

2008-2009

**WINTER STEELHEAD
HARVEST MANAGEMENT PLAN
for the DUNGENESS MANAGEMENT UNIT**

**in
DUNGENESS BAY (AREA 6D)
DUNGENESS RIVER (AREA 76A)**

DRAFT

Joint Report Prepared by:

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Point No Point Treaty Council
(for the Port Gamble and Jamestown S'Klallam Tribes)
Lower Elwha Klallam Tribe**

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INTRODUCTION

The Washington Department of Fish and Wildlife (WDFW), the Point No Point Treaty Council (PNPTC) (on behalf of the Jamestown S'Klallam and Port Gamble S'Klallam Tribes), and the Lower Elwha Klallam Tribe agree on the following strategy for the 2008-09 winter steelhead (*Oncorhynchus mykiss*) season. This plan establishes management guidelines for the steelhead resources of the Dungeness Management Unit, in the Dungeness River (Area 76A) and Dungeness Bay (Area 6D).

PREMISES AND FISHERY OBJECTIVES

The provisions of this plan cover all treaty and non-treaty fisheries for steelhead in the Dungeness River system or nearby 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 fishermen 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 parties 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 Dungeness River watershed to achieve the goals and purposes of this plan.

MANAGEMENT UNIT(S)

This Plan covers a single Management Unit (MU), the Dungeness watershed winter run steelhead. No component sub populations have been identified in this MU. Available information for the Dungeness MU is outlined in Table 1.

MANAGEMENT AND ACCOUNTING PERIODS

The management periods, indicated in this Plan, define the time interval during which regulatory actions are directed to meeting conservation and allocation needs of steelhead runs while taking into account incidental steelhead catches (actual or expected) of steelhead that may occur outside 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. However, fisheries should be spread throughout the management periods in order to achieve escapement and harvest from all segments of the run

Management periods for Dungeness River winter steelhead, in each catch reporting area, were estimated on the basis of historical harvest patterns of the recreational fishery and have been adjusted to minimize overlaps with the management periods of other species.

2008 – 2009 Winter Steelhead Management Periods:

Area 6D: November 30, 2008 – March 31, 2009

Area 76A: December 14, 2008 – April 15, 2009

The Winter Steelhead Harvest Accounting period for all treaty Indian and nonTreaty recreational fisheries in the Dungeness River is November 1 to April 30.

WILD WINTER STEELHEAD BACKGROUND

Dungeness wild winter steelhead are managed as a separate Management Unit (MU) based on their relative spawning isolation provided by the Dungeness and Gray Wolf rivers and their tributaries (WDF et al. 1993). Most spawning occurs from mid February through early June. The stock is largely supported by naturally spawning fish of native origin. However, it is unknown whether significant genetic introgression from hatchery plants of earlier timed steelhead derived from Chambers Creek stock has occurred. Allozyme analysis of 68 juvenile steelhead sampled from the Dungeness River in 1994 clustered with Hood Canal winter stocks (Phelps et al. 1997). The parental origin of the sampled individuals is uncertain and may have been influenced by hatchery reared steelhead, introduced summer run steelhead, or even conspecific rainbow trout..

HATCHERY PRODUCTION

Currently, approximately 10,000 hatchery reared steelhead are released annually in the Dungeness watershed (Table 1). The hatchery stock is derived from the early timed Bogachiel River stock, and for many years was transferred from the Bogachiel Hatchery, but in recent years has come from a stock of similar origins in the Elwha River. An agreement to explore localizing the source to the Dungeness River has recently been reached, and will require developing a means of capturing broodstock from the river since few steelhead voluntarily return to the hatchery. Currently, green eggs are transferred from the Elwha Hatchery to the Hurd Creek Hatchery facility, located on a tributary in the lower Dungeness watershed, for accelerated hatching and rearing in warmer spring water, then transferred to the Dungeness Hatchery at river mile 10.5 in March prior to release in early June. All hatchery-produced steelhead are marked with an adipose fin clip to enable mark selective fishing opportunities, as well as enable monitoring of stray rates, should funding to perform this task become available.

