Creek contributed 14 Chinook to the escapement estimate.

Carbon River

Chinook spawning escapement into the mainstem Carbon River is estimated to be 125 fish. This escapement is made up of 26 NOR and 99 HOR Chinook. The origin of these fish is based on mark sampling ratios observed in SPC.

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 2009 spawning period. Consistent with the last nine Puyallup fall Chinook escapement estimates; PTF and WDFW staff presumed that the Carbon River 1999 and current year relative returns were similar to the SPC observations. Therefore, the 2009/1999 SPC Chinook escapement ratio (710 / 1422 = 0.4995) was applied to the 1999 Carbon River escapement (250) to estimate the 2009 value. This method estimated 125 Chinook spawning in the Carbon during 2009 (250 * 0.4995 = 125).

Mainstem Puyallup River Tributaries

Puyallup River tributary spawning escapement estimate for 2009 is 327 fish. Based on mark sampling in these tributaries, excluding Clark's Creek, 82 of these fish are NORs and 245 HORs.

Unlike previous years, pink salmon inundated most all tributaries in the Puyallup River basin. Redd-based escapement estimates could not be used in the 2009 escapement estimates. Tributary escapement estimates are AUC based or live/dead counts.

Puyallup River tributaries:	Escapement estimate:
Fennel Creek (WRIA 10.0406)	50
Canyon Falls Creek (10.0410)	2
Kapowsin Creek (10.0600)	2
Clear Creek (10.0022)	8
Clarks Creek (10.0027)	265
Tributary total	**327**

Mark sampling data collected in Clark's Creek are not used, because 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. Because Clark's Creek hatchery fish likely stray into the mainstem and tributaries, the NOR estimates presented for those areas may be overestimates.

Mainstem Puyallup River

Chinook spawning escapement into the mainstem Puyallup River is estimated to be 240 fish. This escapement is made up of 60 NOR and 180 HOR Chinook. The estimates by origin are based on mark sampling ratios observed in Puyallup River mainstem tributaries.

As we experienced in the Carbon River, there were not suitable survey conditions in the Puyallup River during the 2009 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 (Fennel, Canyon Falls, Kapowsin, and Clarks creeks). Therefore, the 2009/1999 Puyallup tributary ratio (139/113 = 1.2301) is applied to the estimated 1999 Puyallup mainstem escapement (195) producing a 2009 Puyallup River mainstem escapement estimate of 240 Chinook (195 * 1.2301 = 240).

The 2009 Chinook natural spawning escapement into Clark's Creek is not used in the development of the tributary to Puyallup River mainstem ratio. 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. It cannot

be assumed that the composition of Clark's Creek Chinook spawning escapement is the same as in the Puyallup River mainstem due to the proximity to Clark's Creek hatchery.

Lower White River

Fall Chinook spawning escapement into the lower mainstem White River and its tributaries is estimated to be 124 fish. This escapement is made up of 27 NOR and 97 HOR Chinook. The origin of these fish is based on mark sampling ratios observed during spawning ground surveys.

The fall component of Chinook spawning in the lower White River and its tributaries, downstream of the Buckley diversion dam fish trap, are included in the 2009 Puyallup River basin fall Chinook escapement estimate. These fish have not been included in any escapement estimates in the past. Spawning ground survey efforts by co-managers indicate that, in some years, a sizeable population of Chinook spawns in these areas.

Both spring and fall Chinook inhabit the White River. The fall component was identified by mark sampling during spawning ground surveys and the genetic analysis conducted by Ford et al. (2004). Carcass sampling during spawning ground surveys provides the means to identify the ratio of hatchery-origin fall Chinook, based on a clipped adipose fin, to unmarked fish. The race of the remaining unmarked fish was identified using Ford et al (2004). Ford et al (2004) observed that about 60 percent of Chinook sampled in Boise Creek had allele groups consistent with fall Chinook, and not completely represented by Voights Creek hatchery fish.

Total Escapement

The total 2009 estimated Puyallup River naturally spawning fall Chinook escapement is 1,526 fish. It is estimated that 501 are NORs, 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 (except Clark's Creek) and the Puyallup River mainstem and between SPC and the Carbon River.

Escapement estimates for 2002 to 2008 Puyallup River fall Chinook should be updated to include estimates of fall chinook spawning in the White River and its tributaries. There is a strong influence of hatchery-origin fall Chinook in the lower White River based on 58 percent average mark rate over the past seven years. Without reliable evidence to the contrary, fall Chinook in the lower White River are considered the same as Puyallup fall Chinook.

We reiterate the statement we have made the last several years that there is a "need to develop some means of adjusting historical escapements to make them relative and comparable to the 1999-2009 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.

Mainstem Nisqually River surveys

The main stem Nisqually River fall Chinook escapement index area is located between river mile (RM) 21.6 and 26.2. Four surveys were conducted in the index area between September 23rd and October 15th. Live adults were observed during each survey and the peak count of 26 adults was documented on September 30th. Carcasses were recovered on three of the four surveys with the peak dead count of four on both October 8th and 15th. In addition to the index surveys, supplemental surveys were conducted in the main stem between RM 3.8 and 12.6 and RM 32.9 and 39.6. During main stem Nisqually River surveys a total of 19 adult carcasses were recovered. As indicated by missing adipose fin and/or the presence of a coded wire tag (CWT), 17 were recorded as being of hatchery origin.

Mashel River surveys

The Mashel River summer/fall Chinook escapement index area is located between RM 0 and 3.2. A total of 8 surveys were conducted between August 31st and October 22nd. Low flows appeared to limit upstream migration in the Mashel River until mid September. The peak live count of 60 adults was documented on October 9th. The peak dead count of 24 dead adults was also documented on October 9th. During all Mashel River surveys 50 adult fall chinook were collected and mark sampled for origin. Of the samples collected 35 were documented as hatchery origin because of a missing adipose fin or the presence of a CWT.

Basin Escapement Estimate

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

Escapement = 6.81*((peak live + dead Mashel index) + (2.5*(peak live + dead Nisqually main stem index))

Based on the above equation the 2009 Nisqually River basin fall chinook natural escapement estimate is 872 adults.

Natural Spawner Origin

During 2009, 52 of the 69 adult fish sampled were determined to be hatchery origin. Mark rates for the brood years (BY) contributing to the 2009 return were 88.3% (BY 2004), 85.7% (BY 2005), and 91.1% (BY 2006). Since few fish return at age 5, it is assumed that the mean mark rates for smolt releases contributing to the 2009 return was 88.4%, the average of the BY 05 and 06 hatchery release mark rates. When corrected for unmarked hatchery origin natural spawners, the 2009 escapement is estimated to be comprised of approximately 743 (85.3%) hatchery-origin natural spawners and 129 (14.7%) natural-origin natural spawners.

Discussion

The accuracy of this method has not been evaluated, so the estimates produced using this method should be viewed as relative estimates of spawner abundance than an absolute estimate of the natural-spawning population. Also, the actual portion of hatchery origin natural spawners is likely higher than estimated, due to the disproportionate number of carcasses collected from the Mashel River. Since most spawning takes place in the mainstem, an appropriate portion of the samples used to determine fish origin should also come from the mainstem. Unfortunately most of the samples are recovered from the Mashel River, due to favorable viewing conditions. This likely results in a low bias in the estimate of overall contributions by HORs.

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 2009, 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 130 adults: 23, 9, and 98 Chinook in Dosewallips, Duckabush, and Hamma Hamma rivers, respectively. During 2009, 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, few Chinook were present and 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. Nine

Chinook redds and 12 live Chinook were observed and the escapement estimate is 23 Chinook in the Dosewallips River during 2009. 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. One Chinook redd and a peak count of 7 live adults was observed and the escapement estimate is 9 chinook in the Duckabush River during 2009. The Hamma Hamma River was surveyed from RM 0.3 to RM 1.8; John Creek, a tributary, was also accessible to Chinook and was surveyed from RM 0 to RM 1.6. The AUC escapement estimate is 98 Chinook in the Hamma Hamma (which includes 16 Chinook collected for broodstock) and no Chinook spawned in John Creek. Total escapement to the Hamma Hamma River system is estimated as 98 Chinook during 2009.

The FRAM preseason escapement estimate was 114 Chinook in Mid-Hood Canal during 2009 (FRAM 2309) while actual escapement was 130 Chinook. Chinook escapement on the Hamma Hamma River was comprised of about 85% supplementation-origin and 15% natural-origin spawners. The escapements to the Dosewallips River and Duckabush River 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

During 2009, spawner surveys were conducted by the Skokomish Tribe and WDFW every 7 to 10 days. The Skokomish Tribe began surveying in late July, with WDFW joining late August through October. Chinook spawning takes place in the mainstem Skokomish River up to the confluence with the South and North Forks at RM 8, in the South Fork (primarily up to RM 5.5), and in the North Fork from RM 8 to 15.6 (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 5.5). In addition, escapement estimates are made for tributaries including 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 and Vance 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 have prevented Chinook from accessing the lower South Fork early in the season. In 2009, Chinook were not able to access the South Fork Skokomish throughout most of the season because the riverbed was completely dry immediately upstream of the mainstem Skokomish River confluence. The first completely dry streambed in the South Fork Skokomish River was observed on August 6th, 2009. The river remained disconnected until September 6th, when rains reconnected the river for 9 days before going dry again on September 15th. The river then remained dry until rains significantly increased by October 14th, after the Chinook spawning run.

During 2009, total estimated spawner escapement is 1,067 Chinook in the Skokomish River system. Spawner escapement is comprised of 666 Chinook in the mainstem

Skokomish (including 149 Chinook in Hunter Creek), 368 Chinook in the North Fork Skokomish, and 33 Chinook in the lower (RM 0 to RM 5.5) South Fork Skokomish (including 0 Chinook in Vance Creek). A review of the application of spawner escapement methodology is currently underway and will be complete by fall 2010.

The 2009 FRAM preseason escapement prediction was 1,217 Chinook (FRAM 2309).

In 2009, an additional 372 hatchery Chinook adults and 26 Chinook jacks were transported from George Adams Hatchery and released into upper South Fork Skokomish (upstream of RM 10) as the second year of a re-introduction program. A summary report will be produced and distributed to the co-managers by Skokomish Tribe.

Hood Canal Chinook Mark Sampling

Mass marking has been implemented for Hood Canal hatchery Chinook, including releases from George Adams Hatchery, Hoodsport Hatchery, and Endicott Ponds. The proportion of all Hood Canal 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. In addition, all of the Chinook released from the Hamma Hamma supplementation program were tagged and/or marked. These hatchery 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 (DIT) groups of Chinook have been released since 1998.

More intensive sampling of Chinook on the natural spawning grounds has been done since 1998. During 2009, the Skokomish, Dosewallips, Duckabush, and Hamma Hamma rivers were targeted for enhanced mark and CWT sampling, using funding received to intensively sample some rivers. WDFW also sampled Chinook carcasses for marks and CWTs on the Dewatto and Lilliwaup rivers during 2009.

Of the 211 Chinook sampled in Hood Canal rivers during 2009, 146 Chinook were adipose-marked and, of these, 22 Chinook had CWTs. No unmarked Chinook sampled in 2009 had CWTs . We sampled 14.2% of Chinook spawner escapement in the Skokomish River, 43.8% of the mid-Hood Canal Chinook spawner escapement (in the Hamma Hamma, Duckabush, and Dosewallips rivers), and had an overall sampling rate of 17.0% in all Hood Canal rivers combined (Table 37). Two (2) CWTs were recovered in the Skokomish River; one from a BY 2004 Chinook released from George Adams Hatchery and one from a BY 2004 Chinook released from Endicott Pond hatchery. Nineteen (19) CWTs were recovered in the Hamma Hamma River and its tributary, John Creek; all were BY 2005 Chinook released from the Hamma Hamma supplementation program. One CWT was recovered in the Dosewallips River, a 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 2009. One CWT was recovered from a Chinook jack sampled in the Hunter Creek, a Skokomish River tributary; it was a BY 2007 release from George Adams Hatchery.

The proportion of hatchery fish in the spawning escapement will be 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 2004 (age 5), BY 2005 (age 4), and BY 2006 (age 3). Preliminary estimates of hatchery fish in the spawning escapement are also made based only on the total number of tags and marks recovered.

Table 37. Spawner escapement and carcass sampling results for Hood Canal streams, 2009.

														Totals	
Management		Spawner	Chinook sampled		Tagged 1/			Untagged 1/			Unk. tagged 2/			CWTs	AD-clips
Unit	River	escapement	Number	%	AD	NM	Unk	AD	NM	Unk	AD	NM	Unk	recovered	observed
Skokomish	Mainstem Skokomish R.	666	113	17.0%	2	0	0	76	34	1	0	0	0	2	78
	N.F. Skokomish R.	368	35	9.5%	0	0	0	16	12	7	0	0	4	0	16
	S.F. Skokomish R. (lower)	33	3	9.1%	0	0	0	0	3	0	0	0	0	0	0
	Skokomish River total	**1,067**	**151**	**14.2%**	**2**	**0**	**0**	**92**	**49**	**8**	**0**	**0**	**4**	**2**	**94**
12A	Big Quilcene R.	0	0	0%	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	0	**0**	0
12B	Hamma Hamma R. 2/	98	55	56.1%	19	0	0	9	0	0	19	8	1	19	47
	Duckabush R.	9	1	0.0%	0	0	0	1	0	0	0	0	0	0	1
	Dosewallips R.	23	1	4.3%	1	0	0	0	0	0	0	0	0	1	1
	Mid-Hood Canal total	**130**	**57**	**43.8%**	**20**	**0**	**0**	**10**	**0**	**0**	**19**	**8**	**1**	**20**	**49**
12C	Dewatto R.	6	1	16.7%	0	0	0	1	0	0	0	0	0	0	1
	Lilliwaup R.	12	2	0.0%	0	0	0	2	0	0	0	0	0	0	2
12D	Tahuya R.	3	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
	Union R.	25	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
	Hood Canal total	**1,243**	**211**	**17.0%**	**22**	**0**	**0**	**105**	**49**	**8**	**19**	**8**	**5**	**22**	**146**

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

2/ Releases from Hamma Hamma R. supplementation program were AD-clipped and CWTd; natural escapement = 82, brood stock = 16;

28 chinook were mark sampled but not wanded by LLTK, so presence/absence of CWTs is unknown

In the Skokomish River system during 2009, 94 of 151 (62%) Chinook sampled were adipose-marked (Table 37). The mark rate for hatchery chinook releases in the Skokomish River was 50% in 2004, 50% in 2005, and 72% in 2006 and age composition in 2009 was 0.2% age 5, 64% age 4, and 36% age 3. Combining these gives a preliminary estimate that spawning escapement was comprised of about 62% to 100% hatchery-origin Chinook and 0% to 38% natural-origin Chinook.

