2009-2010

HOOD CANAL STEELHEAD HARVEST MANAGEMENT PLAN

Joint Report prepared by:

Washington Department of Fish and Wildlife
Jamestown S'Klallam Tribe
Port Gamble S'Klallam Tribe
Skokomish Tribe
Lower Elwha Klallam Tribe

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INTRODUCTION

The Washington Department of Fish and Wildlife, the Skokomish Tribe, the Lower Elwha Klallam Tribe, the Jamestown S'Klallam Tribe, the Port Gamble S'Klallam Tribe, and the Point No Point Treaty Council (representing the Jamestown S'Klallam Tribe and Port Gamble S'Klallam Tribe), have prepared the following harvest management plan for the 2009-2010 winter steelhead accounting period in Hood Canal. This plan establishes management guidelines for the steelhead resources of streams of Hood Canal, originating in WRIA 14, WRIA 15, WRIA 16 and WRIA 17 and of marine waters of Hood Canal (Marine Areas 12, 12A, 12B, 12C, 12D, 12H) and Port Gamble Bay (Marine Area 9A).

Wild winter steelhead populations are present in Hood Canal, but there is no current evidence of self-sustaining summer steelhead.

Management Units are identified for winter steelhead. Streams in the Skokomish Management Unit include the Skokomish River and its tributaries. Streams in the West Hood Canal Management Unit include the Hamma Hamma, Duckabush, Dosewallips, and Big and Little Quilcene rivers and several independent streams. Streams in the East Hood Canal Management Unit include the Union, Tahuya, and Dewatto rivers and several smaller independent streams.

PREMISES AND FISHERY OBJECTIVES

The provisions of this plan cover all Treaty and Non-Treaty fisheries for winter steelhead occurring in Hood Canal streams and Hood Canal marine areas. The co-managers agree to a philosophy of cooperation in implementing management programs to maintain, perpetuate and enhance the steelhead resource and the natural ecosystem that supports it.

This plan is intended to ensure that Treaty and Non-Treaty fishermen, subject to their respective regulatory authorities, shall be afforded the opportunities to harvest their shares as determined in United States v., Washington, 384 F. Supp. 312, aff'd 520 F.2d 676 (9th Cir. 1975), cert. denied 423 U.S. 1086, aff'd sub nom Washington v. Washington State Commercial Passenger Fishing Vessel Association, 443 U.S. 658 (1979) and other orders under the court's continuing jurisdiction.

The management intent is to preserve harvest opportunity while not impeding recovery of steelhead populations.

The co-managers agree to enact and recommend for enactment by the Pacific Fishery Management Council and the Pacific Salmon Commission, appropriate regulations for marine salmonid fisheries that will provide for adequate escapement of steelhead into the Hood Canal watersheds to achieve the intent and purposes of this plan.

MANAGEMENT PERIODS

The management periods define the time interval during which regulatory actions are directed to meeting conservation and allocation needs of steelhead stocks while taking into account harvest (actual or expected) of steelhead occurring outside of the management periods. Since many runs extend over lengthy periods of time and only a small portion of the population of each run is available at the extremes of its run timing, it is impractical to exercise directed management for non selective fisheries on these portions of runs while continuing harvests of other species or stocks. Effort should be spread throughout the management periods to achieve escapement and catch from all segments of the runs.

Winter Steelhead

Area	Management Period
Area 9A	November 29 through March 31
Hood Canal Rivers	December 6 through April 15

Management periods for winter steelhead were established by reviewing historical information on the timing of recreational catches. The end of the management period was adjusted to match the beginning of the spring Chinook management period.

The catch accounting period for all Treaty Indian and Non-Treaty fisheries in Hood Canal management areas is November 1 - April 30 for winter run steelhead.

HARVEST MANAGEMENT STRATEGIES

Past Harvest Strategy

Hatchery reared steelhead smolts were stocked in several of the major Hood Canal streams for several decades to provide recreational and tribal fishing opportunities. The Washington Department of Fish and Wildlife (WDFW) Chambers Creek / Bogachiel / Tokul Creek hatchery winter steelhead stock was used in most streams where hatchery-reared steelhead smolts were released. Beginning in 1985, all hatchery reared steelhead smolts were marked with an adipose-fin clip prior to release, in order to enable visual distinction between hatchery-reared steelhead and wild steelhead.

