

2010-2011 Upper Columbia River Steelhead Fishery Summary

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ABSTRACT

Washington Department of Fish and Wildlife (WDFW) implemented a selective recreational steelhead fishery in the upper Columbia River (UCR) during fall 2010 and winter 2011. The fishery was conducted as a conservation measure to reduce the proportion of hatchery origin steelhead on the spawning grounds.

Fishery areas included the main stem Columbia River from Priest Rapids Dam to Chief Joseph Dam, Entiat, Wenatchee, Methow, Okanogan, and Similkameen Rivers. Harvest regulations were enacted and provided for a mandatory retention of only adipose fin-clipped hatchery steelhead. Creel census activities were conducted to monitor the fishery and to estimate the fishery impacts to natural origin upper Columbia River steelhead as required by NOAA Fisheries Permit 1395. Enforcement monitoring occurred throughout the duration of the fishery from September 8, 2010 through March 31, 2011.

Steelhead escapement above Priest Rapids Dam was estimated during October 2010 to be 26,352 steelhead with a natural origin steelhead component of 7,642 fish. Natural origin fish escapement to the Wenatchee, Methow and Okanogan/Similkameen Rivers was estimated at 1,345, 1,773, and 474, respectively. The remaining 4,050 of the natural origin fish were assigned to the below Wells Dam steelhead population.

An estimated 23,910 anglers fished a total of 93,504 fishing hours and caught 11,610 steelhead, of which 5,219 were adipose absent fish of hatchery origin, 3,937 were adipose present hatchery origin, and 2,454 were natural origin steelhead.

The UCR steelhead fishery was successful in removing 4,779 adipose absent steelhead from the above Wells Dam steelhead population, and represented a 64.5% reduction in the adipose-absent steelhead headed to the spawning grounds.

Fishery impacts to natural origin steelhead from catch and release mortality included 46 Wenatchee River steelhead, 70 Methow River steelhead and 20 Okanogan/Similkameen River steelhead. Total natural origin impacts (136) represented 64.2% of the allowable impacts (212) estimated during the in-season forecast. All natural origin steelhead impacts remained within Tier 1 for the Wenatchee system and Tier 2 for the Methow/Okanogan system based on guidelines set by NOAA Fisheries Permit 1395.

Enforcement monitoring during the fishery expended 872 hours contacting 1,124 anglers with 185 violations, including arrests, gear infractions, no license/endorsement, and warnings.

TABLE OF CONTENTS

	Page
ABSTRACT	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iii
LIST OF APPENDICES	iv
INTRODUCTION	1
FISHERY AREAS	1
METHODS	2
Run-Cycle Population Estimate	2
Creel Monitoring	2
Fishery Impacts to Natural Origin Steelhead	2
RESULTS	3
Run-Cycle Population Estimate	3
Creel Monitoring	4
<i>Mainstem Columbia River (Priest Rapids to Rocky Reach)</i>	4
<i>Mainstem Columbia River (Rocky Reach to Wells)</i>	5
<i>Mainstem Columbia River (Wells to Chief Joseph)</i>	6
<i>Wenatchee River</i>	7
<i>Entiat River</i>	8
<i>Methow River</i>	9
<i>Okanogan River</i>	10
<i>Similkameen River</i>	11
Fishery Impacts to Natural Origin Steelhead	12
<i>Below Priest Rapids</i>	12
<i>Wenatchee River</i>	12
<i>Methow River</i>	12
<i>Okanogan/Similkameen Rivers</i>	13
Hatchery Origin Removal due to Fishery Activities	13
<i>Methow/Okanogan/Similkameen Rivers</i>	13
<i>Wenatchee River</i>	13
FISHERY ENFORCEMENT	14
REFERENCES	15
APPENDICES	16