In the Hamma Hamma River during 2009, 47 of 55 Chinook sampled were adipose-marked (Table 37). Preliminary estimates are that spawning escapement was comprised of 85% supplementation (hatchery)-origin Chinook and 15% natural-origin Chinook.

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 2009 was comprised of 63% hatchery-origin Chinook and 37% natural-origin Chinook. Of the hatchery-origin Chinook, 59% were from Hamma Hamma brood stock and 41% were from George Adams Hatchery brood stock.

In mid-Hood Canal rivers combined (Hamma Hamma, Duckabush and Dosewallips rivers), 49 of 57 Chinook sampled were adipose-marked. Preliminary estimates are that spawning escapement was comprised of 86% hatchery-origin Chinook and 14% natural-origin Chinook. This does not account for potential unmarked Chinook straying from the Skokomish River hatchery programs, which could have a small effect on the estimate.

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 2009, 51 redds were counted in the Dungeness (128 adults), and no redds were counted in the Gray Wolf for a total of 51 redds (128 adults). There were 71 adults used for broodstock in the hatchery plus 21 pre-spawn mortalities, bringing the total estimated return to the river to 220, below the FRAM predicted escapement of 786, 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 143 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 RY2009 was 44.9% HOR and 55.1% NOR. The age of the HOR Chinook for RY2009 consisted of 43.2% age 3, 54.7% age 4, 2.1% age 5, and no age 6. The age of the NOR Chinook consisted of 4.1% age 3, 82.2% age 4, 13.7%% age 5, and 0.0% age 6. We recovered the following number of CWTs by age group: 23 age 3, 27 age 4, and one age 5. An additional 12 CWTs were recovered from age 2 Chinook.

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 RY2009, the estimate of natural spawning Chinook was 651. An additional 1,307 Chinook were removed from the river by gaff and used as broodstock for the hatchery program. A total of 207 Chinook volunteered into the hatchery trap and were also used as broodstock for the hatchery. In addition,11 fish were released upstream and sixteen hatchery pre-spawn mortalities were observed bringing the total return to the river to 2,192 Chinook, above the FRAM prediction of 1,864. WDFW field staff collected 300 otolith and 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 age composition consisted of 117 (5.3%) age 3, 2052 (93.6%) age 4, 23 (1.1%) 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 2009 return year. Makah Fisheries Management (MFM) surveyed the mainstem Hoko upstream of RM 10.2 and the Hoko tributaries. Survey conditions were poor after the November 5 survey due to high water. We believe the poor survey conditions did not impact escapement estimates in the lower river due to historical spawning timing and the low numbers of fish and redds observed prior to the high water.

The 2009 Chinook terminal run size was estimated to be 385 adults, below last year's escapement of 483 and below the FRAM prediction of 1,015. The escapement estimates for the upper mainstem Hoko River (RM 10.1 to 21.7) and all tributaries and lower mainstem Hoko River (RM 1.9 to 10.1), were 83 and 20, respectively. MFM staff collected an additional 282 adult Chinook for broodstock and scale samples.

The age of the HOR Chinook for RY2009 consisted of 35 (10.2%) age 2, 155 (44.6%) age 3, 120 (34.6%) age 4, 33 (9.6%) age 5, 4 (1.0%) age 6, and no age 7. The age of the NOR Chinook consisted of 18 (45.9%) age 2, 75 (19.4%) age 3, 8 (21.5%) age 4, 5 (12.7%) age 5, no age 6s and age 7s. The estimated 2009 Chinook age composition was follows: 53 (14%) age 2, 162 (42%) age 3, 128 (33%) age 4, 33 (10%) age 5, 4 (1.0%) age 6, and no age 7s.

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 marine recreational catch in each area and month. Chinook that are sampled for 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 2008 are presented here. Sampling rates in commercial fisheries were generally good (Table 38), with a total of 30,923 Chinook sampled for CWT, compared to an estimate of 107,256 total catch. Areas 12C/12H (Hood Canal), 13A (Carr Inlet) and Area 13 D/F (Deep South Sound/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 39), with a total of 9,239 sampled from an estimated 29,935 caught.

Table 38. Chinook coded-wire tag sampling rates for commercial fisheries in 2008 (calendar year).

Catch Area	Catch	# Sampled	Sample Rate
NEAH BAY 4B	428	0	0.0%
CLALLAM BAY 5	4,146	2,712	65.4%
ELWHA R 18.0272	4	0	0.0%
CRESCENT BAY 6C	8	0	0.0%
DUNGENESS BAY 6D	5	0	0.0%
SAN JUAN ISLANDS 7	22	14	63.6%
POINT ROBERTS 7A	127	101	79.5%
BELLINGHAM BAY 7B	9,082	4,333	47.7%
SAMISH BAY 7C	8,838	2,847	32.2%
LUMMI BAY 7D	54	1	1.9%
NOOKSACK R 01.0120	1,283	349	27.2%
SAMISH R 03.0005	3	0	0.0%
SKAGIT BAY (AREA 8)	8	7	87.5%
SKAGIT R 03.0176	3,643	2,670	73.3%
SARATOGA PASSAGE 8A	33	20	60.6%
TULALIP BAY 8D	3,465	885	25.5%
ADMIRALTY INLET 9	27	27	100.0%
10 (SEATTLE)	79	35	44.3%
EAST KITSAP 10E	1,487	293	19.7%
AREA 10F SHIP CANAL	787	523	66.5%
LK WASHINGTON -S	13	0	0.0%
LK SAMMAMISH	3,352	967	28.8%
ELLIOTT BAY 10A	1,330	1,242	93.4%
DUWAMISH R 09.0001	9,038	3,777	41.8%
EAST + WEST PASS(11)	9	3	33.3%
PUYALLUP R 10.0021	2,906	1,090	37.5%
WHITE R 10.0031	344	0	0.0%
CARR INLET 13A	9,083	62	0.7%
CHAMBERS BAY 13C	6,723	1,554	23.1%
SOUTH SOUND PASS 13D	2,835	11	0.4%
BUDD INLET 13F	7,394	31	0.4%
TOTTEN INLET 13H	114	0	0.0%
NISQUALLY R 11.0008	13,935	5,338	38.3%
HOOD CANAL (12)	302	1	0.3%
QUILCENE + DABOB 12A	185	4	2.2%
SOUTH HOOD CANAL 12C	4,263	377	8.8%
SOUTH HOOD CANAL 12H	6,510	493	7.6%
PORT GAMBLE BAY 9A	24	13	54.2%
SKOKOMISH R 16.0001	5,175	1,068	20.6%
PURDY CR 16.0005	192	75	39.1%

Table 39. Chinook coded-wire tag sampling rates for marine recreational fisheries in 2008 (calendar year).

Catch Area	Catch	# Sampled	Sample Rate
Area 5 - West SJF	4,562	1,099	24.1%
Area 6 - East SJF	1,526	630	41.3%
Area 7 - San Juan Islands	4,868	1,303	26.8%
Area 8.1 - Skagit Bay	394	176	44.7%
Area 8.2 - Port Gardiner	746	408	54.7%
Area 9 - Admiralty Inlet	4,987	1,251	25.1%
Area 10 - Central Puget Sound	3,284	1,537	46.8%
Area 11 - Central Puget Sound	6,676	2,458	36.8%
Area 12 - Hood Canal	1,368	166	12.1%
Area 13 - South Puget Sound	1,524	211	13.8%

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 40), 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 2007 (TCChinook (09-3). 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.

Table 40. Pre-season annual exploitation rate indices for southern U.S. ISBM fisheries' impacts on Puget Sound Chinook management units, 2002-2009 (from TCChinook (09)-3).

Indicator Stock	2002	2003	2004	2005	2006	2007	2008	2009
Skagit S/F	0.27	0.406	0.157	0.195	0.258	0.325	0.321	0.292
Stillaguamish	0.2	0.184	0.224	0.185	0.493	0.152	0.137	0.446
Snohomish	0.15	0.072	0.11	0.889	0.199	0.138	0.165	0.202
Lake Washington	1.25	0.768	0.411	0.373	0.613	0.391	0.392	0.768
Green	0.35	0.263	0.26	0.202	0.361	0.278	0.38	0.555
Nooksack Early	0	0.121	0.974	0.222	0.121	NA	NA	0.107
Skagit Spring	0.06	0.119	0.663	0.213	0.161	NA	NA	0.143
Hoko	0.48	0.682	0.966	0.444	0.442	0.401	0.305	0.284

7 Literature Cited

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Appendices

Appendix 1. 2009-2010 Co-Managers' List of Agreed Fisheries (May 1, 2009 – April 30, 2010)

2009-10 Co-Managers'

List of Agreed Fisheries

(May 1, 2009 – April 30, 2010)

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(Bracketed and bolded language signifies areas where some unresolved issues remain. Additional Co-manager discussions will occur prior to the fisheries to resolve these remaining issues.)

Part I. Treaty/Non-Treaty OCEAN Fisheries (FRAM #2309 & #0921)

Treaty Troll Quota	39,000 Chinook; 60,000 coho
Non-treaty TAC	41,000 Chinook; 210,000 coho
NT Troll TAC	20,500 Chinook; Mark Selective Fishery impacts associated with a landed catch of 33,600 coho
Recreational TAC	20,500 Chinook and Mark Selective Fishery impacts associated with a landed catch of 176,400 coho.

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

5/1-6/30	Chinook directed fishery with sub quota of 19,000 Chinook. May 1 through the earlier of June 30 or a 19,000 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 20,000 Chinook or quota of 60,000 coho. Chum release 8/1-9/30. July 1 through the earlier of September 15, or a 20,000 pre-season Chinook quota, or a 60,000 coho quota. All salmon.

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

5/1-6/30	All salmon except coho with 13,735 Chinook quota; Open May 1-5 and May 8-12, then Saturday through Tuesday with a landing and possession limit of 75 Chinook per vessel north of Leadbetter Point or 75 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.

July 1 thru earliest of Sept. 15 or pre-season Chinook sub-quota of 6,765 or Mark Selective Fishery quota of 33,600 coho.	Open July 1-7, then open Saturday through Tuesday thereafter. Landing and possession limit of 40 Chinook and 200 marked coho per vessel per open period north of Leadbetter Point or 40 Chinook and 200 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). 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.

1.3 Non-Treaty Recreational

Area 1: Leadbetter Point to Cape Falcon (Oregon)

6/28-9/30 (88,200 Mark Selective Fishery coho sub quota)	Open seven days per week; 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: 5,400; closed in Columbia Control Zone. In-season management may be used to sustain season length and keep harvest within the overall Chinook recreational TAC for north of Cape Falcon.
Buoy 10	
8/1-8/31	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.
9/1-9/30	Open 7 days/week; 3 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.

1/1/2010-3/31/2010	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

6/28-9/20 (65,270 Mark Selective Fishery coho sub quota)	Open Sun-Thur through July 23, seven days per week thereafter; ; 2 fish per day, only one of which may be a Chinook; plus one additional pink salmon; retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches and coho minimum size 16 inches; Chinook guideline: 11,850. 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.

Area 2-1 (east of a line from Leadbetter Point to Cape Shoalwater): Willapa Bay

6/28-7/31	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
8/16-1/31/2010	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 line 7/1-9/15	Closed for salmon through 9/15.
East of Buoy 13 line 9/16-11/30	2 fish per day, only 1 wild adult coho, release Chinook and chum. Minimum size 12”.

Westport Boat Basin and Ocean Shores Boat Basin

8/16-1/31/2010	6 fish limit, 4 adults; 12” min size limit; barbed hooks allowed; night closure and anti-snagging rule.

Area 3: Cape Alava to Queets River		
6/27-9/20 (4,480 Mark Selective Fishery coho sub quota)	Open Tues-Sat through July 17, seven days per week thereafter; 2 fish per day, only one of which may be a Chinook plus two additional pink salmon; retained coho must have a healed adipose fin clip; Chinook minimum size limit 24 inches, coho minimum size 16 inches; Chinook guideline: 950. In-season 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 9/26-10/11	(100 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		
6/27-9/20 (18,350 Mark Selective Fishery coho sub quota)	Open Tuesday through Saturday through July 17, seven days per week thereafter; 2 fish per day, only one of which may be a Chinook plus two additional pink salmon. 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: 2,200; 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 4A: Makah Bay Treaty Evaluation Marine Set Net Fishery		
Chinook	Trty	Open 8/16 through 9/19 inside an area bounded by a line running from Strawberry Rock Point (48º 19' 07"N, 124º 40' 00"W) to the group of rocks (48º 19' 46"N, 124º 40' 35"W) which are located off Hobuck Beach and a line to the mouth of Hobuck Creek (48º 19' 54"N, 124º 39' 37"W), to be implemented per agreement by the Makah Tribe and WDFW.