Treaty net fisheries generally targeted earlier returning, often hatchery-reared, winter run steelhead recruits returning primarily from December through February. Treaty hook-and-line fisheries were extended into March.

Beginning in 1987, Non-Treaty recreational fisheries in Hood Canal streams were primarily targeted at hatchery-reared steelhead. The recreational fishing season was closed during the spring to protect emigrating steelhead smolts and kelts. The season was open from June 1 through October 31 for game fish and wild (unmarked) steelhead release regulations were in effect during this period in all freshwater areas since 1992 and in all marine areas since 1993. The recreational winter steelhead season was open from November 1 through the last day of February. Wild (unmarked) winter steelhead release regulations were in effect in the Skokomish, Tahuya and Dewatto rivers since 1987, in all other Hood Canal rivers (when open during the winter steelhead season) since the 1994-95 season, and since 1993 in all marine areas. Beginning with the 2004-05 season, Hood Canal streams were progressively closed to Non-Treaty recreational fishing (Table 1); now all Hood Canal recreational fisheries are closed.

Some additional incidental harvest of steelhead may have occurred during Treaty and Non-Treaty fisheries directed at harvesting other species of salmon in freshwater and marine areas of Hood Canal.

Table 1 summarizes the implementation dates for steelhead regulations for the recreational fishery and also shows the last year hatchery winter steelhead smolts were released in Hood Canal streams.

Table 1. Implementation dates for wild steelhead regulations for recreational fisheries in Hood Canal streams; all other streams have been closed to all steelhead fishing. (Source: Thom H. Johnson, WDFW, Hood Canal District Fish Biologist)

Stream	Winter steelhead WSR regulations implemented a/	Winter steelhead recreational closure implemented b/	Last year hatchery winter-run steelhead smolts released c/
Hood Canal			
Marine Areas	04/16/1993	- -	- -
Dewatto R.	02/01/1987	2004-05 season	1990
Tahuya R.	02/01/1987	2004-05 season	1994
Union R.	1994-95 season	2004-05 season	1994
Skokomish R.	01/01/1987	2007-08 season	2004
Hamma Hamma R.	1994-95 season	2006-07 season	- -
Duckabush R.	1994-95 season	2006-07 season	2003
Dosewallips R.	1994-95 season	2006-07 season	2003
Big Quilcene R.	1994-95 season	2008-09 season	1990
Little Quilcene R.	1994-95 season	2008-09 season	- -

a/ WSR = wild steelhead release
b/ Winter steelhead season = Nov. 1 to Feb. 28
c/ These are only streams with hatchery winter-run steelhead smolts released in Hood Canal.

Current Harvest Strategy

The release of hatchery-reared steelhead smolts, in Hood Canal streams, has been discontinued, with the last hatchery summer-run smolts released in 1981 and the last hatchery winter-run smolts released in 2004. Few, if any (and then only from releases outside Hood Canal) hatchery winter or summer steelhead adults are expected to return to Hood Canal streams during the 2009-2010 season (or in subsequent seasons).

Treaty: Tribal subsistence fishery openings are limited to the Skokomish, Hamma Hamma, Dosewallips, Duckabush, Big Quilcene, Union, Dewatto, and Tahuya rivers. Commercial fishery openings in these rivers may only be enacted by emergency inseason regulations based on inseason management considerations concerning the status of the stocks. The status of the stocks in 2009-2010 does not appear to support commercial fisheries in Hood Canal rivers. A tribal commercial and subsistence fishery for steelhead occurs in Port Gamble Bay (Marine Area 9A). Some incidental harvest of steelhead may also occur during Treaty fisheries directed at harvesting other species of salmon in marine areas of Puget Sound and the Strait of Juan de Fuca.

Non-Treaty: All recreational fisheries for steelhead are closed in Hood Canal rivers during the 2009-2010 winter steelhead season. Wild (unmarked) steelhead release regulations will remain in effect in all marine recreational fisheries. The recreational fishing season will remain closed during the spring to protect steelhead kelts, smolts and juveniles from harvest. The season is open from the first Saturday in June through October 31 for game fish and wild (unmarked) steelhead release regulations are in effect during this period in all freshwater and marine areas. Some incidental harvest of steelhead may occur during Non-Treaty commercial net fisheries directed at harvesting other species of salmon in marine areas of Puget Sound and the Strait of Juan de Fuca.