Steelhead smolts are released on or after June 1 to avoid any deleterious impacts to listed Dungeness Chinook sub-yearlings migrating seaward. This strategy will be re-evaluated, using the known Chinook emigration pattern from three years of screw trap data. The June 1 release date limit for hatchery reared steelhead and coho salmon may be adjusted to further reduce interspecific competition and predation risks.

Table 1. Dungeness Winter Steelhead Harvest and Hatchery Smolts Released.

Return Season	Harvest			Smolts Released	
	Recreational	Treaty	Total	Year	Number
61-62	1,296		1,296	1961	
62-63	1,081		1,081	1962	19,456
63-64	2,897		2,897	1963	18,092
64-65	1,526		1,526	1964	
65-66	1,546		1,546	1965	12,535
66-67	2,227		2,227	1966	15,017
67-68	1,987		1,987	1967	14,125
68-69	1,141		1,141	1968	14,934
69-70	781		781	1969	25,841
70-71	1,668		1,668	1970	24,300
71-72	2,139		2,139	1971	20,355
72-73	670		670	1972	17,680
73-74	647		647	1973	13,942
74-75	526		526	1974	25,137
75-76	359		359	1975	20,050
76-77	386		386	1976	30,004
77-78	1,094		1,094	1977	40,067
78-79	308	67	375	1978	30,319
79-80	411	181	592	1979	24,751
80-81	629	67	696	1980	20,012
81-82	518	158	676	1981	20,070
82-83	376	61	437	1982	17,013
83-84	448	142	590	1983	18,561
84-85	388	106	494	1984	14,828
85-86	226	48	274	1985	15,877
86-87	400	9	409	1986	15,433
87-88	409	44	453	1987	15,545
88-89	143	6	149	1988	20,077
89-90	169	0	169	1989	20,123
90-91	116	14	130	1990	20,256
91-92	115	4	119	1991	15,000
92-93	73	0	73	1992	15,100
93-94	148	8	156	1993	15,264
94-95	215	0	215	1994	18,850
95-96	168	0	168	1995	9,900
96-97	126	0	126	1996	10,008
97-98	22	1	23	1997	9,800
98-99	79	5	84	1998	9,000
99-00	51	0	51	1999	11,000
00-01	44	2	46	2000	10,465
01-02	200	26	226	2001	12,199
02-03	66	3	69	2002	10,250
03-04	53	0	53	2003	13,715
04-05	40	33	73	2004	10,500
05-06	35	1	36	2005	9,825
06-07	33	67	100	2006	10,900
07-08	23	14	37	2007	16,700

Note: Hatchery winter steelhead smolts released into the Dungeness River at age 1 (1.) in 2007 will return as age 3 (1.1+) adults in 2008-09 and age 4 (1.2+) adults in 2009-2010.

WINTER STEELHEAD SPAWNING SURVEYS and SMOLT PRODUCTION

In the Dungeness MU, estimates of natural spawners are limited to index counts (Table 2) in the lower Dungeness and a portion of the Gray Wolf River. Survey reaches were established in the late 1980s in the lower 11 miles of the Dungeness River and the lower 2.5 miles of the Gray Wolf River. The Dungeness River presents a challenge because of its natural tendency to carry glacial silt during high springtime flows, limiting visibility. A renewed effort needs to be funded and mounted to correct this information deficiency. Furthermore winter steelhead spawner surveys have been limited to periods after March 1 in most seasons. These streams often flood during the recommended spawner survey period and the amount of information collected will depend on suitable river conditions. It is anticipated that these index enumerations will continue, when water conditions permit. Information regarding smolt production from these escapements is somewhat limited (Table 1). Therefore, direct estimates of productive capacity and productivity have not been possible. For this reason, no escapement targets or ranges have been defined for this MU.

Table 2. Estimated wild steelhead escapement in Dungeness and Greywolf index areas and wild smolt production estimates in Matriotti Creek and the Dungeness River.