Part II. PUGET SOUND including STRAIT OF JUAN de FUCA and SAN JUAN ISLANDS fisheries

2.1 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 #2309 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, 6/21 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/Pink	Start to be determined by Fraser River Panel. The Co-managers have identified the following management actions to control by-catch of Chinook. Estimated by-catches are best estimates and are not quotas or ceilings. The priority for this fishery is to harvest the full Treaty share of sockeye and pink 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 TOCAS database and reported to the U.S. section of the Fraser Panel at least weekly, including take home and ceremonial and subsistence (C&S). If in-season the Chinook by-catch in this fishery exceeds 1,300, the Tribes will consider management actions to limit the Chinook by-catch, such as time or area restrictions, while continuing the priority objective of harvesting sockeye and pink salmon. If in-season the fishery is projected to

	result in a total Chinook by-catch exceeding 3,300 Chinook, the Tribes will, effective with that scheduled fishery opening, prohibit any commercial sales of Chinook salmon, and any Chinook salmon landed must be delivered to the fishers' respective Tribe.
Coho	Open for gillnets starting at 6 days per week (in-season adjustments based on cumulative catch) from the end of Fraser Panel control, through 10/10; 1,000 ft. closure around stream mouths. The gillnet catch number listed in FRAM #0921 will be used as management guideline and should not be greatly exceeded.
Chum	Open for gillnets, starting at 6 days per week (days may be added if effort is low), 10/11 through 11/14; 1,000-foot closure around stream mouths.
Area 5 Recreational	
5/1-6/30	Closed
7/1-8/15	2 fish limit, plus 2 additional pink salmon (Chinook 22" min size); unmarked Chinook, unmarked coho, and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling.
8/16-9/18	2 fish limit, plus 2 additional pink salmon; Chinook, unmarked coho, and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling.
9/19-9/30	2 fish limit; Chinook and chum release. South of the Kydaka Pt./Shipwreck Pt. line – closed to salmon angling.
10/1-10/15	2 fish limit, 1 Chinook (Chinook 22" min size).
10/16-2/12	Closed
2/13-4/10	1 fish limit (Chinook 22" min size).
4/11-4/30	Closed
Area 6 Recreational	
5/1-6/30	Closed
7/1-8/15	2 fish limit, plus 2 additional pink salmon, (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.
8/16-9/30	2 fish limit, plus 2 additional pink salmon; 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.

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.)
11/1 - 2/12	Closed
2/13 - 4/10	1 fish limit (Chinook 22" min size). Dungeness Bay closed to salmon angling.
4/11 - 4/30	Closed

2.2 Strait of Juan de Fuca Terminal Areas

Area 6D Dungeness Bay Net

Chinook	All	Closed
Pink	All	Closed
Coho	Trty	Open 9/21 through 11/24; additional openings possible based on in-season information; Chinook and chum release and gillnets may fish daytime only, gillnets must be attended to by fisher, through 10/10; 1,500 ft closure around each river mouth.
	Ntrty	Open Wk 39 (wb 9/20) through Wk 43 (wb 10/18) 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 10/25 based on in-season information.
Chum	All	Closed
Dungeness River Treaty (Ntrty net closed)		
Chinook	Trty	Closed
Pink	Trty	Closed
Coho	Trty	Commercial 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. Subsistence fishing using selective gear, may open after 10/15.
Chum	Trty	Closed

Elwha River Treaty (Ntrty net closed)

Chinook	Trty	Closed except Ceremonial Harvest of 5 fish in July.
Coho	Trty	Open 9/13 through 11/7; 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.
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**.**

2.3 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 and pink 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 TOCAS database 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 2009 sockeye and pink salmon 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 31 (wb 7/26) – 37 (wb 8/16), 1,3,3,2,0,4,4. 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. Reef net unmarked coho, chum, and unmarked Chinook NR. 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. Purse seine and gillnet fisheries will be managed to ensure that the non-treaty impact does not exceed 3,677 total Chinook (120% of pre-season estimate).
Pink	Trty	Purse seine and gill net: schedule dependent upon Fraser Panel. See Chinook by-catch in-season actions description in sockeye section above.

	Ntrty	Schedule to be determined, modeled as described above. 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. Reef net chum, unmarked Chinook, and unmarked coho NR. See Chinook by-catch in-season actions description in sockeye section above.
Coho	Trty	Closed
	Ntrty	Reef net: 7 days/wk beginning at end of Fraser Mgmt through chum mgmt wk 46 (wb 11/8); 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 11/14; fishing pattern Treaty 10/10-11, 10/14-15, with an in-season conference on Thursday 10/15 to determine further fishing schedules.
	Ntrty	PS and GN open week 42 (wb 10/11) Monday – Tuesday and Friday- Saturday, then 7 days/week wks 43 (wb 10/18) – 46 (wb 11/8). Dependent upon update of run status from CDFO, and in-season conference on Thursday 10/15 to determine further fishing schedules. Purse seine brailing required, Chinook and coho NR; GN Chinook and coho NR, live box, and limited soak time restrictions in wk 42. Reef nets open from end of Fraser Panel management through wk 46 (wb 11/8), 7 days per week. All vessel operators must complete best fishing practices certification prior to fishing.
Subsistence	Trty	2/1-4/15 subsistence troll fishery
Area 7 Recreational		
5/1-6/30	Closed	
7/1-7/31	2 fish limit, 1 Chinook (Chinook 22” min size) plus 2 additional pink salmon; 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) plus 2 additional pink salmon; release unmarked coho, 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. Unmarked coho release.
11/1-11/30	Closed
12/1-4/30	2 fish limit, (Chinook 22" min size), release unmarked Chinook Bellingham Bay closed to salmon angling 4/1 – 4/30.

2.4 Nooksack/Samish Terminal Region

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

Chinook/Pink	Trty	Areas 7B, 7C, & 7D: August 2 through September 4 (Wks 31-36), open weekly 4 PM Sunday to 4 PM Friday (except Purse seines closed on 8/19 and 8/26); Samish Bay is closed southeasterly 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: 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 (5" min mesh) and 7D on reservation: July 26 through September 5 (Wks 31-36) open Sunday 4 PM through Saturday 4 PM, fishing pattern: 6, 6, 6, 6, 6.
	Ntrty	Areas 7B & 7C: Wks 33 (wb 8/9)- 36 (wb 8/30); GN pattern beginning wk 33: 1,3,3,3 (GN will not be scheduled for Sundays Wks 34-36) PS pattern beginning wk 33: 1,1,1,1, brailing required; PS coho NR.

Coho	Trty	Area Closure during September coho fisheries. For both Treaty and non-Treaty gillnet fisheries operating in Area 7B during September as follows: the waters of Area 7B west of a line from Point Francis (48°41'42"N, 122°36'40"W) to the red and green buoy southeast of Point Francis (48°40'22"N, 122°35'30"W), then to the northernmost tip of Eliza Island (48°39'37"N, 122°35'45"W), then along the eastern shore of the island to a point intersecting a line drawn though through Eliza Rock Light (48°38'35"N, 122° 34'40"W) and Fish Point (48°34'35"N, 122° 29'45"W) and then southeastward along that line to Fish Point. Treaty and Non-Treaty purse seines fishing in this area must release coho. The waters of Indian Slough remain open south of a line from a tower located on March Point (48°28'23"N, 122° 32'57"W) to the Spire on the eastern shore of Padilla Bay at Bayview (48°29'05"N, 122° 28'32"W) for treaty fishers.
		Areas 7B: September 6 through October 24 (Wks 37-43), open Sunday 4 PM – Saturday 4 PM. 6,6,6,6,6,6,6.
		Areas 7B and 7D on reservation: September 6 through October 24 (Wks 37-43), open Sunday 4 PM – Saturday 4 PM. 6,6,6,6,6,6,6.
		7A on reservation fishery: September 20 through October 17 (Wks 39-42). Open weekly 4 PM Sunday through 4 PM Wednesday.
	Ntrty	Area 7B: Wks 37 (wb 9/6)-Wk 43 (wb 10/18); 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 & 7D: October 25 – December 19 (Wks 44-51); open 3 days/wk. 3,3,3,3,3,3,3,2
	Ntrty	Area 7B: Wks 44 (wb 10/25)-Wk 49 (wb 11/29); 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.

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, with the exception of the off-reservation coho fishery, which will open and close at the hours listed below.

Chinook/Pink	April 1 – May 31	April and May limited ceremonial and subsistence Chinook harvest as required. Harvest will not exceed 80 total (expected 8 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).
	8/2-9/5 (wks 32-36)	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. The river is divided into five zones during this period. These zones open on subsequent weeks, proceeding upriver, to protect migrating spring Chinook.
Coho	9/6 – 10/31 (wks 37-44)	Off reservation open weekly Sunday 4 PM through Friday 4 PM, and Saturday 4 PM through Sunday 7 AM. On reservation open Sunday 4 PM through Saturday 4 PM; 6 days/wk.
Chum	11/22-23	Subsistence harvest
	11/1 – 12/19 (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), release pink salmon; Samish Bay closed to salmon angling thru 10/15.
11/1-3/31	Same as Area 7.
4/1-4/30	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 pink salmon, unmarked Chinook and unmarked coho. All species-night closure and anti-snagging rule 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 pink salmon, Chinook and unmarked coho. All species-night closure and anti-snagging rule 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 pink salmon, Chinook and unmarked coho. All species-night closure and anti-snagging rule 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 pink salmon, 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.
Samish River Recreational		
(from mouth to Thomas Rd. Bridge)	7/1 – 12/31	2 fish limit, 12” min size. Release unmarked coho. All species-night closure and anti-snagging rule 8/1-12/31.
(from Thomas Rd. Bridge to I-5 Bridge)	10/1 – 12/31	2 fish limit, 12” min size. Release unmarked coho. All species-night closure and anti-snagging rule 8/1-12/31.
Dakota Creek Recreational		
(mouth to Giles Road Bridge)	10/1 – 12/31	2 fish limit, 12” min size.
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 anti-snagging rule 8/1-12/31.
All other NOOKSACK/SAMISH TERMINAL REGION freshwater recreational: Closed to salmon angling.		

2.5 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 - Trty	Swinomish fishing pattern: wk 19 (wb 5/3) and wk 20 (wb 5/10) 1,1; wk 28 (wb 7/5) thru 32 (wb 8/2) 2,2,2,2,2. Upper Skagit fishing pattern: wk 19 (wb 5/3) thru wk 21 (wb 5/17) 1,1,1; wk 28 (wb 7/5) thru wk 32 (wb 8/2) 1.167, 1.167, 1.167, 1.167, 1.167.
Pink	Trty	Swinomish fishing pattern: wk 34(wb 8/16) thru 37(wb 9/6);1,6,6,6. Schedule after ISU dependent on ISU. Upper Skagit fishing pattern: wks 35(wb 8/23) thru 38(wb 9/13); 1.167,1.167,1.167,1.167Schedule after ISU dependent on ISU.
	Ntrty	Wk 34 (w/b 8/16) – 35 (w/b 8/23); PS NR for CK, CO, SO, and CH; PS fishing pattern 2, 2; GN fish daylight hours; GN fishing pattern 2, 2.
Sockeye	Area 8 – Trty	Swinomish: no preseason harvestable, if harvestable take at Baker Trap. If harvestable exceeds C&S needs, discuss with co-managers. Upper Skagit: no preseason harvestable, if harvestable take at Baker Trap. If harvestable exceeds C&S needs, discuss with co-managers.
	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 - Trty	Swinomish fishing pattern: wks 39 (wb 9/20) thru wk 40 (wb 9/27); 2,1. Upper Skagit fishing pattern: wks 39 (wb 9/20) thru wk 42 (wb 10/11); 1,2,2,1.167.
	Ntrty	Closed
Chum Test	Area 8	1 boat at Jetty 1 day/wk 44 (wb 10/25) & 45 (wb 11/1) and 1 boat in Bay 1 day/wk 44 (wb 10/25) & 45 (wb 11/1).
Chum	Area 8 - Trty	Swinomish fishing pattern: wk 45 (wb 11/1) and wk 46 (wb 11/8); 1,1. Fishery dependent on ISU and harvestable fish. Upper Skagit fishing pattern: wk46 (wb 11/8) and wk 47 (wb 11/15); 1,1. Fishery dependent on ISU and harvestable fish.
	Ntrty	Closed. May open pending co-manager agreement on ISU that indicates harvestable runsize.

