

**2006-2007 WINTER AND SUMMER STEELHEAD**

**MANAGEMENT RECOMMENDATIONS**

**for Tributaries to the Strait of Juan de Fuca  
(other than the Elwha River)**

**DRAFT**

**Joint Report Prepared by:**

**Washington Department of Fish and Wildlife  
Point No Point Treaty Council  
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**2006-2007 WINTER AND SUMMER STEELHEAD MANAGEMENT  
RECOMMENDATIONS  
for Tributaries to the Strait of Juan de Fuca**

**1 Management Periods**

The management periods indicated in this report define the time interval during which regulatory actions are directed at meeting conservation and allocation needs of steelhead runs while taking into account catches (actual or expected) of steelhead made 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 on these portions of runs while continuing harvests of other species.

Management periods for winter and summer steelhead in streams along the Strait of Juan de Fuca were estimated on the basis of historical harvest patterns of the recreational fishery, and cover the central 80 percent of the entry distribution. They have also been adjusted to minimize overlaps with the management periods of other species. The following management periods have been identified for each area:

**Winter Steelhead**

Dungeness Bay  
Dungeness River  
Discovery Bay and Sequim Bay Tributaries  
Hoko River and Sekiu River  
Other Strait Tributaries

**Management Periods**

December 3, 2006 through March 31, 2007  
December 10, 2006 through April 15, 2007  
December 10, 2006 through April 30, 2007  
December 10, 2006 through March 31, 2007  
December 3, 2006 through April 15, 2007

**Summer Steelhead**

Miscellaneous Tributaries

**Management Periods**

June 10, 2007 through September 8, 2007

Though management periods miss the extremes of entry timing, steelhead catch accounting periods are broader in an attempt to account for all catch; for all Strait of Juan de Fuca rivers and streams the catch accounting period is November 1 through April 30 for winter steelhead, and May 1 through October 31 for summer steelhead.

**2. Management Recommendations**

Current uncertainty regarding the abundance of steelhead runs in most Strait streams suggests that all parties maintain the recent years' fisheries regime, with no major modifications. Prior to implementing any significant change, the parties should agree on its potential effect on the resource and on their fisheries.

The status of naturally reared (wild) winter steelhead stocks in Strait of Juan de Fuca streams is either depressed or unknown. and catches after the end of February are comprised primarily of

naturally reared steelhead. There is also some uncertainty regarding the run timing of naturally reared stocks. Limited available information indicates that catches after the end of February may be comprised primarily of naturally reared steelhead. Hence, while in most cases effort should be spread throughout the management periods to achieve escapement and catch from all segments of the run, in streams where earlier timed hatchery origin recruits may be present, harvest should be skewed towards the earlier portions of entry, in order to reduce impacts on later timed naturally spawning fish.

No escapement goals have been agreed to between WDFW and the Tribes for any natural stocks of winter or summer steelhead in the Strait of Juan de Fuca streams. Escapement criteria should be developed for these populations.

With the exception of the Hoko, abundance forecasts for Strait of Juan de Fuca streams are not available. Lack of escapement estimates and harvest related mortality for individual streams precludes producing reliable estimates of run sizes, and consequently stock productivity is not currently available. While escapement estimates are not currently available, escapement data has been collected over several years and continues to be collected from consistent index reaches in many Strait streams (Table A16).

In the Hoko River the anticipated return was estimated as the mean of the last five years' harvest plus escapement estimates.

All steelhead reared in hatcheries should be marked with an adipose fin clip prior to release in Strait rivers and streams, unless managers agree otherwise prior to release.

## **2.1 Winter Steelhead**

Earlier timed hatchery winter steelhead smolts were released into the Dungeness, Morse, Lyre, Pysht, Clallam, Hoko, and Sekiu rivers in 2005, and hatchery reared steelhead adults are expected to return to these systems during the 2006-07 season. No other Strait of Juan de Fuca streams were stocked with hatchery reared steelhead.