TREATY and NON-TREATY HARVEST ACCOUNTING

The primary emphasis will be to achieve completeness and accuracy of harvest records. Each agency will be responsible to collect, reconcile, and present its own catch information. Harvest accounting shall include all commercial and recreational harvest of steelhead by Treaty and Non-Treaty fishers. Accounting will also include ceremonial and subsistence, test fishery catches, and the number of fish taken home by fishermen during commercial fisheries. All steelhead taken during commercial fisheries by tribal members will be reported on Treaty Indian Fish Receiving Tickets. Recreational harvest will be represented by WDFW's Catch Record Card estimate unless creel census information is available. An effort will be made to assess any incidental harvest of steelhead in Treaty and Non-Treaty commercial fisheries directed at harvesting other species of salmon in marine areas of Hood Canal. The co-managers will develop and utilize methods to estimate unrecorded catches not reported by the above methods.

HARVEST RATES

For each Hood Canal winter steelhead management unit, the potential combined impacts, from Treaty and Non-Treaty fisheries, are not expected to exceed 10% of the winter steelhead terminal run size to all Hood Canal marine and freshwater areas (south of the Hood Canal bridge). In addition, Low Abundance Thresholds (LATs) are established at 250 for East and West MU's, while no LAT is established for the Skokomish River. LATs are set at double the theoretical critical abundance for the East and West MUs, which provide a protection buffer within which harvest will remain very low and further reduce the risk that abundance will fall to the critical level. Should steelhead abundance increase and exceed the LAT, a less-constraining harvest regime will not be implemented for any MU until productivity is better quantified, escapement goals based on current habitat function are developed, and recovery goals are defined (PSIT and WDFW 2009). It is expected that there will be few Hood Canal steelhead harvested in Hood Canal terminal marine areas or in pre-terminal marine area fisheries. Incidental harvest of steelhead in commercial fisheries directed at harvesting salmon in marine areas of Hood Canal will be included in the estimation of cumulative impacts to Hood Canal steelhead where such catches can be identified.

Since the 1999-2000 season, the estimated terminal harvest rates of winter steelhead, for Treaty and Non-Treaty fisheries combined, have ranged annually from 0% to 3.1% for the Skokomish Management Unit, from 0% to 9.1% for the West Hood Canal Management Unit, and have been

0% for the East Hood Canal Management Unit (Table 2). These estimated impacts are based on winter steelhead index spawning escapement estimates (Table 3), the reported catch from tribal fisheries, and the estimated recreational catch of marked and unmarked steelhead from Catch Record Cards. In addition, for Hood Canal terminal marine areas, there were no reported steelhead harvests during the 1999-2000 through 2008-09 seasons.

Table 2. Estimated harvest, run size, and harvest rates for Hood Canal winter steelhead.

Management Unit and River	Fishery	Winter steelhead season 1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	Mean	a/
		Steelhead Harvest											
Hood Canal	Treaty	0	0	0	0	0	0	0	0	0	0		
Terminal Marine Areas	Non-treaty	0	0	0	0	0	0	0	0	0	0	0	
Skokomish MU	Treaty	0	0	0	0	0	0	0	4	9	6		
Skokomish River	Non-treaty	2	0	0	0	0	0	0	0	0	0		
MU total	harvest	2	0	0	0	0	0	0	4	9	6	6	
West Hood Canal MU													
Hamma Hamma R.	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	4	0	0	0	0	0	0	0	0		
Duckabush River	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	0	0	0	4	0	0	0	0	0		
Dosewallips River	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	0	0	0	0	0	0	0	0	0		
Big/Little Quilcene Rivers	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	4	33	0	0	0	0	0	0	0		
MU total	harvest	0	8	33	0	4	0	0	0	0	0	0	
East Hood Canal MU													
Union River	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	0	0	0	0	0	0	0	0	0		
Tahuya River	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	0	0	0	0	0	0	0	0	0		
Dewatto River	Treaty	0	0	0	0	0	0	0	0	0	0		
	Non-treaty	0	0	0	0	0	0	0	0	0	0		
MU total	harvest	0	0	0	0	0	0	0	0	0	0	0	
Skokomish MU		Estimated Run size b/ c/											
Skokomish River		263	286	156	132	233	286	231	409	294	573	425	f/
West Hood Canal MU													
Hamma Hamma R.de		19	19	230	134	214	123	70	193	198	81		
Duckabush River		36	13	16	8	33	10	21	16	18	12		
Dosewallips River		78	89	52	96	79	79	79	79	79	79		
Big/Little Quilcene Rivers		15	12	63	16	36	50	76	39	41	6		
MU total	runsize	148	133	361	254	362	262	246	327	336	178	204	e/ f/
East Hood Canal MU													
Union River		50	73	49	50	58	23	86	21	15	15		
Tahuya River		191	133	97	53	168	91	183	175	144	53		
Dewatto River		23	19	30	18	39	23	53	28	49	15		
MU total	runsize	264	225	176	121	265	137	322	224	208	83	209	f/
		Estimated Harvest Rate d/											
Skokomish MU		0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	3.1%	1.0%	1.7%	
West Hood Canal MU		0.0%	6.0%	9.1%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
East Hood Canal MU		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