Skagit River Treaty Net (Ntrty net closed)

Chinook	Areas 78C and 78D	Ceremonial and Subsistence – 565 fish total Swinomish, Sauk-Suiattle, and Upper Skagit Tribes. Swinomish fishing pattern: wk 19 (wb 5/3) and wk 20 (wb 5/10) 1,1; wk 28 (wb 7/5) thru 32 (wb 8/2) 2,2,2,2,2. Sauk-Suiattle fishing pattern: wk 19 (wb 5/3) and wk 20 (wb 5/10) 1,1; wk 28 (wb 7/5) thru 31 (wb 7/26) 2,2,1,1. Upper Skagit fishing pattern: wk 19 (wb 5/3) thru wk 21 (wb 5/17) 1,1,1; wk 28 (wb 7/5) thru wk 32 (wb 8/2) 1.167,1.167,1.167,1.167,1.167.
Sockeye	Areas 78C and 78D	No preseason harvestable, if harvestable take at Baker Trap. If harvestable exceeds C&S needs, discuss with co-managers.
Pink	Area 78C	Swinomish fishing pattern: wks 34 (wb 8/16) thru 37 (wb 9/6); 1,6,6,6.Schedule after ISU dependent on ISU. Sauk-Suiattle fishing pattern: wks 34 (wb 8/16) thru 37 (wb 9/6); 1,4,4,4.Schedule after ISU dependent on ISU. Upper Skagit fishing pattern: wks 35 (wb 8/23) thru 38 (wb 9/13); 1.167,1.167,1.167,1.167. Schedule after ISU dependent on ISU.
	Area 78D	Upper Skagit fishing pattern: wks 35 (wb 8/23) thru 38 (wb 9/13); 1.167,1.167,1.167,1.167. Schedule after ISU dependent on ISU.
Coho	Terminal Treaty HR target 12.5%. If ISU changes abundance status, HR may be modified following co-manager discussions.	
	Area 78C:	Swinomish fishing pattern: wk 39 (wb 9/20) thru wk 40 (wb 9/27); 2,1. Sauk-Suiattle fishing pattern: wk 39 (wb 9/20) thru wk 40 (wb 9/27); 2,1. Upper Skagit fishing pattern: wk 39 (wb 9/20) thru wk 42 (wb 10/11); 1,2,2,1.167.
	Area 78D	Upper Skagit fishing pattern: wk 39 (wb 9/20) thru wk 42 (wb 10/11); 1,2,2,1.167.
Chum	Area 78C	Swinomish fishing pattern: wk 44 (wb 10/25) and wk 45 (wb 11/1); 1,1; fishery dependent on ISU. Sauk-Suiattle fishing pattern: wk 44 (wb 10/25) and wk 45 (wb 11/1); 1,1; fishery dependent on ISU. Upper Skagit fishing pattern: wk 45 (wb 11/1) and wk 46 (wb 11/15); 1,1; fishery dependent on ISU.

	78D	Upper Skagit fishing pattern: wk 44 (wb 10/25) and wk 45 (wb 11/1); 1,1; fishery dependent on ISU.
River Test	Chinook	(Blakes) Wk 19 (wb 5/3) thru wk 35 (wb 8/23); 1 boat, 6 hours/wk.
	Pink	(Blakes & Spudhouse) wk 32 (w/b 8/2) thru wk 33 (wb 8/9); 2 boats, 12 hours/wk.
	Coho	(Blakes & Spudhouse) wk 34 (wb 8/16)- wk 45 (wb 11/1); 2 boats, 12 hours/wk; River Area 2 (78D) wk 35 (wb 8/23) thru wk 44 (wb 10/25); 2 setnets, 24 hours/wk.
	Chum	One boat at Blakes 1 day/wk 44 (wb 10/25) and wk 45 (wb 11/1).
Swinomish Channel Treaty Net (Ntrty net closed)		
Coho	No separate openings. Area opens during Area 8 openings.	
Area 8-1 Recreational		
5/1-7/31	Closed	
8/1-9/30	2 fish limit, plus two additional pink, Chinook release.	
10/1- 10/31	Closed, except Oak Harbor open, 2 coho only limit.	
11/1 – 4/30	2 fish limit, Chinook 22” min size, release unmarked Chinook.	
Baker River/Lake Recreational		
(mouth to Hwy 20 Bridge)	July	Dependent on ISU. Potential fishery starting date to be determined. 2 fish limit, sockeye only, 12” min. size.
From Hwy 20 Bridge upstream to Dam	July	Dependent on ISU. Potential fishery starting date to be determined. 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 Gilligan Creek)	7/9 – 8/9	Open weekly Thursday noon – Sunday midnight. 2 fish limit, only 1 adult, Chinook only.
(mouth to Memorial Hwy.	8/16 – 12/31	2 fish limit, plus 2 additional pink12” min size, release chum and Chinook.

Bridge (Hwy 536 at Mt. Vernon))		
(From Memorial Hwy Bridge to Gilligan Creek)	8/16 – 12/31	2 fish limit, plus 2 additional pink, 12” min size, release chum and Chinook.
(From Gilligan Creek to Dalles Bridge at Concrete)	8/16 – 12/31	2 fish limit, plus 2 additional pink, 12” min size, release chum and Chinook. All Species – night closure and anti-snagging rule 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 anti-snagging rule. Co-managers will consult on harvest guidelines and fishery may close early.
	July	Dependent on ISU. Potential fishery starting date to be determined. 2 fish limit, sockeye only, 12” min. size.
	9/16 – 12/31	2 fish limit, plus 2 additional pink, 12” min size, release chum and Chinook. All species – night closure and anti-snagging rule 7/1 through 11/30.
	6/1-8/31	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.

2.6 Stillaguamish/Snohomish Terminal Region

Note: A Snohomish Chinook mark-recapture study will be conducted in the Snohomish River during the summer and fall of 2009 for the purpose of improving spawning escapement estimation methods. This study is being implemented as part of the Sentinel Stocks Program of the renewed Pacific Salmon Treaty. The project is expected to capture up to 500 Snohomish River hatchery and wild Chinook and project planners anticipate a maximum mortality associated with handling of 50 hatchery and wild Chinook. This maximum mortality assumption has been incorporated in the FRAM analysis of fishery impacts for the 2009 seasons although the impact is not defined as a test fishery and is not considered fishery related.

Area 8A Net		
Chinook	Trty	Closed (Ceremonial set-aside of up to 100 Chinook, July-September period).

	Ntrty	Closed
Pink	Trty	Wks 33 (wb 8/9) – 36 (wb 8/30); up to 5 days per week. Closed north of the line from Camano Head northeast to Tulalip Shores Point.
	Ntrty	Wk 34 (w/b 8/16) – 35 (w/b 8/23); PS NR for CK, CO, SO, and CH; PS fishing pattern 2, 2; GN fish daylight hours; GN fishing pattern 2, 2.
Coho	Trty	Wks 37 (wb 9/6) - Wk 42 (wb 10/11) up to 5 days per week. Update fishery through week 40. Manage for CCMP breakpoints and rates.
	Ntrty PS	Wks 40-41 (wb 9/27 – wb 10/4): 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 (wb 10/11): PS full fleet; Chinook NR, fishing pattern: 1.
	Ntrty GN	Wks 41 - 42 (wb 10/4 – wb 10/11) GN fishing pattern: 1,2; GN fish night hours Wk 41.
Chum	Trty	Wks 43 (wb 10/18) - Wk 48 (wb 11/22); Manage for Stillaguamish and Snohomish harvest rates and minimum escapement goals; Regional management plan to be developed by co-managers by July 15, 2009 including in-season update based on Treaty fisheries during MW 43-45.
	Ntrty	Closed. May open pending co-manager agreement on ISU indicating increased runsize.
Area 8D Net		
Chinook	Trty	BS, RH, GN gear outside Tulalip Bay may be open during the following periods: 5/3 – 6/4 12:01 AM Sun – 11:59 PM Sat 6/5 – 8/29 12:01 PM Mon – 11:59 PM Thu 8/30 – 9/19 12:01 AM Mon – 11:59 PM Fri Setnets inside Tulalip Bay may be open during the following periods: 5/3 – 9/19 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 9/20) – Wk 45 (wb 11/1); open to target Tulalip hatchery coho.

	Ntrty	Wk 39 (wb 9/20)-Wk 45 (wb 11/1); PS Chinook NR; PS fishing pattern: 1,1,1,1,1,2,1; GN fish at night on Sundays Wks 39-41; daylight all other openings; 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 11/8) - Wk 52 (wb 12/20); 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 Tulalip and WDFW to ensure egg take requirements are met.
	Ntrty	Wks 46 (wb 11/8)-Wk 48 (wb 11/22); 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.

Stillaguamish River Treaty Net (Ntrty net closed)

Chinook	C&S 20 Chinook.
Pink	Open 8/12 to 9/22, 5 days/wk
Coho	Open Wk 39 (wb 9/20) - Wk 43 (wb 10/18); max 5 days per week.
Chum	Wks 44 (wb 10/25)-Wk 52 (wb 12/20); 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, plus 2 additional pink salmon, Chinook release.
10/1 – 10/31	Closed north of a line due east from Randall Point, daily limit 2, release Chinook.
11/1 – 4/30	2 fish limit, Chinook 22" min size, release unmarked Chinook.

Tulalip Special Area Recreational Fishery		
Same as Area 8-2 Recreational, except during the period 6/5-9/27:	6/5 – 6/19 and 6/21 – 9/7	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 plus 2 additional pink salmon (Chinook 22" min. size).
	9/12 – 9/27	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 plus 2 additional pink salmon (Chinook 22" min. size).
Snohomish River Recreational		
(mouth to confluence of Skykomish and Snoqualmie rivers, including all channels)	8/16 – 12/31	2 fish limit, plus 2 additional pink salmon, 12" min. size, release Chinook. All species – night closure and anti-snagging rule 8/1 – 11/30.
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).
Skykomish River Recreational		
(From mouth to Lewis St. Bridge in Monroe)	8/16 – 12/31	2 fish limit, plus 2 additional pink salmon. 12" min size, release Chinook. 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 anti-snagging rule 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 anti-snagging rule 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, plus 2 additional pink salmon, 12" min size, release Chinook. All species - night closure and anti-snagging rule through 11/30.

(From Wallace River to the forks**)**	9/1 – 12/31	2 fish limit, plus 2 additional pink salmon, 12" min size, release Chinook. All species – night closure and anti-snagging rule 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 200' upstream of water intake of salmon hatchery	9/1 – 11/30	2 fish limit for coho only, 12" min size. Fishing from any floating device prohibited 11/1-2/28.
Stillaguamish River Recreational		
(river and all sloughs downstream of Marine Drive	9/1 – 12/31	2 fish limit, plus 2 additional pink salmon, 12" min size, release Chinook. All species-night closure and anti-snagging rule 8/1-11/30.
(Marine Drive upstream to forks)	9/1 - 12/31	2 fish limit, plus 2 additional pink salmon, 12" min size, release Chinook. 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.

2.7 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(wb 10/18) –Wk 47(wb 11/15) 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	
7/16-8/31	2 fish limit; plus 2 additional pink salmon, Chinook 22” min size, release unmarked Chinook, and chum. Closed south and west of a line from Foulweather Bluff to Olele Point.	
9/1-9/30	2 fish limit, plus 2 additional pink salmon, 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).	
12/1-1/15	Closed	
1/16-4/15	2 fish limit, Chinook 22” min size, release unmarked Chinook.	
4/16 – 4/30	Closed	
Edmonds Pier Recreational		
Year-Round	2 fish limit, 1 Chinook (22" min size), plus 2 additional pink salmon 7/1 – 9/30, release chum 8/1-9/30.	

3.0 South Sound Region

3.1 Area 10 sub-region

Area 10 Net

Chinook		Closed
Sockeye	Trty	Fishery dependent upon ISU (Ballard lock counts)
	Ntrty	Closed
Pink	Trty	Wks 31(wb 7/26) – 36(wb 8/30), Maximum of 4 days/wk, 1 PS, limited GN participation, observers required on vessels; retention of Chinook by fishers prohibited, release chum North of a line from President Point due East to landfall, all waters within 1000 feet of shoreline closed; Chinook encounters limited to 400. Agreed sampling protocol to be determined.
	Ntrty	Wks 35 (wb 8/23) – 36 (wb 8/30); PS limited participation (2 boats/day); fishing pattern 2,1; Brailing and live boxes required; NR for CK, CO, SO, and CH; GN limited participation (2 boats/day); fishing pattern 2,1; Live boxes and limited soak times required; NR for CK, CO, SO, and CH; observers required on vessels.
Coho	Test	Gillnet: Wks 37 (wb 9/6)-Wk 39 (wb 9/20); 3 boats, 3 sites; fishing pattern: 2,2,2
	Trty	Fishery based on ISU beginning Wk 37(wb 9/6). 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 10/4)-Wk 46 (wb 11/8); 1 site, fishing pattern: 1,1,1,1,1,1.
	Trty	Treaty allocation based on intertribal sharing agreement; Wks 41 (wb 10/4) – Wk 48 (wb 11/22) fishing pattern – ISU dependent; Fishing schedule for Area 10 shall be set consistent with the MST agreement (1983).
	Ntrty	Wks 43 (wb 10/18) - 48 (wb 11/22); 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 That portion of Elliott Bay east of the line from Pier 91 to the light at Duwamish Head to the 1000 foot radius around both the Duwamish River (80B) East and West waterways.		
Chinook	Test	Gillnet: Wks 29 (wb 7/12) – Wk 31 (wb 7/26); 7/15, 7/22, 7/29 (Wednesday); 5 fishing sites (one boat per site).8 PM to 8 AM.
	Trty	Gillnet: Reference terminal management plan. Wk 32 (wb 8/2) – Wk 34 (8/16) one 12 hour opening per week (Wednesday). Criteria: Wk 32 to open, 3 nights of test fishing (combined total) must catch at least 100 fish. Wk 33 to open, the wk 32 Treaty Commercial fishery (bay + river) must catch at least 1000 fish. Wk 34 to open (will be discussed by co-managers after wk 33 completed fishery).
Pink	Trty	**[Closed to all commercial fishing.]**
Coho	Gillnet: Wk 37 (wb 9/7)-Wk 45 (wb 11/1fishing pattern: 5 days per week (Sun – Fri)	
Chum	Gillnet Wk 46 (wb 11/8)-Wk 47 (wb 11/15); fishing pattern: 5 days per week (Sun – Fri).Wk 48 (wb 11/22) fishing pattern: (Sun – Wed).	
Duwamish/Green River (Area 80B) Treaty Net (Ntrty net closed)		
Chinook	Wk 32 – 34	Gillnet: Reference terminal management plan. Wk 32 (wb 8/2) – Wk 34 (8/16) one 12 hour opening per week (Wednesday). Criteria: Wk 32 to open, 3 nights of test fishing (combined total) must catch 100 fish. Wk 33 to open, the wk 32 Treaty Commercial fishery (bay + river) must catch 100 fish. Wk 34 to open (will be discussed by co-managers after wk 33 opening).
Pink	Wk 35 only	**[Gillnet: Wk 35 (wb 8/23) that portion of 80B north of Spokane Street Bridge (includes both waterways) fishing pattern: Sunday – Friday other restrictions to be determined.]**
Coho	Wk 37 – Wk 45	Closed until Chinook clear or coho predominate. Clearance fishery on lower river (up to 16th Avenue Bridge) begins 9/10; (6 sites); If Chinook clearance is met or coho predominate, fishery will open Sept 13; starting Sept. 20, fishery will open up to Boeing St. Bridge. Starting Oct 1 fishery will open up to Hwy 99 Bridge fishing pattern: Sun – Fri (5 days per week).
Chum	Wks 46 (wb11/8)-Wk 48 (wb 11/22)	Gillnet Wk 46 (wb 11/8)-Wk 47 (wb 11/15); fishing pattern: 5 days per week (Sun – Fri).Wk 48 (wb 11/22) fishing pattern: (Sun – Wed).