Year	Spawning Escapement		Estimated Smolt Emigration	
	Dungeness H.	In-River	Matriotti Crk.	Dungeness R.
1988		439		
1989		429		
1990		408		
1991		423		
1992		292		
1993		338		
1994		337		
1995				
1996		261		
1997				
1998	0		1,353	
1999	0		676	
2000	6		448	
2001	3			
2002	12			
2003	10		508	
2004	22		619	
2005	34		640	9,192
2006	18		555	6,125
2007	39		1,665	11,445
2008	4		593	Final estimate not available

NOTES:

- 1) Spawning Escapement Index estimates should be treated as conservative minimums, because they only include a portion of the redds, are generally limited only to redds present after March 1 and are often hampered by poor visibility due to flow conditions.
- 2) Spawning Survey Reaches include: Dungeness R. RM 0.9 to RM 11.0 and Gray Wolf R. RM 0.0 to RM 2.5
- 3) Steelhead smolt production monitored Matriotti Creek, a Dungeness tributary, by Jamestown Klallam Tribe and WDFW.
- 4) Estimated steelhead smolt production in Dungeness River monitored by WDFW screw trap (Topping et al 2008.) and calculated using a mark-recapture method made available by marking steelhead smolts released from the smolts trapped in Matriotti Creek and recapturing marked smolts at the screw trap.

HARVEST MANAGEMENT OUTLINE FOR 2008 - 2009

For winter steelhead, there is uncertainty regarding the status of the wild stock and the degree of run timing overlap between hatchery and naturally reared steelhead in the Dungeness MU. Limited available information indicates that catches after the end of February may be comprised primarily of naturally reared steelhead. In order to provide additional protection for that portion of the run, fishery related mortalities, after the end of February are being severely limited. This management strategy is expected to provide for the harvest of hatchery – reared steelhead while limiting impacts to later, likely mostly wild, steelhead entering the streams after March 1. More specifically, for the 2008 – 2009 winter steelhead accounting period, the following regulatory framework has been adopted by the co-managers.

The framework represents fishery scenarios similar to those used in recent years and is expected to result in similar harvest levels (Table 1). For the 2008-09 season, using the mean of the past four years, it is anticipated that the resulting harvest will be **62±31**.

Area 6D Dungeness Bay Net

Chum	All	Closed
Winter Steelhead	Treaty	Open, west of line drawn from Dungeness Light to 3 Crabs, week beginning 12/7/08 through 2/28/09, Up to 4.5 days per week. 1,500 ft closure around Dungeness River mouth.

Dungeness River Treaty Commercial (Non-treaty closed)

Chum	Closed
Winter Steelhead	Open downstream of US Hwy 101 bridge to the river mouth, from 12/14/08 through 2/28/09, up to four days per week. Hook and line bag limit four fish.

Dungeness River Treaty Hook and Line Subsistence

Winter Steelhead	Open downstream of US Hwy 101 bridge to the river mouth, from 11/30/08 through 3/14/09. Bag limit two fish.
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Dungeness Bay Non-Treaty Recreational

11/1-4/30	Closed to salmon angling.
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Dungeness River Non-Treaty Recreational

Coho	10/16–12/31	Mouth to Hatchery intake pipe at RM 11.3; 4 fish limit, coho only; 12” min size.
Winter Steelhead / Trout	10/16-2/28	Mouth to Dungeness Forks Campground; 2 fish limit, 14” min size; unmarked steelhead prohibited; Gray Wolf River: CLOSED WATERS from mouth at Dungeness Forks Campground to bridge at RM 1.0. Upstream to Olympic National Park Boundary: 2 fish limit, 14” min size; unmarked steelhead prohibited; Selective gear rules.

Net fishery openings, where appropriate, shall be announced by emergency regulations based on in-season management considerations concerning the status of the stocks.

CATCH ACCOUNTING

Harvest accounting will include all commercial (including take – home), recreational and subsistence harvest in each Management Unit. Direct harvest will be reported as appropriate, on fish receiving tickets, recreational catch record cards, and treaty subsistence record cards. The co-managers will further investigate viable methods to estimate unrecorded catches or other bycatch mortalities, not reported by the above methods.