a/ Mean of most recent 3 years for Skokomish MU and most recent 4 years for East and West Hood Canal MUs.

b/ (Escapement estimate) + (estimated harvest) = Estimated run size

c/ If escapement estimate not available for some streams in some years (see Table 3), it is estimated based on recent year mean.

d/ (Estimated harvest) / (Estimated run size) = Estimated harvest rate

e/ Hamma Hamma River run size includes 197, 4, 76, 0, 0, 139, and 131 steelhead adults released from supplementation program during 2001-02 through 2007-08 seasons, respectively; supplementation adults are excluded from expected run size forecast.

f/ In addition, steelhead return to tributaries or other independent streams in each MU, but no escapement estimates are available.

Table 3. Spawner escapement estimates for winter steelhead in Hood Canal streams, 1981-2009.

	Winter steelhead spawner escapement							
Year	Little Quilcene	Dosewallips	Duckabush	Hamma Hamma c/	Skokomish	Union	Tahuya	Dewatto
1980-81							94	12
1981-82					822		86	34
1982-83					659		44	22
1983-84					777		172	86
1984-85					968		185	102
1985-86					866		142	32
1986-87					546		119	3
1987-88					742		102	23
1988-89					1444		142	22
1989-90					370		164	no est.
1990-91					729		122	no est.
1991-92					172 (min)		73	no est.
1992-93					no est. a/		75	40
1993-94					473		77	18
1994-95		79		13	398		78	22
1995-96		55		8	no est. a/		92	39
1996-97		60	19 (min)	35	no est. a/		144	11
1997-98		49 (min)	6 (min)	18	373	45	126	28
1998-99	29	99 (min)	29 (min)	21	311	65	340	15
1999-2000	15	78	36	19	261	50	191	23
2000-01	8	89	13	3	286	73	133	19
2001-02	30	52	16	230	156 (min)	49	97	30
2002-03	16	96	8	134	132 (min)	50	53	18
2003-04	36	no est. a/	29	214	233	58	168	39
2004-05	no est. a/	no est. a/	10	123	no est. a/	23	91	23
2005-06	76	no est. a/	21	70	231	86	183	53
2006-07	39	no est. a/	16	193	405	21	175	28
2007-08	41	no est. a/	18	198	285 b/	15	144	49
2008-09	6 d/	no est. a/	12	81	567	15	53	15

a/ no escapement estimate was made because of high flows and/or poor visibility during surveys

b/ no surveys in North Fork due to poor visibility

c/ Includes 197, 4, 76, 0, 0, 139, and 131 steelhead adults released from supplementation program during 2001-02 through 2007-08 seasons, respectively

d/ minimum estimate due to frequency of surveys

Source: WDFW SaSI, updated 12-09, T.H. Johnson, WDFW

RUN SIZE FORECASTS and EXPECTED HARVEST RATES

Few, if any, hatchery reared steelhead adults are expected to return to Hood Canal rivers during the 2009-2010 season (or subsequent seasons) because, as noted above, traditional hatchery reared steelhead programs in support of harvest were terminated (last hatchery reared steelhead smolt release in 2004) with the last significant hatchery reared steelhead returns occurring in 2006-07.