Area 10E Treaty Net (Ntrty net closed; see below for recreational SAF)		
Chinook	Wks 30 (wb 7/19)-Wk 38 (wb 9/13); fishing pattern: 7days/wk. Possible extension for Sinclair Inlet	
Coho	On-Reservation only; Wks 38 (wb 9/13)-Wk 43 (wb 10/18); setnet/beach seine; 7 days/wk.	
Chum	Wks 43 (wb 10/18)-Wk 50 (wb 12/6); 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 (7/5).	
Chinook	**[Reference Terminal Management Plan; no fishery anticipated. 10C closed, 10F (Upper and Lower Ship Canal) and 10G to be determined pending NOAA Fisheries Agreement and ISU (lock counts).]**	
Coho	The coho fisheries in the four following areas are dependent upon the ISU **[on Sept. 15]** (if lock counts project run size < 10,000 coho entering the lake, then no coho fishery):	
	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 (9/13).]**
	Upper ship canal (above Ballard Locks):	Fishing pattern 5 days/wk (Sun – Fri).
	North end Lake Washington (North of Hwy. 520 bridge):	Starting Wk 41 (wb 9/27): fishing pattern 5 days/wk (Sun – Fri).
Lake Sammamish Treaty Net		
Chinook and Coho	Fisheries will be based on ISU from the Ballard Lock counts.	
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, plus 2 additional pink salmon, Chinook release.	
7/16-8/31	2 fish limit, plus 2 additional pink salmon, Chinook 22” min size, release unmarked Chinook and release chum after 8/1.	

9/1-9/30	2 fish limit, plus 2 additional pink salmon, release Chinook and release chum through 9/15.
10/1-1/31	2 fish limit, release unmarked Chinook (Chinook 22" min size).
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 7/1-8/31.
	Inner Elliott Bay (E of Pier 91/Duwamish Head line) closed to salmon angling 7/1-8/31 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), plus 2 additional pink salmon 7/1 – 9/30, release chum 8/1-9/15.

Elliott Bay Recreational SAF

5/1 – 6/30	Same as Area 10
7/1 – 7/2	Closed
7/3-8/24	Open E of Pier 91/Duwamish Head line, weekly 12:01 AM. Friday through 11:59 PM. Monday, 7/3–8/24. 2 fish limit, plus 2 additional pink salmon, release chum 8/1-8/24. Special gear restrictions in Duwamish Waterways area when open.
8/25-8/31	Closed
9/1-4/30	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, plus 2 additional pink salmon, (Chinook 22" min size), release unmarked Chinook, release chum 8/1-9/15.
10/1-4/30	Same regulations as Area 10.

Green River Recreational

(1st Avenue Bridge to old highway 99/Tukwila Intl. Boulevard)	8/22 – 8/31	Daily limit 6. No more than 3 adult coho and chum in total may be retained. Release Chinook. Bait prohibited. Only 1 single-point hook may be used. Hook must measure less than ½" from point to shank. Night closure.
	9/1 – 12/31	Daily limit 6. No more than 3 adult coho and chum in total, 12" min size, release Chinook. All species-night closure and anti-snagging rule 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	Daily limit 6. No more than 3 adult coho and chum in total may be retained, 12" min size, only 1 Chinook. All species-night closure and anti-snagging rule Sept. 1-Nov. 30. Fishing from any floating device prohibited 11/1-2/15.
(I-405 to the S. 277th Bridge in Auburn)	9/1 – 9/30	Daily limit 6. No more than 3 adult coho and chum in total may be retained. Release Chinook. Bait prohibited. Only 1 single-point hook may be used. Hook must measure less than ½" from point to shank. Night closure.
	10/1 – 12/31	Daily limit 6. No more than 3 adult coho and chum in total, 12" min size, release Chinook. All species-night closure and anti-snagging rule 10/1-11/30. Fishing from any floating device prohibited 11/1-2/15.
(S. 277th Bridge to Auburn-Black Diamond Rd Bridge)	9/16 –10/15	Daily limit 6. No more than 3 adult coho and chum in total may be retained. Release Chinook. Bait prohibited. Only 1 single-point hook may be used. Hook must measure less than ½" from point to shank. Night closure.
	10/16 – 12/31	Daily limit 6. No more than 3 adult coho and chum in total, 12" min size, release Chinook. All species-night closure and anti-snagging rule 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	Daily limit 6. No more than 3 adult coho and chum in total, 12" min size, chum only. All species-night closure and anti-snagging rule 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 2009/2010 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. 277th Bridge in Auburn: Feb. 15	
	S. 277th Bridge to Tacoma Headworks Dam: Feb. 28	
Soos Creek Recreational		
		Closed.
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	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.	

All other SOUTH SOUND AREA 10 REGION freshwater: Closed to salmon angling.

3.2 Area 11 Subregion

Area 11 Net

Chinook	All	Closed
Coho	Trty:	Commercial fishery open beginning Wks 37 (wb 9/6)- Wk 41 (wb 10/4); 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 10/11)-Wk 49 (wb 11/29); gillnets 7 nights/wk, could close at anytime. Beach seine daylight hours only, 7 days/wk.
	Ntrty	Wks 43 (wb 10/18) - 48 (wb 11/22); 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 11A Net Treaty Net (Ntrty net closed)

Chinook	Closed
Coho	Commercial fishery open Wks 37 (wb 9/6)-Wk 42 (wb 10/11); 3 nights/wk
Chum	Commercial fishery open Wks 46 (wb 11/8)- Wk 53 (wb 12/27) 3 nights/wk.

Puyallup River (Area 81B) Treaty Net (Ntrty net closed)		
Chinook		
	Commercial fishery	Wk 35 (Open 8/23 6 AM to 6 PM 12 Hr opening)
Coho	Commercial fishery Wks 36 (wb 8/30)-Wk 42 (wb 10/11) fishing pattern: 1,2,2,2,3,3,3.	
Chum	Test fishery Wks 43 (wb 10/18)-Wk 46 (wb 11/8) 1 day/wk, drift net only.	
Winter Chum	Commercial fishery Wks 46 (wb 11/8) – Wk 53 (wb 12/27) 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; 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), plus 2 additional pink salmon, 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).	
1/1-1/31	Closed	
2/1-4/30	2 fish limit (Chinook 22” min size), release unmarked Chinook.	
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), plus 2 additional pink salmon 7/1 – 9/30.
Puyallup River Recreational:		
(from 11th St. Bridge to Freeman Road (82nd Ave E))	8/16 – 12/31	Closed August 23. 6 fish/4 adult limit, only 2 adults may be any combination of Chinook, coho and chum, 12” min size, release unmarked adult Chinook. All species – single point barbless hooks required 8/1-11/30.

(from Freeman Road (82nd Ave E) to Carbon River)	8/16 – 12/31	6 fish/4 adult limit, only 2 adults may be any combination of Chinook, coho and chum, 12" min size, release unmarked adult Chinook. All species – single point barbless hooks required 8/1-11/30.
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, anti-snagging rule, and single point barbless hooks 8/1-11/30.

All other SOUTH SOUND AREA 11 REGION freshwater recreational Closed to salmon angling

3.3 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	Wks 39-42; Beach seines;4 days a week. Release Chinook.
Carr Inlet (Area 13A) Treaty Net [1](Ntrty net closed) [1] **Based on Medicine Creek Treaty Tribal proposal annual regulations. Individual Tribal regulations may deviate from this schedule.**	
Chinook	8/1-9/19, 7 days/wk, open in sections.
Coho	9/13-10/24, 7 days/wk, in-season monitoring to meet hatchery escapement need.
Chum	10/25-12/5, 7 days/wk
Chambers Bay (Area 13C) Treaty Net[1] (Ntrty net closed)	
Chinook	Wks 31 (wb 7/26)-Wk 41 (wb 10/4); 4 days/wk. Beach seines Sunday noon to Tuesday noon. Set nets Wednesday noon to Friday noon.

Coho	Wks 42 (wb 10/11)-Wk 44 (wb 10/25); 2 days/wk. Beach seines Sunday noon to Monday noon. Set nets Monday noon to Tuesday noon.
Chum	Wks 45 (wb 11/1)-Wk 48 (wb 11/22); 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/Pink	Wks 28 (wb 7/5)-Wk 37 (wb 9/6); 3 days/wk; The Nisqually Indian Tribe will manage the Nisqually River Chinook run to attain a 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 10/4)-Wk 47 (wb 11/15); 3-4 days/wk
Chum	Proposed schedule: Wks 48 (wb 11/22)-Wk 5 (wb 1/24/2010); 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 6/28)-Wk 40 (wb 9/27); 3 days/wk
Coho	Wks 41 (wb 10/4)-Wk 48 (wb 11/22); 3-4 days/wk
Chum	Proposed schedule: Wks 49 (wb 11/29)-Wk 5 (wb 1/24/2010); 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, Minter Creek mouth closed through 9/30.

7/1-9/30	2 fish limit (Chinook 22” min. size), release unmarked Chinook and unmarked coho. 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). 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.	
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 anti-snagging rules 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 anti-snagging rule 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 anti-snagging rule 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 south bridge on Hwy.101)	Same as Area 13	Same as Area 13
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/3 adult limit, only 2 adults may be any combination of pink, coho, and chum. 12” min. size, release unmarked adult Chinook. All species – night closure and anti-snagging rule 8/1-11/30.

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

4.0 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: Beach seines open wb 7/19-8/29; 5 days/wk; release chum 8/1-8/29. Open wb 7/19 – 8/24 for gillnets 5 days/wk; restricted to 7" min mesh starting 8/1.
		Area 12H: Open wb 7/19 through 9/26; hook and line gear continuous; beach seines daylight hours Tues and Thur each week; possible in-season modifications; Chum release.
	Ntrty	Closed
Pink	All	Same as Chinook openings.
Coho	Trty:	Area 12: Open 9/25 through 10/17 for gillnets. Beach seines for Coho only (release all Chinook and Chum through 9/30) may start no earlier than 9/16. Both gear types open 7 days/wk.
		Area 12B: Open 10/1 through 10/24 for gillnets; 500 foot closure along western shore through 10/10; beach seines for Coho only (release all Chinook and Chum through 9/30) may start no earlier than 9/21. Both gear types open 7 days/wk.
		Area 12C: Open 10/1 through wb 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 gillnets no earlier than 10/1. Weekly schedules identical to Area 12C.
	Ntrty:	Closed

Chum		
	WDFW and the Tribes will develop a new forecast based on reconciled Tribal catch data by July 31, 2009. In-season management methodology approaches will be developed and agreed to for the Hood Canal Chum fishery in 2009. Review to be completed and implemented by August 31, 2009.	
	Trty:	Area 12: Open 10/18 through 11/20; 7 d/wk
		Area 12B: Open 10/25 through 11/20; 7d/wk
		Area 12C: Open 11/1 through 11/27; 7d/wk.
		Area 12D: Closed.
		Area 12H: Hook and line gear open from 10/18 through 12/5; beach seines open Tuesday and Thursday of each week. Then Monday and Wednesday for the week beginning 11/15; possible in-season adjustments. Starting 11/1, hatchery escapement control measures will go into effect.
	Ntrty:	Areas 12-12B: Open Wks 43 (wb 10/18) through wk 47 (wb 11/15), PS Chinook NRPS fishing pattern: 1,2,1,2,1; GN fishing pattern: 2,2,2,2,2, daylight hours
		Area 12C: Open Wks 46 (wb 11/8) through wk 48 (wb 11/22) 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 above schedules for the chum management period are preliminary and are subject to revision, on the basis of final forecast of abundance, as well as review and application of inseason abundance assessment methods.		

Port Gamble (Area 9A)

Chinook	All	Closed
Coho	Trty:	Open wb 8/23 through wb 10/25, gillnet only.

	Ntrty:	Open Wks 35 (wb 8/23) - 44 (wb 10/25) 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 11/1 through 12/5.
	Ntrty:	Closed

Quilcene / Dabob (Area 12A)

Coho	Trty:	Open north of Pt. Whitney, wb 8/23 through wb 10/11; 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 fisheries for Coho only start 8/21, open continuously. 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 days may be added after 9/15, if 12A Summer Chum escapement projected >2,500 and Coho harvest needs require it. Beach seine advance notification required prior to fishing.
	Ntrty:	Skiff GN open wks 36 (wb 8/30) – 40 (wb 9/27); GN 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). Beach seine open wks 35 (wb 8/23) – 40 (wb 9/27); Limited participation (2 permits/day); CK and CH NR; fishing pattern 2,2,2,2,2,2; Fishery will be managed consistent with SCSCI.
Chum	Trty:	Open to set and drift gillnets wb 10/18 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 monitor hatchery rack escapement levels and entry level rates to determine when there are surpluses of hatchery Chinook, Coho and Chum present in Purdy Creek. For Chinook, the Skokomish Tribe will also conduct spawning ground surveys (in addition to those surveys conducted by WDFW) to evaluate the movement of natural Chinook escapement in the Skokomish River. The hatchery escapement and spawning ground survey data will be used to trigger fisheries in Purdy Creek directed at surplus hatchery fish returning to George Adams Hatchery facility. Methodology to determine numbers of fish needed to trigger this fishery will be distributed to the WDFW by June 30, 2009.]