ADDITIONAL CONSERVATION MEASURES

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

- **Natural Production-** Achieving these goals for the winter steelhead stock in the Dungeness system begins with gaining an understanding of its current abundance and spawning distribution, and an understanding of its genetic composition in relation to the early timed hatchery stock. The co-managers will continue to protect natural production through recreational wild steelhead release regulations in freshwater and marine areas and closing the river to recreational steelhead fishing by March 1. Improved management of this stock is hampered by a lack of estimates of natural escapement, straying rates of hatchery reared fish, and productivity estimates. Currently a screw trap is sampling juvenile out-migrants from February through August, and data to estimate steelhead smolt emigration are available (Topping et al, 2008). An accurate estimate of naturally spawning adults is needed to gain an understanding of the productivity of the natural stock improve steelhead escapement criteria consistent with the watershed productive capacity and productivity and further the goal of restoring and maintaining a healthy and productive population.
- **Habitat Protection and Restoration-** The Dungeness River Management Team will continue working with local government authorities, salmon coalitions, and the public with on-going stream habitat protection and estuarine restoration efforts in the Dungeness watershed. Drawdown of summer flows in the Dungeness River, for irrigation, has resulted in lower than historical summer flows, with likely consequences leading to a diminished carrying capacity for steelhead juveniles and other salmonids, compared to historical levels, as well as entrainment of juveniles into irrigation canals. Extensive flood control and diking of the lower river, combined with a paucity of large woody debris has focused the river's energy at high water into a narrow slot, creating an unstable river bed that limits successful egg incubation, consequently lowering production. Current efforts to restore the lower river habitat, limit water removals, and provide effective screening of water intakes are aimed at repairing and minimizing the negative effect of past human practices on the productivity of the salmonid stocks in the river.
- **Fishery Management-** Recreational harvest is managed to focus on hatchery steelhead while seeking to control negative effects on wild steelhead. Wild Steelhead Release has been implemented in the recreational fishery since the 1993/94 season. Treaty harvest has been relatively low in recent years, as indicated in Table 1 Harvest of naturally reared

steelhead in the Dungeness River is thought to be minimal and should be having little impact on the health and abundance of the natural population.

- **Artificial Production-** The goal for the current hatchery program located within the Dungeness watershed is to provide maximum opportunity for treaty and non-treaty fishers to harvest hatchery winter run steelhead consistent with maintaining the health and stable abundance of the natural stock. Hatchery reared winter steelhead smolt releases in Dungeness River averaged 15,000 to 20,000 from 1977 to 1994 and then were decreased to 10,000 annually to reduce potential interactions with wild fish. The likely earlier timing of the introduced hatchery stock may act to limit interbreeding with the natural population. The Hatchery Scientific Review Group (HSRG) and regional managers considered the effects of the program and their recommendations are summarized in their report:http://wdfw.lltk.org/pdf/hsrg/HSRG_Recommendations_Eastern_Straits.pdf. Guidelines for this hatchery program will adhere to the protocols outlined in the Harvest and Genetic Management Plan (HGMP):
http://wdfw.wa.gov/hat/hgmp/pdf/puget_sound/steelheaddungeness_steelhead3.pdf.
- **Monitoring, Evaluation, and Adaptive Management –** The Co-Managers will continue to pursue funding sources to monitor wild steelhead adult spawner escapement and smolt production in the Dungeness River.

References cited

Phelps, Stevan R., Stevan A. Leider, Patrick L. Hulett, Bruce M. Baker, Thom Johnson. 1997. Genetic Analyses of Washington Steelhead: Preliminary Results Incorporating 36 New Collections from 1995 and 1996. Washington Department of Fish and Wildlife. Progress Report, Feb. 1997.

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Washington Dept. of Fisheries., Washington Dept. of Wildlife., and Western Washington Treaty Indian Tribes. 1993. 1992 Washington State salmon and steelhead stock inventory. Northwest Indian Fisheries Commission, State of Washington Dept. of Fisheries, Dept. of Wildlife, Olympia, Wash.

Washington State Conservation Commission. 1999. Salmon and Steelhead Habitat Limiting Factors, WRIA 18, Dungeness/Elwha Watershed. Final Report 12/27/99. Donald Haring

Additional Sources

Habitat Limiting Factors Analysis for WRIA 18, (Washington State Conservation Commission, 1999)

Also:

<http://www.olympus.net/community/dungenesswc/>

<http://www.ecy.wa.gov/apps/watersheds/planning/18.html>

http://www.jamestowntribe.org/jstweb_2007/programs/nrs/nrs_dunriv.htm

<http://www.pnptc.org/publications.htm>