### Treaty Fisheries

In recent years, Treaty net fisheries have generally been targeted at earlier returning, often hatchery reared winter steelhead recruits which are expected to return primarily from December through February.

Treaty commercial net fishery openings shall be implemented only in the Dungeness, Morse, Lyre, Pysht, Clallam, Hoko, and Sekiu rivers and will be announced by emergency regulations based on in-season management considerations concerning the status of the steelhead stocks. Marine area commercial net fisheries will be restricted to Dungeness Bay, Pysht Bay, Neah Bay, and the Morse Creek river mouth, ending prior to March 1. In accordance with prior agreements between the Treaty Tribes and the WDFW, the Pysht Bay fishery will be limited to a maximum of 65 fish. In all other Strait of Juan de Fuca rivers, hook and line commercial and subsistence fisheries will close to treaty fisheries for winter steelhead on or before March 15.

#### Non-Treaty Fisheries

In order to minimize recreational fishery impacts to wild winter steelhead, wild (unmarked) steelhead release regulations have been in effect for recreational fisheries from June 1 through February 28 in the Dungeness River since the 1993-94 season, in Morse Creek since the 1994-95 season, and in the Sekiu River, Clallam River, Salt Creek, Lyre River, East Twin River, and West Twin River since the 1996-97 season. East Twin River is currently closed to winter steelhead fishing. Additionally, wild (unmarked) steelhead release regulations have been in effect since 1993 in all marine areas. The statewide wild steelhead retention rule during 2006-07 is: one wild steelhead per license year may be retained from one of twelve designated rivers. The Hoko and Pysht rivers are included in this group.

## **2.2 Summer Steelhead**

The status of wild summer steelhead stocks in the Strait of Juan de Fuca tributaries is unknown. Hatchery summer steelhead are now planted only in the Lyre river

#### Treaty Fisheries

Treaty Tribes intend to exercise their opportunity to harvest the majority of their share of summer steelhead during the winter steelhead management period. Therefore no treaty fisheries directed at summer steelhead will occur in Strait of Juan de Fuca streams.

#### Non-Treaty Fisheries

The recreational fishing season in Strait streams will open from June 1 through October 31 for game fish, including hatchery summer steelhead. Wild steelhead release regulations have been in effect during these fisheries in all freshwater areas since 1992 and in all marine areas since 1993 to protect wild (unmarked) summer steelhead.

## **3. Winter Steelhead Spawner Surveys**

Steelhead spawner escapements are monitored in a number of Strait of Juan de Fuca streams. WDFW steelhead spawner survey sections are listed in Appendix Table A15 by river mile. Steelhead spawner surveys and escapement estimates have been made on Snow Creek and in WDFW index sections on the Dungeness River, McDonald Creek, Morse Creek, Salt Creek plus tributaries, East Twin River, West Twin River, Deep Creek, Clallam River, Pysht River plus

South Fork Pysht River, and Hoko River plus Little Hoko River (Appendix Table A.16). 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.

# **Historical Harvest, Stocking, and Escapement Data for Winter and Summer Steelhead**

**In Strait of Juan de Fuca Streams**

## **Appendix Tables A**

### **Strait of Juan de Fuca Steelhead.**

Table A.1	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in the Dungeness River.
Table A.2	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in Morse Creek.
Table A.3	Winter Steelhead Harvest in Salt Creek.
Table A.4	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in the Lyre River.
Table A.5	Winter Steelhead Harvest in the East Twin River.
Table A.6	Winter Steelhead Harvest in the West Twin River.
Table A.7	Winter Steelhead Harvest in Deep Creek.
Table A.8	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in the Pysht River.
Table A.9	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in the Clallam River.
Table A.10	Winter Steelhead Harvest, Index Escapement, Smolts Released, and Return to Harvest in the Hoko River.
Table A.11a	Winter Steelhead Harvest, Smolts Released, and Return to Harvest in the Sekiu River.
Table A.11b	Projected Harvestable Number of Winter Steelhead in the Sekiu River.
Table A.12	Summer Steelhead Harvest in the Dungeness River
Table A.13	Summer Steelhead Harvest in Morse Creek.
Table A.14	Harvest and Return Rates of Summer Steelhead in the Lyre River.
Table A.15	Steelhead Spawner Survey Index Sections by River and River Mile.
Table A.16	Winter Steelhead Natural Escapement in Index Sections of Streams along the Strait of Juan de Fuca.