Note: Hook and line gear and beach seines release chum through 10/15.	
Chinook	Open 8/01 through 9/19; no more than 4 days/wk; closed to gillnets below SR 106.
Coho	Open 9/20 through 10/31; 5 days/wk, Open 11/1 – 11/14; six days per week. Closed to gillnets below SR 106 through 9/30.
Chum	Open 11/15 through 12/5; 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 wb10/11. 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.

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) – 4 fish limit, coho only.
7/1-10/15	South of Ayock Pt. - 4 fish limit, 2 Chinook(Chinook 22" min size); release chum.
10/16-12/31	4 fish limit, 1 Chinook(Chinook 22" min size).
1/1-1/31	Closed
2/1-4/30	2 fish limit (Chinook 22" min size), release unmarked Chinook

Quilcene/Dabob Bay Recreational	
5/1-8/15	Same as Area 12
8/16-8/31	4 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";, chum release 7/1-10/15; night closure.

Dewatto River Recreational		
(mouth to Dewatto-Holly Rd. Bridge)	9/16 – 10/31	2 fish limit, 12" min size, coho only. Selective Gear Rules, night Closure.
Dosewallips River Recreational		
(mouth to Hwy. 101 Bridge)	11/1 – 12/15	2 fish limit, 12" min size, chum only
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
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.
Skokomish River Recreational		
(mouth to Hwy. 101 Bridge)	8/1 – 9/30	1 fish limit, 12" min size, release chum. All Species-night closure, anti-snagging rule, 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, anti-snagging rule, 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, anti-snagging rule, 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, night closure.

All other HOOD CANAL REGION freshwater recreational closed to salmon angling.

Appendix 2. WDFW 2009 NOF Enforcement Report

Washington Department of Fish & Wildlife

Enforcement Program

2009 North of Falcon
Enforcement Activity Report

Table of Contents

Introduction

The following report is a summary of enforcement activities by Land and Marine Division Officers of the Washington Department of Fish and Wildlife (WDFW) for the 2009 marine salmon fishery. While originally designed as a program to ensure compliance with wild Coho salmon release rules, dedicated patrols have been expanded to ensure monitoring of non-retention Chinook fisheries as well. The positive effects of this sustained enforcement presence also benefit the protection of other living marine resources that occupy the same areas.

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

Summary of 2009 season: The ocean recreational fishery in Area 1 was open for all salmon species seven days per week from June 28 through August 31 and from September 7 through September 30. A daily bag limit of two salmon, one of which could be a Chinook, was in effect through July 30; the bag limit was modified to two salmon on July 31. All retained Coho were required to have a healed adipose fin clip. The Columbia Control Zone was closed. A total of 89 fishing days were available in the area.

In Marine Area 1, a total of 54,431 anglers (42,181 Washington, 12,250 Oregon) harvested 83,811 Coho (64,392 WA, 19,419 OR; 87 percent of the 96,500 revised Coho quota) and 5,182 Chinook (4,202 WA, 980 OR).

In Area 1, ride-along samplers on charter boats observed 108 Chinook encountered; of those, 25 were legal-sized and 83 were sublegal-sized, resulting in a sublegal-sized rate of 77%, compared with 45% in 2008. A total of 43 Chinook were recorded from Area 1 on VTRs; 10 were legal-sized and 33 were sublegal-sized, resulting in a sublegal-sized rate of 77%, identical to that observed by WDFW ride-along staff.

Hours and Contacts	
Dock Hours:	274
Vessel Hours:	63
Total Hours:	**337**
Contacts:	2034

Contact to Violation Ratio: % in violation	
CY 2008:	3%
CY 2009	16%
Variance	13% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	47	24	23
CLOSED AREA	45	12	33
EXCEED Chinook	6	4	2
EXCEED Coho	21	16	5
FAIL TO SUBMIT	3	3	0
GEAR VIOLATIONS	1	1	0
LICENSE VIOLATIONS	128	27	101
UNDERSIZED Chinook	43	37	6
WILD Chinook	4	4	0
WILD Coho	28	28	0
TOTAL VIOLATIONS	**326**	**156**	**170**

Marine Area 2: Westport

Summary of 2009 season: The ocean recreational fishery from Leadbetter Point to the Queets River was open for all salmon species Sunday through Thursday from June 28 to July 23, and seven days per week from July 24 to September 20. A daily bag limit of two salmon, one of which could be a Chinook, plus one additional Pink salmon was in effect through July 30; the bag limit was modified to two salmon plus one additional Pink salmon on July 31. All retained Coho were required to have a healed adipose fin clip. The Grays Harbor Control Zone was closed beginning August 1. A total of 79 fishing days were available in the area.

In Area 2, a total of 37,831 anglers harvested 53,868 Coho (97 percent of the 55,270 revised Coho quota) and 5,023 Chinook. In Area 2, ride-along samplers on charter boats observed 159 Chinook encountered; of those, 53 were legal-sized and 106 were sublegal-sized, resulting in a sublegal-sized rate of 67%, compared with 15% in 2008. A total of 65 Chinook were recorded from Area 2 on VTRs; 35 were legal-sized and 30 were sublegal-sized, resulting in a sublegal-sized rate of 46%.

Hours and Contacts	
Dock Hours:	323
Vessel Hours:	770
Total Hours:	**1023**
Contacts:	1661

Contact to Violation Ratio: % in violation	
CY 2008:	9%
CY 2009:	12%
Variance:	3% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	56	31	25
CLOSED AREA VIOLATION	26	2	24
EXCEED Chinook	3	3	0
EXCEED Coho	7	3	4
FAIL TO SUBMIT	91	5	86
FISH HANDLING RULE	5	3	2
LICENSE VIOLATIONS	0	0	0
UNDERSIZED Chinook	3	2	1
WILD Chinook	0	0	0
WILD Coho	9	7	2
TOTAL VIOLATIONS	**200**	**56**	**144**

Marine Area 3: LaPush

Summary of 2009 season: The 2009 recreational salmon fishing season for Marine Area 3 (La Push) was set to begin on June 27 and run through September 20. There was a sub-quota of 4,480 hatchery Coho or 950 Chinook that was used as a closure guideline for that area. An additional season in the La Push Late Season Area ran from September 26 through October 11. During that period there was a sub-quota of 100 hatchery Coho or 100 Chinook used as the closure guideline. The fishing season was open five days per week (Tuesdays through Saturday only) from June 27 through July 17, and seven days a week from July 18 through September 20.

The daily catch limit was two salmon (combined), of which only one may be a Chinook, and all wild Coho must be released. In addition to the daily limit of two salmon two Pink salmon could be retained during the general season.

The weather was not a factor in angler effort, but the small limits, long distance to the destination and high fuel prices probably resulted in a limited recreational fishery. Angler effort and success started well at the beginning of the season, but declined significantly as the season progressed.

Hours and Contacts	
Dock Hours:	26.5
Vessel Hours:	15
Total Hours:	**41.5**
Contacts:	171

Contact to Violation Ratio: % in violation	
CY 2008:	6%
CY 2009:	11%
Variance:	5% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	10	6	4
CLOSED AREA VIOLATION	0	0	0
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	5	0	5
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	0	0	0
UNDERSIZED Chinook	4	1	3
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**14**	**6**	**8**

Marine Area 4: Neah Bay

Summary of 2009 season: The 2009 recreational salmon fishing season for Marine Area 4 (Neah Bay) was set to begin on June 27 and run through September 20. There was an overall quota of 18,350 hatchery Coho and a guideline of 2,200 Chinook salmon for the area. The fishing season was open five days per week (Tuesdays through Saturday only) from June 27 through July 17, and seven days a week from July 18 through September 20. That portion of Marine Area 4 east of Sail Rock was closed to salmon fishing from June 27 through July 17.

The daily catch limit was two salmon (combined), of which only one may be a Chinook, and all wild Coho must be released. After August 1st all Chinook were to be released. In addition to the daily limit of two salmon an additional two Pink salmon may be retained.

The weather was not a factor in angler effort, but the small limits, long distance, high fuel prices and absence of lodging at Neah Bay may have impacted participation recreational fishery. Most anglers did not travel west of Sekiu.

Hours and Contacts	
Dock Hours:	27
Vessel Hours:	21
Total Hours:	**48**
Contacts:	289

Contact to Violation Ratio: % in violation	
CY 2008:	9%
CY 2009:	13%
Variance:	4% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	8	5	3
CLOSED AREA VIOLATION	3	2	1
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	17	3	14
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	0	0	0
LICENSE VIOLATIONS	0	0	0
UNDERSIZED Chinook	5	0	5
WILD Chinook	0	0	0
WILD Coho	5	4	1
TOTAL SALMON VIOLATIONS	**38**	**14**	**24**

Marine Area 5: Sekiu

Summary of 2009 season: The 2009 recreational salmon fishing season for Marine Area 5 (Sekiu) was set to begin on July 1 and run through October 15. The fishing season was open seven days a week with a daily limit of two salmon (combined). In addition to the daily limit of two salmon two Pink salmon could be retained until September 18. The daily catch limit of salmon species varied throughout the season.

- July 1 through August 15: Release wild Coho, wild Chinook, and all Chum.
- August 16 through September 18: Release wild Coho, all Chinook, and all Chum
- September 19 through September 30: Release all Chinook and all Chum
- October 1 through October 15: Only one Chinook may be retained.

Angler success was excellent at Sekiu with an exceptional Pink salmon run providing an extra bonus and incentive. Throughout much of August and September angler effort was very high. A great deal of enforcement effort was spent addressing the issue of misidentification of Pink and Chinook salmon. Several inexperienced anglers would catch immature Chinook salmon and retain them under the belief that they had caught a Pink salmon. Port samplers provided identification materials and seminars, and enforcement officers addressed violations on a case by case basis.

Hours and Contacts	
Dock Hours:	138.5
Vessel Hours:	64
Joint Agency Hours:	20
Total Hours:	**222.5**
Contacts:	1332

Contact to Violation Ratio: % in violation	
CY 2008:	11%
CY 2009:	8%
Variance:	3% increased compliance

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	17	8	9
CLOSED AREA VIOLATION	6	5	1
EXCEED Chinook	17	9	8
EXCEED Coho	7	1	6
FAIL TO RECORD (SALMON)	38	12	26
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	4	0	4
LICENSE VIOLATIONS	0	0	0
UNDERSIZED Chinook	8	2	6
WILD Chinook	8	5	3
WILD Coho	8	7	1
TOTAL SALMON VIOLATIONS	**113**	**49**	**64**

Marine Area 6: Port Angeles

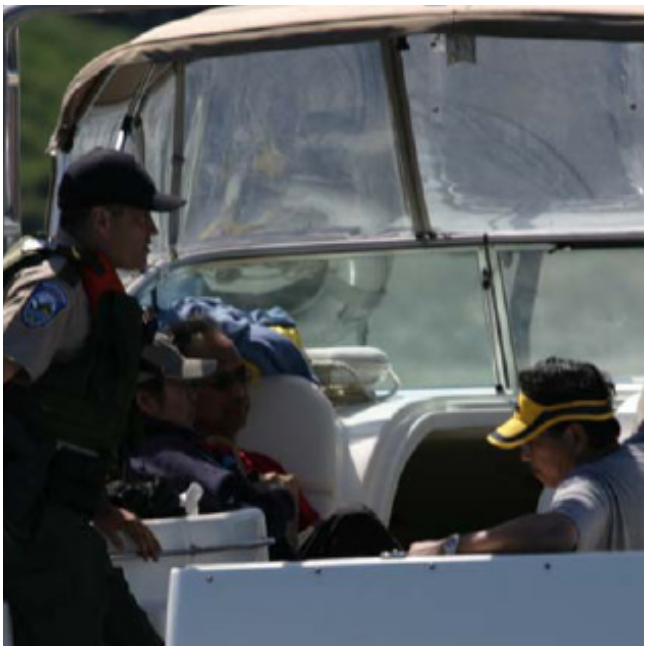
Summary of 2009 season: The 2009 recreational salmon fishing season for Marine Area 6 (East Juan de Fuca Strait) was set to begin on July 1 and run through October 31. The fishing season was open seven days a week with a daily limit of two salmon (combined). In addition to the daily limit of two salmon two Pink salmon could be retained. The daily catch limit of salmon species varied throughout the season:

- July 1 - August 15 (West of buoy #2): Release wild Coho, wild Chinook, and all Chum.
- July 1 - August 15 (East of buoy #2): Release wild Coho, all Chinook, and all Chum.
- August 16 - September 30 (Entire area): Release wild Coho, all Chinook, and all Chum.
- October 1 - October 31(Entire area): One Chinook may be retained.
- October 1 – October 31 (Dungeness Bay): Only Two Coho may be retained.

The angler success and effort was good west of Port Angeles with an exceptional Pink salmon run providing an added bonus.