For the purposes of this plan, the historic annual returns of winter steelhead have been expressed as the sum of index escapement estimates and reported harvest. For the 2009-2010 season, the return of winter steelhead was forecast based on the most recent 4-year mean of winter steelhead returns to the West Hood Canal Management Unit and to the East Hood Canal Management Unit. For the Skokomish Management Unit, the forecast is based on the mean of the returns during the 2006-07 through 2008-09 seasons because it represents years when landings have occurred. Similarly, the harvest rate of winter steelhead during the 2009-2010 season is forecast based on the most recent 4-year mean of winter steelhead harvest rates for each of the West Hood Canal and East Hood Canal Management Units. For the Skokomish Management Unit, the forecast is based on the mean harvest rate during the 2006-07 through 2008-09 seasons. Because escapement estimates are based on index area surveys which have not been expanded to obtain total escapement estimates, run size forecasts for winter steelhead are believed to be conservative.

Based on past management practice, the harvest rates are expected to be low during 2009-2010. The run size forecasts and expected harvest rates for winter steelhead in Hood Canal Management Units during the 2009-2010 season are summarized in Table 4. The run size forecast is 425+ steelhead in the Skokomish MU, 204+ steelhead for the West Hood Canal MU and 209+ steelhead for the East Hood Canal MU; the "+" accounts for steelhead runs into streams in each MU other than those shown in Table 2. Harvest rates are not expected to exceed 10% for each Management Unit.

Table 4. Run size forecasts and expected harvest rates for Hood Canal winter steelhead Management Units, 2009-2010 season.

	2009-2010 season	
Management Unit (MU)	Run size forecast	Expected harvest rate
Skokomish MU	425+	< 10%
West Hood Canal MU	204+	< 10%
East Hood Canal MU	209+	< 10%

STEELHEAD HARVEST MANAGEMENT OUTLINE FOR 2009-2010

During the winter steelhead accounting period (November 1 through April 30), the co-managers will use the following fisheries framework.

Treaty and Non-Treaty summary

A summary of the 2009-2010 harvest management regimes for the winter steelhead accounting period is provided below:

West Hood Canal MU (Big Quilcene, Dosewallips, Duckabush, Hamma Hamma)

Treaty	Commercial	Closed
	C&S	Jamestown S'Klallam, Port Gamble S'Klallam, and Lower Elwha Klallam Tribes: Closed by emergency regulation, 12/6/2009 through 3/15/2010
		Skokomish Tribe: Open 12/6/2009 through 4/15/2010. Hook and line gear only, bag limit 2.
Non-Treaty	Commercial	Closed
	Recreational	Big Quilcene & Little Quilcene R. Closed
		Dosewallips R. (from the mouth to Hwy 101 bridge); 11/1 - 12/15, Bag limit 2, Chum only, Min. Size 12", Release of wild steelhead.
		Duckabush R. (from the mouth to Mason PUD overhead line); 11/1 - 12/15, Bag limit 2, Chum only, Min. Size 12", Release of wild steelhead.
		Hamma Hamma R. Closed

East Hood Canal MU (Dewatto, Tahuya, Union)

Treaty	Commercial	Closed
	C&S	Open 12/6/2009 through 4/15/2010. Hook and line gear only, bag limit 2.
Non-Treaty	Commercial	Closed
	Recreational	Closed

Skokomish MU

Treaty	Commercial	Chum season: Open to gillnets, 11/15 through 12/5
	C&S	Open from the mouth to Vance Creek confluence; 12/6/2009 through 4/15/2010; Hook and line, bag limit 2 Gillnets open by permit, up to 2 days/week.
Non-Treaty	Commercial	Closed
	Recreational	From the mouth to Hwy 101 bridge; 10/1 through 12/15; night closure to 11/30, anti-snagging rule, barbless hooks. Game fish: Catch and Release. Salmon: Min. Size 12", Bag limit 6, up to 4 adults; Release Chinook.
		From Hwy 101 to forks; Closed
		Skokomish North Fork; Closed
		Skokomish South Fork and Vance Creek; Closed

In addition, an effort will be made to assess any incidental harvest of steelhead in Treaty and Non-Treaty fisheries directed at harvesting other species of salmon in marine or freshwater areas of Hood Canal from November 1, 2009 through April 30, 2010.