**Appendix Table A.1 Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in the Dungeness River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index<sup>1</sup></b>
1980-81	629	67	696	1979	24,800	0.0268
1981-82	518	158	676	1980	20,000	0.0309
1982-83	376	61	437	1981	20,100	0.0218
1983-84	448	142	590	1982	17,000	0.0336
1984-85	388	106	494	1983	18,600	0.0271
1985-86	226	48	274	1984	14,800	0.0169
1986-87	400	9	409	1985	15,900	0.0262
1987-88	409	44	453	1986	15,400	0.0292
1988-89	143	6	149	1987	15,545	0.0096
1989-90	169	0	169	1988	20,100	0.0088
1990-91	116	14	130	1989	20,123	0.0065
1991-92	115	4	119	1990	20,300	0.0059
1992-93	73	0	73	1991	15,000	0.0044
1993-94	148	8	156	1992	15,100	0.0103
1994-95	215	0	215	1993	15,300	0.0141
1995-96	168	0	168	1994	18,850	0.0091
1996-97	126	0	126	1995	9,900	0.0102
1997-98	22	0	22	1996	10,000	0.0022
1998-99	79	0	79	1997	9,800	0.0080
1999-00	51	0	51	1998	9,000	0.0055
2000-01	44	0	44	1999	11,000	0.0043
2001-02	200	26	226	2000	10,500	0.0209
2002-03	66	0	66	2001	12,200	0.0056
2003-04	53	0	53	2002	10,250	0.0051
2004-05	40	0	40	2003	13,715	0.0031
2005-06	35	1	36	2004	12,076	0.0026
Mean 2001-02 to 2005-06			84		11,533	0.0075

<sup>1</sup>Index is calculated assuming Age 3, Age 4, and Age 5 plus repeat spawner contributions of hatchery-reared fish sampled from recreational and tribal fisheries from Quillayute system (Bogachiel stock).



**Appendix Table A.2 Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in Morse Creek.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1980-81	357	166	523	1979	12,900	0.0389
1981-82	290	116	406	1980	12,300	0.0324
1982-83	310	258	568	1981	18,000	0.0359
1983-84	546	216	762	1982	15,400	0.0480
1984-85	285	351	636	1983	16,400	0.0393
1985-86	235	281	516	1984	15,500	0.0326
1986-87	223	200	423	1985	15,900	0.0268
1987-88	188	283	471	1986	18,800	0.0260
1988-89	215	58	273	1987	15,200	0.0166
1989-90	189	45	234	1988	15,000	0.0156
1990-91	90	0	90	1989	15,514	0.0059
1991-92	135	0	135	1990	10,100	0.0129
1992-93	96	12	108	1991	14,700	0.0082
1993-94	195	0	195	1992	15,200	0.0129
1994-95	117	2	119	1993	15,400	0.0077
1995-96	300	11	311	1994	15,338	0.0203
1996-97	150	0	150	1995	15,029	0.0099
1997-98	73	0	73	1996	5,076	0.0106
1998-99	53	0	53	1997	5,000	0.0105
1999-00	110	0	110	1998	5,000	0.0220
2000-01	49	0	49	1999	5,000	0.0098
2001-02	133	0	133	2000	5,000	0.0259
2002-03	23	0	23	2001	5,000	0.0046
2003-04	4	0	4	2002	5,000	0.0008
2004-05	158	3	161	2003	5,000	0.0322
2005-06	52	3	55	2004	5,000	0.0110
Mean 2001-02 to 2005-06			75		5,000	0.0149