Hours and Contracts	
Dock Hours:	0
Vessel Hours:	74
Investigative:	9.5
Total Hours:	**83.5**
Contacts:	186

Contact to Violation Ratio: % in violation	
CY 2008:	9%
CY 2009:	14%
Variance:	5% increase in violations detected



Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	0	0	0
CLOSED AREA VIOLATION	1	1	0
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS	16	3	13
LICENSE VIOLATIONS	8	0	8
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	1	1	0
TOTAL VIOLATIONS	**26**	**5**	**21**

Marine Area 7: San Juan Islands

Summary of 2009 season: The 2009 salmon season for Marine Area 7 began July 1st and ended October 31st. During July, the limit was two salmon, only one of which could be a Chinook. In addition, two Pink salmon were available as a bonus. Good numbers of Frazier River stock of Chinook salmon were harvested in July. The pre-season report of harvestable Frazier sockeye never materialized. August 1 through September 30 brought more restrictions. Wild Coho and all Chums were required to be released. Couple this with a huge return of Pink salmon and enforcement officers were challenged.

Limits of Pink salmon were the rule, not the exception. Add the expected conflicts between recreational salmon fishers, commercial purse seine targeting Pinks, and the interaction with whales and whale watchers made for a busy season. The weather was beautiful during this time, allowing even beginning salmon fisher's access to the return. October 1-30th saw a return to a two fish limit, only one Chinook, and release all wild Coho. A strong showing of Samish River origin Coho led to a strong fishery in and around Samish Bay.

Hours and Contacts	
Dock Hours:	208
Vessel Hours:	612
Joint Agency Hours:	28
Total Hours:	**848**
Contacts:	2083

Contact to Violation Ratio: % in violation	
CY 2008:	3%
CY 2009:	5%
Variance:	2% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	75	16	59
CLOSED AREA VIOLATION	0	0	0
EXCEED Chinook	1	1	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON	8	5	3
FAIL TO SUBMIT (SALMON)	7	1	6
GEAR VIOLATIONS	7	3	4
LICENSE VIOLATIONS	1	1	0
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL VIOLATIONS	**99**	**27**	**72**

Marine Area 8-1: Deception Pass/Hope Island/Skagit Bay

Summary of 2009 season: The 2009 salmon season in MA 8-1 started on August 1 and ended on September 30. Additional Chinook season Oct-Dec. This area supports a large run of Pink salmon, origininating in the Skagit River. A very good beach fishery for Pink salmon exists, making enforcement challenging. The late fall/early winter black mouth fishery (selective) was outstanding, with good numbers of fish harvested. Winter weather also makes this a difficult fishery.

Hours and Contacts	
Dock Hours:	38
Vessel Hours:	60
Total Hours:	**98**
Contacts:	397

Contact to Violation Ratio: % in violation	
CY 2008:	9%
CY 2009:	14%
Variance:	5% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	9	1	8
CLOSED AREA VIOLATION	0	0	0
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	3	1	2
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	1	0	1
LICENSE VIOLATIONS	2	2	0
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**15**	**4**	**11**

Marine Area 8-2: Port Susan/Port Gardner

Hours and Contacts	
Dock Hours:	9
Vessel Hours:	116
Total Hours:	**125**
Contacts:	387

Contact to Violation Ratio: % in violation	
CY 2008:	2%
CY 2009:	8%
Variance:	6% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	13	7	6
CLOSED AREA VIOLATION	1	0	1
EXCEED Pink	4	4	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	6	4	2
FAIL TO SUBMIT (SALMON)	2	2	0
GEAR VIOLATIONS (SALMON)	3	1	2
LICENSE VIOLATIONS	2	2	0
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**31**	**20**	**11**

Marine Area 9: Admiralty Inlet

Summary of 2009 season: The salmon season ran from July 16th to August 31, with an additional late hatchery Chinook directed season. The summer selective fishery was excellent for hatchery Chinook. Good numbers of fish, as well as large fish, put many anglers on the water. The Pink salmon directed season off Possession Bar created large numbers of fishers and many happy anglers. The selective Chinook fishery continues to provide additional opportunity, but requires extra patrols to protect wild stocks. The Coho fishery was slower than the past several years.

Hours and Contacts	
Dock Hours:	127
Vessel Hours:	11
Total Hours:	**138**
Contacts:	784

Contact to Violation Ratio: % in violation	
CY 2008:	N/A
CY 2009:	10%
Variance:	N/A

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	37	13	24
CLOSED AREA VIOLATION	1	0	1
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	27	8	19
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS (SALMON)	4	2	2
LICENSE VIOLATIONS	6	4	2
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**75**	**27**	**48**

Marine Area 10: Seattle/Bremerton

Summary of 2009 season: The 2009 salmon season began with a catch and release season in the north half of MA 10 from June 1-30. This season is lightly fished and 2009 was no different. The "regular" season opened on July 1st. MA 10 is extremely complex in its management. The Elliott Bay/ Inner Elliott Bay boundary, 1st Ave. boundary, and Spokane Street all create enforcement problems. Additional selective/non-selective fisheries add to the complexity. The proximity to a major urban area (Seattle) only makes the issue that much more difficult. The nice weather, coupled with a large number of harvestable fish, and a large population base, resulted in very excellent fishing and increased opportunity over past years.

Hours and Contacts	
Dock Hours:	135
Vessel Hours:	190
Total Hours:	**325**
Contacts:	738

Contact to Violation Ratio: % in violation	
CY 2008:	13%
CY 2009:	21%
Variance:	8% increase in violations detected

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	48	15	33
CLOSED AREA VIOLATION	19	19	0
EXCEED Chinook	7	7	0
EXCEED Pink	3	3	0
FAIL TO RECORD (SALMON)	44	30	14
FAIL TO SUBMIT (SALMON)	3	3	0
GEAR VIOLATIONS (SALMON)	3	3	0
LICENSE VIOLATIONS	13	11	2
SNAGGING VIOLATIONS	14	11	3
UNDERSIZED Chinook	1	1	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**155**	**103**	**52**

Marine Area 11: Tacoma/Vashon Island

Summary of 2009 season: The 2009 salmon season began on June 1 and ended Sept 30. Wild Chinook must be released and an addition 2 Pink salmon were added to the daily two fish limit. The Tacoma area hosts a large number of Chinook fishers, while Pink fishers were spread more uniformly throughout the area. A decent fall run of Coho were available off certain points for more knowledgeable fishers. The mild weather and a large run of Pink salmon created ideal fishing condition that many anglers took opportunity of.

Hours and Contacts	
Dock Hours:	46
Vessel Hours:	98
Total Hours:	**144**
Contacts:	689

Contact to Violation Ratio	
CY 2008:	18%
CY 2009:	11%
Variance:	7 % increase in compliance

Violation Type	Violations	Arrests	Warnings
BARBED HOOKS	37	32	5
CLOSED AREA VIOLATION	0	0	0
EXCEED Chinook	0	0	0
EXCEED Coho	0	0	0
FAIL TO RECORD (SALMON)	19	10	9
FAIL TO SUBMIT (SALMON)	0	0	0
GEAR VIOLATIONS	4	4	0
LICENSE VIOLATIONS	13	11	2
SNAGGING VIOLATIONS	2	2	0
UNDERSIZED Chinook	0	0	0
WILD Chinook	0	0	0
WILD Coho	0	0	0
TOTAL SALMON VIOLATIONS	**75**	**59**	**16**

Marine Area 12: Hood Canal

The 2009 recreational salmon fishing season for Marine Area 12 (Hood Canal) was managed individually in four separate geographic areas:

Hood Canal North of Ayock Point: The season was set to begin on September 1 and run through October 15. The salmon fishing season was open seven days a week, with a daily limit of four Coho only, and no minimum size.

Hood Canal South of Ayock Point: The season was set to begin on July 1 and run through October 15. The salmon fishing season was open seven days a week, with a daily limit of four salmon (combined). Up to two Chinook salmon, with a minimum size of 22" could be retained. All Chum salmon had to be released. There was no minimum size on the other salmon species.

Quilcene/Dabob Bay Salmon Fishery Area: The season was set to begin on August 16 and run through October 15. The salmon fishing season was open seven days a week with a daily limit of four Coho only, and no minimum size.

Hoodsport Hatchery Zone: The season was set to begin on July 1 and run through December 31. The salmon fishing season was open seven days a week, with a daily limit of four salmon (combined). Up to two Chinook salmon, with a minimum size of 24" could be retained. All Chum salmon had to be released. There was no minimum size on the other salmon species.

The angler effort on the Hood Canal was fairly light with the exception of a couple key areas, and the catch success was periodically good. Quilcene Bay had large volumes of fish present, however the fish tended not to bite. The conflicts with the tribal fishery (Skokomish) continued to heat up. Some tribal/non-tribal conflicts were reported throughout the season.

Marine Area 13: Olympia

Summary of 2009 season: Marine Area 13 in Southern Puget Sound opened for salmon on May 1 with a two fish daily limit. The minimum size for Chinook was 22 inches and anglers were required to release wild Chinook. Beginning on July 1 and through September, anglers were also required to release wild Coho Salmon. After October 1, the restriction on retaining wild Chinook was lifted with the daily limit continuing as two salmon (combined). From November 1 through December 31st, there were no restrictions on retaining wild salmon, but the daily limit for Chinook was restricted to one.

Violation Type	Arrests
BARBED HOOKS	0
CLOSED AREA VIOLATION	10
EXCEED Chinook	17
EXCEED Coho	0
FAIL TO SUBMIT (SALMON)	0
GEAR VIOLATIONS (SALMON)	1
LICENSE VIOLATIONS	6
UNDERSIZED Chinook	2
WILD Chinook	0
WILD Coho	0
TOTAL SALMON VIOLATIONS	**36**

Hours and Contacts	
Dock Hours:	2
Vessel Hours:	96.5
Total Hours:	**98.5**
Contacts:	302

Contact to Violation Ratio: % in compliance	
CY 2008:	85%
CY 2009:	88%
Variance:	3% increase in compliance

2009 compliance based on arrests and contacts alone

Big Quilcene River

Summary of 2009 season: The 2009 recreational salmon fishing season for the (Big) Quilcene River was set to begin on August 16 and run through October 31. The fishing season was open seven days a week, however, a night fishing closure was in effect during that period. The daily catch limit for salmon was four Coho only.

The lower portion of the Quilcene River (mouth to Rodgers Street) was closed to all fishing to protect the spawning areas of the ESA-listed Hood Canal Summer-run Chum salmon.

Non-tribal angler success on the river declined dramatically in the past couple years. The fish runs have been robust, but two factors have affected their fishing effort:

- High stream flows over the past winters have scoured the river and filled in some of the deep pools.
- Returning salmon are tending to travel from the mouth to the hatchery closure area without stopping. Traditionally, they would hold in several of the pools along the way.

The area treaty tribes have expanded their commercial fishing activities into the river. All four tribes allowed members (and non-member family) snagging, clubbing, and dipnetting of salmon, with no harvest limit or other restrictions. The vast majority of salmon were taken in this manner, providing little opportunity for non-tribal members.

Violation Type	Arrests
BARBED HOOKS	0
CLOSED AREA VIOLATION	0
EXCEED Chinook	0
EXCEED Coho	0
FAIL TO RECORD (SALMON)	16
FAIL TO SUBMIT (SALMON)	3
FISH HANDLING RULE	0
LICENSE VIOLATIONS	5
SNAGGING VIOLATIONS	32
UNDERSIZED Chinook	0
WILD Chinook	0
WILD Coho	0
TOTAL SALMON VIOLATIONS	**56**

Hours and Contacts	
Dock Hours:	386.5
Vessel Hours:	0
Joint-Agency Hours:	59.5
Contacts:	702

Contact to Violation Ratio: % in compliance	
CY 2008:	8%
CY 2009:	8%
Variance:	No change

Carbon River & Puyallup River

Summary of 2009 season: The Puyallup River was open for salmon from the 11th Street Bridge in Tacoma upstream to the confluence with the Carbon River from August 16th through December 31st, except that the section below the junction of Freeman Rd. and N. Levee Rd. had a one day closure on August 23 to allow for a tribal gill-net fishery. The minimum size for salmon was 12 inches, and anglers were allowed a daily limit of six, up to four adults could be retained, of which no more than two could be a combination of Chinook, Coho and Chum. Wild Chinook were required to be released and night closure, anti-snagging, and barbless hook rules applied through November 30th.

Summary of 2009 season: The Carbon River was open for salmon fishing from its mouth to Voights Creek from September 1st through November 30th. Anglers were allowed a six fish daily limit, up to four adults could be retained, of which to could be adult hatchery Chinook. Wild Chinook and Chum were required to be released. The night closure, anti-snagging, and barbless hook rules were in effect.

Puyallup and Carbon River Emphasis Plan

August 14th – 16th and August 29th - September 1st

Objective:

Patrol and enforce regulations/rules governing the taking of Pink, Chinook and Coho Salmon by anglers in the Puyallup and Carbon Rivers. An additional focus of the emphasis includes enforcing the salmon closure on upper Carbon and Puyallup Rivers and total closure of the tributaries (White River, Voights Creek, South Prairie Creek).

Concept of the Operation:

The Puyallup/Carbon Rivers and closure areas will be patrolled by teams of FWO's. The teams may patrol their designated sections using whatever strategy they see fit; e.g., plain clothes, one uniform, one/two undercover, etc. Bicycles are a most effective means of covering certain portions of the river and those teams that have bicycles are encouraged to deploy them. The patrol will be broken down into two different weekends. The first weekend is the opener for the Puyallup River (Aug. 16th) and the second is the opener for the Carbon River (Sept. 1st). In years past the Carbon river has been open for trout fishing during the Puyallup River opener. This year the lower Carbon River is closed all together until September 1st. This rule was put in place so that individuals could not get an early start and fish for Chinook with the excuse that they are fishing for steelhead.