LIST OF TABLES

	Page
Table 1. Three tiered system for determining natural origin impacts during the recreational fishery on steelhead in UCR tributaries.....	2
Table 2. Pre-season, in-season, and post-season tributary and main stem escapement estimates for upper Columbia River steelhead 2010-2011.....	3
Table 3. Projected sub-basin escapement, allowable NOR mortality, and final NOR take of upper Columbia River steelhead above Priest Rapids Dam.	3
Table 4. Summary of the 2010-2011 UCR steelhead fishery in the Columbia River mainstem between Priest Rapids and Rocky Reach Dams.	4
Table 5. Summary of the 2010-2011 UCR steelhead fishery in the Columbia River mainstem between Rocky Reach and Wells Dams.	5
Table 6. Summary of the 2010-2011 UCR steelhead fishery in the Columbia River mainstem between Wells and Chief Joseph Dams.	6
Table 7. Summary of the 2010-2011 UCR steelhead fishery in the Wenatchee River	7
Table 8. Summary of the 2010-2011 UCR steelhead fishery in the Entiat River	8
Table 9. Summary of the 2010-2011 UCR steelhead fishery in the Methow River	9
Table 10. Summary of the 2010-2011 UCR steelhead fishery in the Okanogan River	10
Table 11. Summary of the 2010-2011 UCR steelhead fishery in the Similkameen River.	11
Table 12. Summary of WDFW enforcement for the 2010-2011 UCR steelhead fishery ..	14

LIST OF APPENDICES

	Page
APPENDIX A1. Emergency rule change for steelhead fisheries on the mainstem Columbia, Methow, Okanogan, Similkameen, Wenatchee, and Entiat Rivers, September 3, 2010	15
APPENDIX A2. Emergency rule change for season extension on steelhead fisheries upstream of Priest Rapids, Feb 5, 2011	17

INTRODUCTION

Washington Department of Fish and Wildlife (WDFW) implemented a selective recreational steelhead fishery in the upper Columbia River (UCR) during fall 2010 and winter 2011. The fishery was implemented as a conservation measure to reduce the proportion of hatchery origin steelhead on the spawning grounds. Reducing the proportion of hatchery origin adults on the spawning grounds in years of over escapement is consistent with fishery actions described in NOAA Fisheries ESA Section 10 Permit 1395.

Based on projected steelhead run estimates and origins from Priest Rapids Dam and Wells Dam stock assessment sampling, the recreational fishery satisfied “Tier 1” for the mainstem Columbia from Priest Rapids Dam to Wells Dam, including the Wenatchee and Entiat Rivers, and “Tier 2” for the mainstem Columbia from Wells Dam to Chief Joseph Dam, including the Methow, Okanogan and Similkameen systems, as defined in ESA Section 10 Permit 1395. Harvest regulations required single, barbless hooks and provided for a mandatory retention on adipose fin-clipped hatchery steelhead. Creel census activities were conducted to monitor the fishery and to estimate the fishery impacts to natural origin upper Columbia River steelhead. Enforcement monitoring occurred throughout the duration of the fisheries.

FISHERY AREAS AND SEASONS

- 1) Mainstem Columbia River, from Priest Rapids Dam to 400 feet below Chief Joseph Dam September 8, 2010 through March 31, 2011
- 2) Wenatchee River, from the mouth to the Icicle River Road Bridge September 8, 2010 through March 31, 2011
- 3) Entiat River, from the alternate Highway 97 Bridge near the mouth of the Entiat River to 800 feet downstream of the Entiat National Fish Hatchery outfall from September 8, 2010 through March 31, 2011
- 4) Methow River, from the mouth to the confluence with the Chewuch River in Winthrop from September 8, 2010 through March 31, 2011
- 5) Okanogan River, from the mouth upstream to Hwy 97 Bridge in Oroville from October 1, 2010 through March 31, 2011, except for two sections which closed March 15, 2011
- 6) Similkameen River, from the mouth to 400 feet below Enloe Dam from November 1, 2010 through March 31, 2011

METHODS

Run-Cycle Population Estimates

The 2010 - 2011 upper Columbia River steelhead run-cycle abundance and distribution to the various sub-basins upstream of Priest Rapids Dam (PRD) was estimated using the combined information from: steelhead stock assessment data collected at PRD; steelhead count by origin, pit tag return data collected at Rock Island, Rocky Reach, Wells and Tumwater dams, and 1999/2001 steelhead radio telemetry data. Additionally, stock assessment data from Wells Dam was used to verify the PRD projected 2010-2011 run-cycle adult steelhead abundance and origin composition in areas above Wells Dam.

Creel Monitoring

Creel surveys were conducted to monitor the fishery and to estimate the fishery impacts to upper Columbia River steelhead. The survey used a two-stage non-uniform probability method of sampling similar to those used by (Malvestuto 1978), but as described in *Creel Information from Sport Fisheries in WDFW Methods Manual* (Hahn et. al.1993). Based on creel information collected, the total fishing effort and sport catch was estimated, which includes impacts to natural origin steelhead.