**Appendix Table A.3 Winter Steelhead Harvest in Salt Creek.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979-80	98	0	98
1980-81	27	0	27
1981-82	55	79	134
1982-83	15	0	15
1983-84	46	0	46
1984-85	28	18	46
1985-86	11	0	11
1986-87	32	11	43
1987-88	2	13	15
1988-89	2	9	11
1989-90	37	2	39
1990-91	11	0	11
1991-92	36	0	36
1992-93	16	0	16
1993-94	17	0	17
1994-95	6	0	6
1995-96	8	0	8
1996-97	8	0	8
1997-98	8	0	8
1998-99	6	0	6
1999-00	4	0	4
2000-01	4	0	4
2001-02	13	0	13
2002-03	10	0	10
2003-04	16	0	16
2004-05	0	0	0
2005-06	17	0	0
Mean of 2001-02 to 2005-06			8

**Appendix Table A.4 Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in the Lyre River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1980-81	961	152	1,113	1979	30,000	0.0370
1981-82	685	173	858	1980	26,500	0.0308
1982-83	921	576	1,497	1981	30,100	0.0521
1983-84	1,100	443	1,543	1982	26,000	0.0577
1984-85	1,283	545	1,828	1983	22,100	0.0796
1985-86	635	350	985	1984	25,900	0.0403
1986-87	903	281	1,184	1985	15,600	0.0651
1987-88	788	566	1,354	1986	23,600	0.0624
1988-89	623	343	966	1987	20,700	0.0445
1989-90	564	444	1,008	1988	25,200	0.0415
1990-91	444	55	499	1989	30,200	0.0185
1991-92	462	66	528	1990	24,100	0.0216
1992-93	366	0	366	1991	25,000	0.0148
1993-94	362	0	362	1992	25,400	0.0143
1994-95	796	100	896	1993	25,100	0.0355
1995-96	1,103	0	1,103	1994	26,094	0.0425
1996-97	892	0	892	1995	25,169	0.0351
1997-98	87	0	87	1996	25,159	0.0035
1998-99	452	1	453	1997	25,012	0.0181
1999-00	659	0	659	1998	25,061	0.0263
2000-01	429	0	429	1999	25,000	0.0171
2001-02	1,037	0	1,037	2000	25,000	0.0404
2002-03	262	0	262	2001	25,000	0.0105
2003-04	271	0	271	2002	25,000	0.0109
2004-05	335	0	335	2003	25,000	0.0134
2005-06	402	0	402	2004	25,000	0.0161
Mean 2001-02 to 2005-06			456		25,000	0.0182

**Appendix Table A.5 Winter Steelhead Harvest in the East Twin River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979-80	17	0	17
1980-81	17	0	17
1981-82	20	0	20
1982-83	31	0	31
1983-84	78	0	78
1984-85	0	0	0
1985-86	10	0	10
1986-87	27	0	27
1987-88	27	2	29
1988-89	9	14	23
1989-90	12	11	23
1990-91	8	2	10
1991-92	28	13	41
1992-93	4	0	4
1993-94	6	0	6
1994-95	6	0	6
1995-96	44	0	44
1996-97	3	0	3
1997-98	8	0	8
1998-99	9	0	9
1999-00	0	0	0
2000-01	73	0	73
2001-02	6	0	6
2002-03	0	0	0
2003-04	0	0	0
2004-05	0	0	0
2005-06	0	0	0
Mean of 2001-02 to 2005-06			1