This patrol will encompass nearly 25 river miles. The first weekend will focus on the Puyallup River and the second weekend will focus on the Carbon River. Teams are encouraged to focus wherever the activity is, however one team will work the Carbon River August 16th and 17th for closed season activity. Teams will be significantly spread out and communication will be paramount. All radio communications will be on Tacoma East and intra-officer communications will be via TAC 1. Teams area also encouraged to use InfoCOP and update their status/location frequently so others can know where team members are located. An early start is encouraged and a pre-patrol briefing will occur at Puyallup PD at 1500 on August 14th. Night closure and closed season patrols will commence after the meeting.

Carbon River & Puyallup River

Puyallup Police will be participating in the emphasis patrol on August 30th. These officers will most likely be used in an under cover/covert capacity. Additional WDFW officers may participate in plain clothes depending on need. This day will target sections of the lower river where violation rates have traditionally been high. The emphasis of this day will be on enforcing snagging and over limit violations. Assignments will be discussed at the August 14th briefing.

Rules:

The Puyallup River (804), from the 11th Street Bridge to the City of Puyallup Outfall at Freeman Road, opens for seasonal salmon fishing on August 16th. All Species – Night closure, anti-snagging rule and barbless hooks required Aug 1 – Nov 30. Anglers may fish for salmon Aug 16 – Aug 22 and Aug 24 – Dec 31. Minimum size 12 inches. Daily limit six. Up to four adults may be retained of which only two may be any combination of Chinook, Coho or Chum. Release wild adult Chinook. There is a one-day closure on this section of river due to the Puyallup Tribal Netting Opener. August 23rd will require additional patrols of Detachment 9 officers to ensure an orderly fishery.

The Puyallup River (804), Above the City of Puyallup Outfall at Freeman Road to the Carbon River, opens for seasonal salmon fishing on August 16th. All Species – Night closure, anti-snagging rule and barbless hooks required Aug 1 – Nov 30. Anglers may fish for Salmon Aug 16 – Dec 31. Minimum size 12 inches. Daily limit six. Up to four adults may be retained of which only 2 may be any combination of Chinook, Coho or Chum. Release wild adult Chinook. The Puyallup River is closed to salmon fishing.

The Carbon River (802), from its mouth to Voight Creek, opens for seasonal salmon fishing on September 1st. All Species – Night closure, anti-snagging rule and barbless hooks required Sept 1 – Nov 30. Anglers may fish for SALMON Sept 1 – Nov 30. Minimum size 12 inches. Daily limit six. No more than four adults may be retained. Only two may be hatchery Chinook. Release wild adult Chinook7 and Chum.

Voight Creek and South Prarrie Creek are closed waters. The White River is also closed, but will open to trout fishing on October 1st. Clarks Creek is open for trout fishing, but traditionally receives pressure from salmon anglers as Pink and Chinook salmon will be in the creek.

Intelligence:

Although this fishery is typically attended by law-abiding citizens, there will be an element present that may pose an officer safety risk. As always; be prepared and alert. The Puyallup Tribe of Indians also nets the river and there have been some rumored confrontations between Tribal and non-Tribal members in the past, none of which were violent. The Puyallup Tribal Police are very supportive and will likely be present on the river in various areas to ensure any Tribal Fishery is being conducted according to their regulations. A tribal net schedule for the emphasis period will be briefed prior to patrol. Any Tribal violations necessitate contacting the Puyallup Tribal Police. As previously noted the lower section of the Puyallup River will be closed on August 23, 2009. This closure will require extra patrols to ensure an orderly fishery.

Nisqually River

Summary of 2009 season: The Nisqually River was closed by emergency rule for recreational Chum Salmon Fishing on Jan 8th 2010. The Tribal Gill Net season was closed by the Nisqually Tribe on Jan 6th at 12 noon.

Ihis patrol was designed to identify and to remove derelict gear. Any enforcement issues were to be addressed as well but none were observed.

Due in large part to past similar details initiated by this detachment, the Tribe obtained funds that specifically addressed the removal of derelict gear. Both Gill Nets and Crab Pots. Nisqually Environmental Resources.

NISQUALLY RIVER "GHOST" NET EMPHASIS PATROL

Dates of emphasis: January 30th and 31st, 2010

Purpose: To remove any and all abandoned gill net gear on the Nisqually River and its estuary, which poses a threat to regulated, sensitive, threatened and or endangered species. These species include but are not limited to Dungeness crab, marine mammals, all waterfowl, late run Chum Salmon and most importantly, "Wild Steelhead".

Agencies involved: U.S. Fish and Wildlife Service, The Nisqually Tribe and the Washington Department of Fish and Wildlife.

Justification: The Nisqually Tribal Gill Net Fishery ended in early January 2008. The tribal authorities closed this season in an agreement with the WDFW, in order to protect a highly threatened run of Wild Steelhead, which are known to arrive during February and March. As we know, abandoned and fowled gill nets continue to function even without being tended by the fisherman. This river tends to collect such gear because of its sheer volume heavy tribal fishing and its highly fluctuating flows. The fish and wildlife that becomes ensnared in these "Ghost Nets" are killed. The Steelhead situation in this river is such that all steelhead fishing, both Tribal and recreational, is prohibited. An incidental take of steelhead is allowed during the tribal Chum fishery however any loss of steelhead in this manner is unacceptable.

The Nisqually Tribe recognizes that the left over gear is probably of tribal origin. This officer knows that this left over gear is not necessarily "Tribal" in origin. Therefore the responsibility for removing these obvious Fish and Wildlife hazard's should be shared by all environmental agencies.

The "Reach" area at the mouth of this river also tends to collect "Ghost Nets." Here, the species impacted include Dungeness crab. In this part of Marine Area 13, crab fishing is currently closed. This officer has seen many thousands of dead and dyeing crab in "Ghost Nets" over the years.

Additionally, the National Wildlife Refuge borders the lower river on both the Thurston and Pierce County sides. This area is set aside for bird watching and recreational hiking only. Hunting is prohibited. "Ghost Nets" are a significant hazard to many sensitive species of waterfowl and marine mammals that inhabit the refuge.

Nisqually River

Action Plan: On January 30th and 31st, 2010 The Nisqually Tribal Fisheries Enforcement will run the River from the upstream commercial fishing deadline (Tank Crossing Bridge) down to Nisqually Reach. Tribal manpower will be primarily responsible for pulling any abandoned or derelict gear. Detachment Seven officers will provide land-based support and assist on the tribal boats if requested. Land based support will consist of locating and identifying gear as well as providing manpower in the chore of disposal of the gear. Notes will be kept documenting any species impacted. A WDFW Enforcement flight has been scheduled in an attempt to locate gear in more remote locations such as traditional "up river" steelhead spawning areas and or otherwise hard to reach locations.

Officer Haw will stay in close contact with Tribal Fisheries Sergeant Burns during this detail. In addition he will assist Sgt. Makovieney with the direction of detachment officers and with the coordination of Federal personnel.

Skokomish River

Summary of 2009 season: The Skokomish River salmon season began August 1 from the mouth upstream to the Highway 101 Bridge. The daily limit through September 30th was one salmon and fishermen were required to release all Chum. From October 1 through December 15th the daily limit increased to 6 salmon, up to four adults but Chinook and Chum were required to be released. A night closure, anti-snagging rule, and barbless hooks rules were in effect from August 1st through November 30th. Also, anglers were prohibited from casting their terminal gear within 25 feet of tribal gill-nets in an effort to reduce conflicts between the user groups.

Skokomish River Emphasis

August 07-10, 2009

Ten officers worked a total of 231 hours during the four-day emphasis. This was the 2nd year of the one fish limit and yet the attempt to exceed arrests remained high. Officers also conducted an early morning night-time closure patrol, surprising several early bird fishermen. On the 4th day, Officers discovered an illegal gill net operation near the mouth of the river resulting in 2 class C felony arrests for unlawful commercial fishing and 1 resisting arrest. This contact resulted in the seizure of 368 pounds of Chinook salmon, one rowboat, a gill net and one vehicle.

Emphasis stats	2009	2008
Undercover Officer Hours	68	28
Uniformed Officers	163	53.5
Total hours	231	81.5
Fisherman contacts		
Undercover	38	8
Uniformed	293	128
Total contacts	321	136
Violations	Arrests	
Possess Snagged Fish	10	15
Fail to Record Catch	9	6
Attempt to exceed limit	12	9
Fail to submit catch	2	2
1st degree over limit salmon	0	1
No shellfish license	0	3
1st degree over limit oyster	0	3
Night Closure	11	
No CRC	1	
Barbed Hook	2	
No License	1	
Unlawful Comm. Fish	2	
Resisting arrest	1	
Total Arrests	**51**	

Skokomish River

Skokomish River Emphasis

August 21st thru 23rd, 2009

A total of six officers participated in this years' patrol. Officer's utilized undercover Officers to observing retention of snagged salmon and the attempting to exceed violation. Citations were issues for unlawful use of another license, possession of snagged fish, attempting to exceed limits, night closure, closed season, barbed hooks, fail to record catch along with several tribal referrals. This year the top two violations were retaining snagged fish (9) and attempt to exceed limit (5). Overall this was a very successful emphasis. Undercover Officers overheard and spoke with several fishermen gossiping and warning individuals about the game wardens having people in every fishing hole.

Emphasis stats	2008	2009
Undercover Officer Hours	69.5	41
Uniformed Officers	73	62
Total hours	142.5	103
Fisherman contacts		
Undercover	1	35
Uniformed	126	100
Total contacts	127	135
Violations	Arrests	
Closed Area "Purdy C"	0	3
Barbed Hooks/ Gear	1	2
Possess Snagged Fish	7	9
Fail to Record Catch	5	1
No License	1	0
Attempt to exceed limit	7	5
Fail to submit catch	2	0
Snagging Salmon	0	0
No CRC	0	0
Unlawful Use Of License	0	0
Fail to display access decal	3	0
False Reporting	1	0
Over Limit of Salmon	1	0
Unlawful use of another license	0	2
Night closure	0	1
Tribal referrals (illegal net/other)	0	3
Total Arrests	**28**	**26**
Verbal Warnings	**13**	**30**

Explanation of Statistical Data

Salmon compliance level percentages were calculated by:

(Total contacts) – (salmon violations) / (total contacts) x 100 = %

Compliance rate data does not represent a true compliance since the data only reflects compliance based upon officer contacts alone.

Contact Information:
Deputy Chief Mike Cenci
WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
Enforcement Program
600 Capitol Way North
Olympia WA 98501 1091
Email: CENCIMAC@DFW.WAGOV

Appendix 3. Puyallup Tribe 2009 Fisheries Enforcement Report

PUYALLUP TRIBAL FISH & WILDLIFE

2009 ENFORCEMENT REPORT

1. Summary of 2009 Citations

Violation	Number of Incidents
Fish Wastage	9
Unmarked Gillnet	5
Fishing in Closed Waters	5
Illegal Gear	6
Unattended Driftnet	2
Unregistered Boat	1
Unlawful Assistance	2
Unmarked Crab Pot	16
Boat Collision	1
Rescue	2
Warnings	6

2. Carr Inlet (Area 13A)

Patrols detected violations in the following categories:

- Fishing in closed waters
- Fish wastage
- Unregistered vessel (expired sticker)
- Unmarked gillnet

Fishing effort was very high during the August Chinook fishery. An unmarked net was seized, and the tribal member was cited. Patrol investigated reports of illegal fishing in Burley Lagoon, but did not observe violations. There were no violations or citations issued during the September coho fishery. One fish wastage citation was issued during the October coho fishery. An abandoned or lost net, containing several fish, was recovered at Allen Point in October. Patrol located a vessel tied up onshore in Burley Lagoon, containing coho salmon. The owner was cited. Patrols during the November chum fishery indicated very low fishing effort; no illegal activity was detected. Night patrol on land at Minter Creek found no activity in that area.

3. **Chambers Bay (Area 13C)**

Patrols in the Chambers Bay detected violations in the following categories:

- Unmarked gillnet
- Illegal gear (over-length gillnet)

Patrols during the Chinook fishery focused on checking that gear was properly identified and in accordance with regulations. One net was seized, and the owner was cited. In September, tribal officers made day and night patrols, and responded to reports of illegal fishing. Fishing activity during October was very low; patrol investigated a report of a stolen beach seine.

4. **Puyallup River (Area 81B)**

Patrols of fisheries in the Puyallup River detected violations in the following categories:

- Fish wastage (3)
- Illegal gear
- Fishing in closed waters (1)
- Un-marked gillnet (2)
- Unlawful assistance (2)
- Un-attended drift gillnet

Puyallup Enforcement conducted boat and land patrols. During the Chinook fishery in August, patrol found one unmarked setnet. One citation, and two warning were issued. Three incidents of fish wastage involved a total of 110 Chinook. Conflict between tribal and recreational fishers prevented some tribal vessels from making drifts. Carcasses that were dumped onshore were returned to the river. Two unmarked nets were confiscated during the September fishery. Three incidents of fish wastage involved 404 fish. Patrol investigated reported use of explosives, found related to hazing of seals. There was little effort during the October coho fishery; one spousal ID card violation was observed. During the November chum fishery an active gillnet was removed from the river during closed period; its owner was identified and cited. Investigation of a stolen boat resulted in an arrest.

5. **Area 13**

   Officers investigated reports of illegal fishing in closed waters of Cedrona Bay, on Fox Island. Citations were issued to individuals identified from a photograph taken by a resident. Tribal fishers complained that permanent anchor buoys at Fox Island prevented their fishing in this area.

6. **Area 11 and 11A**

   Patrols in the vicinity of Vashon Island and Maury Island during the November chum fishery did not detect an illegal activity. A report of illegal fishing in Ollala Bay was investigated, but no activity was detected. One citation was issued for fish wastage, associated with a vessel moored in downtown Tacoma.