Hood Canal Mainstem (Marine Areas 12, 12A, 12B, 12C, 12D, 12H)

Treaty	Commercial	Open for the harvest of chum salmon as follows:
	& C&S	Areas 12, 12A (south of an E-W line through Pt. Whitney): Open 10/18 through 11/20, 7 d/wk Area 12B: Open 10/25 through 11/20; 7 d/wk Area 12C: Open 11/1 through 11/27; 7 d/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 inseason adjustments. Starting 11/1, hatchery escapement control measures will go into effect

Non-Treaty	Commercial	Areas 12 – 12B: Open Wks 43 (wb 10/18) through wk 47 (wb 11/15), PS Chinook non-retention; PS fishing pattern: 1,2,1,2,1; GN fishing pattern: 2,2,2,2,2, daylight hours Area 12A: Closed Area 12C Open Wks 46 (wb 11/8) through Wk 48 (wb 11/22), if needed to attain NT share. PS release Chinook; PS fishing pattern: 1,1,1; GN fishing pattern: 2,2,2. Area 12D: Closed Area 12H: BS (Hoodsport Hatchery zone) fishery in wks 46 - 48 pending discussions with the Co-Managers
	Recreational	CRC Area 12: Year-round TROUT, catch-and-release except up to 2 hatchery steelhead may be retained 10/16 – 12/31 4 fish limit ; 1 Chinook (Chinook min. size 22”); single point barbless hooks 1/1 – 1/31 Closed 2/1 – 4/30 2 fish limit (Chinook 22” min. size), release unmarked Chinook; single point barbless hooks Hoodsport Hatchery Zone; 7/1 – 12/31 4 fish limit, no minimum size, only 2 Chinook greater than 24”; chum release 7/1-10/15; night closure; single point barbless hooks .

Port Gamble (Marine Area 9A)

Treaty	Commercial & C&S	Area 9A: Open for harvest of chum salmon 11/1 through 12/5 Area 9A: Open for harvest of steelhead 11/29/09 through 1/30/10
Non-Treaty	Commercial	Area 9A: Closed
	Recreational	CRC Area 9: Year-round TROUT, catch-and-release except up to 2 hatchery steelhead may be retained 11/1 – 11/30 2 fish limit, release unmarked Chinook (Chinook min. size 22”), single point barbless hooks only. 12/1 – 1/15 Closed 1/16 – 4/15 2 fish limit, release unmarked Chinook (Chinook 22” min. size), single point barbless hooks only. 4/16 – 4/30 Closed

ESCAPEMENT OBJECTIVES

No escapement objectives have been agreed to between WDFW and the Tribes for any runs of winter steelhead returning to natural spawning areas in Hood Canal rivers. The co-managers agree that the definition of escapement objectives is necessary for efficient fisheries management.

Escapement objectives may be based on steelhead productivity and productive capacity under current physical and biotic habitat conditions in each Management Unit. Given the fact that insufficient information exists on which to base productivity and capacity estimates (e.g., recruit per spawner relationships), various approaches will be considered to develop initial escapement strategies. For example, preliminary analyses using the Ecosystem Diagnosis and Treatment (EDT) methodology have recently been completed for steelhead in the Hamma Hamma, Duckabush, and Dosewallips rivers. The co-managers will consider the merits of these results for use developing Viable Salmonid Population parameters, including abundance, productivity, capacity, distribution and diversity. In addition, in the interim, by managing for a harvest rate of less than 10%, sufficient protection will be provided to winter steelhead in Hood Canal MUs.

ADDITIONAL CONSERVATION MEASURES

The co-managers will continue to work together towards understanding, restoring and maintaining the abundance, distribution, diversity, and long-term productivity of steelhead and their habitats to assure healthy, self-sustaining stocks.

- Natural Production- Studies have been initiated to collect and analyze genetic information to better understand genetic structure and diversity of Hood Canal steelhead. Preliminary results for winter steelhead indicate that (1) there appears to be a distinction between steelhead in each river sampled, (2) there appears to be a clustering of the West Hood Canal (Skokomish, Hamma Hamma, Duckabush, and Dosewallips - -note: genetic data has been collected but not yet analyzed for Little Quilcene) and the East Hood Canal (Tahuya, Dewatto, and Big Beef Creek) aggregations of steelhead, although the Hamma Hamma steelhead appear differentiated from all of the others; (3) the data suggests there is apparent genetic divergence between the natural winter steelhead stocks and the hatchery winter steelhead stocks (Bogachiel and Tokul Creek) which had been released as hatchery smolts in Hood Canal in the past; and (4) samples within a river system tend to cluster more closely with each other, regardless of life history type (e.g., parr, smolt) or location (upstream or downstream of anadromous barriers) (personal communication, Don Van Doornik, NMFS).