**Appendix Table A.6 Winter Steelhead Harvest in the West Twin River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979-80	10	0	10
1980-81	0	0	0
1981-82	17	0	17
1982-83	6	0	6
1983-84	62	0	62
1984-85	0	0	0
1985-86	16	0	16
1986-87	17	0	17
1987-88	27	0	27
1988-89	15	4	19
1989-90	14	9	23
1990-91	2	0	2
1991-92	8	0	8
1992-93	14	0	14
1993-94	8	0	8
1994-95	23	0	23
1995-96	12	0	12
1996-97	8	0	8
1997-98	0	0	0
1998-99	0	0	0
1999-00	0	0	0
2000-01	11	0	11
2001-02	14	0	14
2002-03	16	0	16
2003-04	0	4	4
2004-05	8	0	8
2005-06	0	0	0
Mean of 2001-02 to 2005-06			8

**Appendix Table A.7 Winter Steelhead Harvest in Deep Creek.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979-80	7	0	7
1980-81	39	0	39
1981-82	27	0	27
1982-83	98	0	98
1983-84	95	0	95
1984-85	93	0	93
1985-86	49	0	49
1986-87	70	0	70
1987-88	56	17	73
1988-89	54	11	65
1989-90	10	12	22
1990-91	17	10	27
1991-92	32	5	37
1992-93	24	0	24
1993-94	6	0	6
1994-95	22	0	22
1995-96	4	0	4
1996-97	0	0	0
1997-98	0	0	0
1998-99	0	0	0
1999-00	0	0	0
2000-01	0	0	0
2001-02	0	0	0
2002-03	16	0	16
2003-04	10	0	10
2004-05	4	0	4
2005-06	3	0	3
Mean of 2001-02 to 2005-06		7	

**Appendix Table A.8 Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in the Pysht River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1980-81	158	145	303	1979	11,800	0.0242
1981-82	108	108	216	1980	9,000	0.0214
1982-83	114	194	308	1981	15,100	0.0241
1983-84	259	171	430	1982	13,052	0.0320
1984-85	440	205	645	1983	14,100	0.0465
1985-86	131	177	308	1984	9,100	0.0280
1986-87	280	156	436	1985	10,600	0.0426
1987-88	351	173	524	1986	10,100	0.0513
1988-89	246	184	430	1987	10,300	0.0420
1989-90	97	113	210	1988	10,100	0.0207
1990-91	49	30	79	1989	10,450	0.0077
1991-92	212	204	416	1990	10,100	0.0411
1992-93	166	141	307	1991	13,500	0.0248
1993-94	122	181	303	1992	11,400	0.0254
1994-95	206	129	335	1993	21,500	0.0179
1995-96	172	110	282	1994	15,351	0.0175
1996-97	188	118	306	1995	15,215	0.0201
1997-98	23	11	34	1996	10,070	0.0031
1998-99	127	28	157	1997	10,010	0.0154
1999-00	85	12	97	1998	10,017	0.0097
2000-01	201	45	246	1999	10,000	0.0246
2001-02	224	38	262	2000	10,000	0.0255
2002-03	24	53	77	2001	10,000	0.0077
2003-04	30	37	67	2002	10,003	0.0067
2004-05	37	94	131	2003	10,000	0.0008
2005-06	8	142	8	2004	10,003	0.0067
Mean 2001-02 to 2005-06			109		10,000	0.0108

**Appendix Table A.9 Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in the Clallam River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1980-81	74		74	1979	5,500	0.0110
1981-82	58		58	1980	5,200	0.0110
1982-83	132		132	1981	10,100	0.0150
1983-84	74	59	133	1982	8,600	0.0150
1984-85	40	157	197	1983	10,000	0.0203
1985-86	29	74	103	1984	10,300	0.0101
1986-87	114	93	207	1985	10,400	0.0200
1987-88	73	309	382	1986	10,100	0.0376
1988-89	45	144	189	1987	5,208	0.0273
1989-90	47	15	62	1988	5,100	0.0121
1990-91	26	1	27	1989	5,068	0.0053
1991-92	28	67	95	1990	0	0.0703
1992-93	35	9	44	1991	5,900	0.0112
1993-94	48	21	69	1992	4,000	0.0154
1994-95	88	0	88	1993	6,400	0.0153
1995-96	69	0	69	1994	5,247	0.0128
1996-97	57	0	57	1995	5,375	0.0107
1997-98	5	0	5	1996	5,152	0.0010
1998-99	86	3	89	1997	5,000	0.0176
1999-00	31	0	31	1998	5,010	0.0062
2000-01	25	0	25	1999	5,000	0.0050
2001-02	53	121	174	2000	5,000	0.0339
2002-03	18	26	44	2001	5,000	0.0088
2003-04	6	43	49	2002	5,000	0.0096
2004-05	18	12	30	2003	5,000	0.0060
2005-06	11	0	11	2004	5,000	0.0022
Mean 2001-02 to 2005-06			62		5,000	0.0121



**Appendix Table A.10 Winter Steelhead Harvest, Index Escapement, Smolts Released, and Return to Harvest in the Hoko River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Index Wild Escapement</b>	<b>Minimum Run Size</b>	<b>Exploitation Rate</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1985-86	253	103	356	726	1,082	0.3290	1984	10,500	0.0355
1986-87	510	486	996	792	1,788	0.5570	1985	15,600	0.0692
1987-88	275	385	660	913	1,573	0.4196	1986	15,100	0.0432
1988-89	240	258	498	699	1,197	0.4160	1987	12,000	0.0395
1989-90	174	157	331	770	1,101	0.3006	1988	15,100	0.0253
1990-91	91	41	132	861	993	0.1329	1989	15,468	0.0085
1991-92	197	122	319	394	713	0.4474	1990	15,600	0.0205
1992-93	286	168	454	425	879	0.5165	1991	16,046	0.0285
1993-94	169	177	346	453	799	0.4330	1992	15,906	0.0217
1994-95	284	263	547	792	1,339	0.4085	1993	23,546	0.0242
1995-96	220	340	560	667	1,227	0.4564	1994	21,000	0.0258
1996-97	372	138	510	397	907	0.5623	1995	20,855	0.0244
1997-98	79	208	287	756	1,043	0.2752	1996	20,463	0.0139
1998-99	275	445	720	990	1,710	0.4211	1997	20,156	0.0356
1999-00	367	27	394	770	1,164	0.3385	1998	21,065	0.0190
2000-01	346	94	440	365	805	0.5466	1999	21,700	0.0198
2001-02	477	107	584	787	1371	0.4260	2000	20,800	0.0278
2002-03	237	109	346	497	843	0.4104	2001	20,800	0.0167
2003-04	143	179	322	747	1069	0.3012	2002	20,000	0.0159
2004-05	64			499		0.0742	2003	18,978	
2005-06	135			408		0.2523	2004	26,195	
Forecast Run Size (Return years 2001-02 to 2005-06)						878			
Mean Exploitation Rate (Return years 1984-85 through 2005-06; exclude 1990/91)						0.3596			
Total Harvestable (Run Size * Exploitation Rate)						316			

**Appendix Table A.11a Winter Steelhead Harvest, Smolts Released,  
and Return to Harvest in the Sekiu River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>	<b>Smolt Year</b>	<b>Smolts Stocked</b>	<b>Smolt-to-harvest Index</b>
1979-80	24	111	135	1978		
1980-81	27	130	157	1979		
1981-82	27	25	52	1980		
1982-83	48	78	126	1981		
1983-84	25	53	78	1982		
1984-85	29	53	82	1983		
1985-86	42	149	191	1984		
1986-87	65	16	81	1985		
1987-88	36	74	110	1986		
1988-89	32	56	88	1987		
1989-90	10	33	43	1988		
1990-91	4	39	43	1989	5,077	0.0085
1991-92	20	20	40	1990	5,016	0.0079
1992-93	25	17	42	1991	4,773	0.0087
1993-94	28	48	76	1992	4,951	0.0155
1994-95	71	30	101	1993	12,129	0.0099
1995-96	39	24	63	1994	8,528	0.0066
1996-97	38	17	55	1995	10,104	0.0057
1997-98	6	7	13	1996	9,605	0.0013
1998-99	37	0	37	1997	9,602	0.0039
1999-00	9	0	9	1998	10,447	0.0009
2000-01	18	40	58	1999	9,900	0.0058
2001-02	67	43	110	2000	10,100	0.0109
2002-03	40	93	133	2001	10,000	0.0133
2003-04	31	74	105	2002	10,700	0.0100
2004-05	61			2003	5,546	
2005-06	118			2004	9,249	
Mean of 2000-01 to 2004-05						