- Escapement Objectives- Methodologies for the development of escapement rates, goals, thresholds, or ranges for all Management Units will be investigated and considered for adoption by the co-managers in the near future. In the interim, by managing for a harvest rate less than 10%, sufficient protection will be provided to winter steelhead in Hood Canal Management Units.

- Habitat Management- The co-managers will continue to contribute to habitat protection and restoration efforts. The Hood Canal Coordinating Council (HCCC) working with State, Federal, County agencies, Tribes, regional fisheries enhancement groups, nongovernmental organizations, and other local parties, prepared a Hood Canal / Eastern Strait of Juan de Fuca Habitat Recovery Strategy (HCCC 2005) and a Process Guide (HCCC 2009) to serve as the basis for planning and funding habitat recovery projects. This strategy will be applied to prioritize and implement habitat protection and restoration efforts for steelhead (as well as for ESA-listed Chinook and summer chum salmon). Efforts will also be continued to work with counties and other land-use regulatory authorities within Hood Canal to provide protection to steelhead habitats through the updating and development of land-use regulations, including shoreline management plans, critical areas ordinances, comprehensive plans, minimum stream flow and water quality plans, etc.

- Artificial Production- The release of hatchery-reared steelhead smolts, for harvest purposes, has been discontinued in Hood Canal with the last hatchery summer-run smolts released in 1981 and the last winter-run hatchery smolts released in 2004. To aid in the recovery of self-sustainable winter steelhead populations in three Hood Canal streams (namely, the South Fork Skokomish, Duckabush, and Dewatto rivers), a new integrated conservation (supplementation) program, using indigenous stocks, was implemented beginning with brood year 2007. A longer-term goal of the project is to provide a harvestable surplus of returning winter steelhead adults to support Treaty and Non-Treaty fisheries. The Hood Canal Steelhead Project (Berejikian et al. 2007) is a collaborative effort between National Marine Fisheries Service (NMFS), Washington Department of Fish and Wildlife, Skokomish Tribe, the Point No Point Treaty Council, Long Live the Kings, and the Hood Canal Salmon Enhancement Group. A Hatchery Genetic Management Plan (HGMP) for the supplementation program has been prepared and submitted to NMFS for review; the HGMP includes a copy of the full supplementation study plan. In addition, a supplementation program for steelhead is proposed on the North Fork Skokomish River; this program should use the same approaches and protocols as the Hood Canal Steelhead Project.

- Monitoring and Evaluation- The co-managers will continue to conduct spawner surveys to monitor steelhead spawning escapements in Hood Canal rivers. Monitoring of steelhead harvest will continue in Treaty and Non-Treaty fisheries, including any incidental steelhead harvest in fisheries directed at other species. Smolt traps are being operated to measure and monitor freshwater production in the Skokomish MU (South Fork Skokomish River), the West Hood Canal MU (Hamma Hamma, Duckabush and Little Quilcene rivers), and the East Hood Canal MU (Tahuya and Dewatto rivers and Big Beef, Little Anderson, Stavis, and Seabeck creeks). Studies will be continued to collect genetic information to better understand genetic structure and diversity of Hood Canal steelhead. A comprehensive monitoring plan needs to be developed by the co-managers.

- Adaptive Management and Integration- The co-managers advocate that a strong adaptive management program be developed and implemented within a framework to integrate habitat, hatchery, and harvest management programs. Adaptive management of steelhead recovery for Hood Canal rivers will be part of the larger adaptive management effort being developed for Puget Sound Steelhead.

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Skokomish Tribe representative — Date: 12/21/09

Port Gamble S'Klallam Tribe representative — Date: 12/22/09

Jamestown S'Klallam Tribe representative — Date: 12/23/09

Lower Elwha Klallam Tribe representative — Date: 12/23/09

Washington Department of Fish and Wildlife representative — Date