**Appendix Table A.11b Projected Harvestable Number of Winter Steelhead in the Sekiu River.**

<b>Return Year</b>	<b>Recreational Hoko R. Harvest</b>	<b>Treaty Hoko R. Harvest</b>	<b>Total Hoko R. Harvest</b>	<b>Smolt Year</b>	<b>Sekiu smolt releases</b>	<b>Hoko smolt releases</b>	<b>Projected harvestable number in Sekiu River <sup>1/</sup></b>
1990-91	91	41	132	1989	5,077	15,468	39
1991-92	197	122	319	1990	5,016	15,600	92
1992-93	286	168	454	1991	4,773	16,046	122
1993-94	169	177	346	1992	4,951	15,906	97
1994-95	284	263	547	1993	12,129	23,546	254
1995-96	220	340	560	1994	8,528	21,000	205
1996-97	373	138	511	1995	10,104	20,855	223
1997-98	79	208	287	1996	9,605	20,463	121
1998-99	283	445	728	1997	9,602	20,156	312
1999-00	367	27	394	1998	10,477	21,065	176
2000-01	346	94	440	1999	9,900	21,700	181
2001-02	477	107	584	2000	10,100	20,800	255
2002-03	237	109	346	2001	10,000	20,800	150
2003-04	143	179	322	2002	10,700	20,000	155
2004-05	61			2003	5,546	18,978	
2005-06	118			2004	9,249	26,195	
Five year mean total harvest							
50%							

1/ Methodology: Harvestable number in Sekiu River= ((Sekiu smolt release (Year X) / Hoko smolt release (Year X))\* Hoko harvest corresponding return Year Y \* 0.90

**Appendix Table A.12 Summer Steelhead Harvest in the Dungeness River.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979	71	0	71
1980	254	6	260
1981	274	32	306
1982	136	2	138
1983	99	0	99
1984	162	0	162
1985	53	0	53
1986	52	0	52
1987	62	0	62
1988	71	7	78
1989	101	0	101
1990	27	0	27
1991	38	0	38
1992	33	0	33
1993	21	0	21
1994	42	0	42
1995	16	0	16
1996	27	0	27
1997	3	0	3
1998	3	0	3
1999	16	0	16
2000	30	0	30
2001	52	0	52
2002	6	3	9
2003	0	0	0
2004	0	0	0
2005	0	0	0
Mean of 2001 to 2005			12

**Appendix Table A.13 Summer Steelhead Harvest in Morse Creek.**

<b>Return Year</b>	<b>Recreational Harvest</b>	<b>Treaty Harvest</b>	<b>Total Harvest</b>
1979	17	0	17
1980	44	0	44
1981	10	0	10
1982	12	0	12
1983	6	0	6
1984	7	0	7
1985	17	0	1
1986	4	0	4
1987	2	0	2
1988	0	0	0
1989	4	0	4
1990	2	0	2
1991	4	0	4
1992	0	0	0
1993	3	0	3
1994	3	0	3
1995	0	0	0
1996	4	0	4
1997	10	0	10
1998	3	0	3
1999	0	0	0
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
Mean of 2001 to 2005			0

**Appendix Table A.14 Summer Steelhead Harvest and Return Rates of in the Lyre River.**

Summer Run Year	Sport Harvest	Treaty Harvest	Total Harvest	Age 1.1	Age 1.2	Age 1.3	Smolt Year	Smolts Stocked	Age 1.1 Return Rate	Age 1.2 Return Rate	Age 1.3 Return Rate	Total Return Rate
1986	97	0	97	4	76	14	1985	7,525	0.0005	0.0081	0.0015	0.0101
1987	77	0	77	3	61	11	1986	5,000	0.0006	0.0125	0.0038	0.0168
1988	79	0	79	3	62	12	1987	9,100	0.0003	0.0113	0.0011	0.0126
1989	130	0	130	5	102	19	1988	10,008	0.0005	0.0052	0.0003	0.0060
1990	66	0	66	3	52	10	1989	10,260	0.0002	0.0018	0.0005	0.0025
1991	23	0	23	1	18	3	1990	8,235	0.0001	0.0031	0.0005	0.0036
1992	32	0	32	1	25	5	1991	0				
1993	26	0	27	1	20	4	1992	9,900	0.0001	0.0133	0.0040	0.0174
1994	167	0	167	6	132	24	1993	16,200	0.0004	0.0133	0.0033	0.0169
1995	273	0	273	10	215	40	1994	20,579	0.0005	0.0138	0.0005	0.0149
1996	361	0	361	14	284	53	1995	21,422	0.0006	0.0027	0.0001	0.0035
1997	74	0	74	3	58	11	1996	15,241	0.0002	0.0008	0.0005	0.0015
1998	16	0	16	1	13	2	1997	5,100	0.0001	0.0073	0.0029	0.0103
1999	47	0	47	2	37	7	1998	10,001	0.0002	0.0081	0.0024	0.0107
2000	103	0	103	4	81	15	1999	10,056	0.0004	0.0127	0.0009	0.0141
2001	164	0	164	6	129	24	2000	10,000	0.0006	0.0049	0.0010	0.0065
2002	62	0	62	2	49	9	2001	10,000	0.0002	0.0054	0.0001	
2003	68	0	68	3	54	10	2002	10,000	0.0003			
2004	6	0	6	0	5	1	2003	0				
2005	32	0	32	1	25	5	2004	0				

Historical returns were broken down using the average return year age composition of Kalama River Summer Steelhead ( 1.1= 3.8%; 1.2= 78.8%; 1.3= 14.6% ). Other age groups and repeat spawners are accounted for by dividing by 0.972

**Appendix Table A 15. Steelhead Spawner Survey Index Sections by River and River Mile.**

<b>Stream name</b>	<b>WRIA number</b>	<b>WDFW Steelhead Spawner Survey Index Sections by River Mile (RM)</b>
Dungeness River 1/	18.0018	RM 0.9 to RM 11.0
Gray Wolf River 1/	18.0048	RM 0.0 to RM 2.5
McDonald Creek	18.0160	RM 0.0 to RM 5.4
Morse Creek	18.0185	RM 0.0 to RM 4.7
Salt Creek	19.0007	RM 1.5 to RM 6.4
Salt Creek Tributary	19.0014	RM 0.0 to RM 0.8
Salt Creek tribs	19.0011, 19.0012	RM 0.0 to RM 0.3 and RM 0.0 to RM 0.4, respectively
East Twin River	19.0082	RM 0.0 to RM 2.6
West Twin River	19.0093	RM 0.0 to RM 2.9
Deep Creek	19.0103	RM 0.0 to RM 4.8
Clallam River	19.0129	RM 3.6 to to RM 9.5
Pysht River	19.0113	RM 5.1 to RM 11.9
S. Fork Pysht River	19.0115	RM 0.0 to RM 1.9
Hoko River	19.0148	RM 3.5 to RM 21.3
Little Hoko River	19.0149	RM 0.0 to RM 3.5

1/ Dungeness River and Gray Wolf River surveys are dependent upon stream flows. Many surveys are not conducted during the season due to high flows.