Fishery Impacts to Natural Origin Steelhead

When the natural origin UCR steelhead run is predicted to exceed 1,300 fish at Priest Rapids and the total UCR steelhead run is predicted to exceed 9,550 steelhead, a fishery can be used to remove excess adipose fin clipped steelhead. To minimize impacts to natural origin steelhead in the tributary fisheries, a three tiered system as outlined in Permit 1395 with NOAA Fisheries, is used to determine maximum allowable natural origin steelhead take during the fishery (Table 1).

Table 1. Three tiered system for determining natural origin impacts during the recreational fishery on steelhead in UCR tributaries above Rock Island Dam.

	Wenatchee River		Methow River		Okanogan River	
	NOR ¹	Impact ²	NOR ¹	Impact ²	NOR ¹	Impact ²
	≤599	0%	≤499	0%	≤119	0%
Tier 1	600	2%	500	2%	120	5%
Tier 2	1,700	4%	1,600	4%	120	7%
Tier 3	2,500	6%	2,500	6%	600	10%

¹ Estimated natural origin escapement to tributaries

² Maximum allowable take on natural origin fish

RESULTS

Run-Cycle Population Estimates

Based on Priest Rapids, Tumwater and Wells Dams stock assessment data updated in-season during October 2010, adult escapement above Priest Rapids Dam was projected at 26,352 steelhead, including 7,642 natural origin fish (Table 2). In-season October escapement numbers were used to recalculate allowable incidental steelhead impacts during the 2010-2011 steelhead fishery (Table 3).

Table 2. Pre-season, in-season, and post-season tributary and main stem escapement estimates for upper Columbia River steelhead 2010-2011.

River System	August 2010 ¹		October 2010 ²		April 2011 ³	
	Total	NOR	Total	NOR	Total	NOR
Wenatchee	4,817	1,493	3,294	1,345	2,913	1,175
Methow	15,176	1,973	10,356	1,773	9,479	1,604
Okanogan and Similkameen	4,034	524	2,741	474	2,613	447
Columbia from Priest Rapids to Wells Dam, including Entiat River	14,616	4,511	9,961	4,050	9,469	3,852
Total	38,643	8,501	26,352	7,642	24,474	7,078

¹ Pre-season estimate

² In-season estimate

³ Post-season estimate

Table 3. Projected sub-basin escapements, allowable NOR mortality and final NOR take of upper Columbia River steelhead above Priest Rapids Dam updated October 2010.

Fishery Area	Total Escapement	NOR Escapement	Allowable NOR Take ²	Final NOR Take ³
Wenatchee	3,294	1,345	27	12
Methow	10,356	1,773	71	70
Okanogan and Similkameen	2,741	474	33	20
Columbia from Priest Rapids to Wells Dam, including Entiat River	9,961	4,050	81	34
Total	26,352	7,642	212	136

¹ Includes fishery area from old Hanford town-site upstream to Priest Rapids Dam

² Mortality take for NOR escapement (2% Wenatchee, 4% Methow, 7% Okanogan, 2% Columbia)

³ Number of NOR released during fishery times 5% hook and release mortality (includes 11 NOR catch and release mortalities between old Hanford town site and Priest Rapids Dam, and 1 NOR mortality found along the Methow River)

Creel Monitoring

Mainstem Columbia River (Priest Rapids Dam to Rocky Reach Dam)

An estimated 1,602 anglers fished 5,960 hours and caught a total of 539 steelhead, of which 89 were adipose-absent, 187 were adipose present hatchery, and 263 were natural origin steelhead (Table 4).

Table 4. Estimated summary of the 2010-2011 UCR steelhead fishery in the Columbia River between Priest Rapids and Rocky Reach Dams

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	1,129	2,014	827	680	833	155	322	5,960
Hours/angler	3.8	3.6	2.9	4.1	4.8	3.4	4.1	3.7
Total Anglers	300	561	281	164	172	46	78	1,602
Total steelhead caught	74	97	47	233	73	0	15	539
Ad-absent hatchery retained	28	35	0	15	11	0	0	89
Ad-absent hatchery released	0	0	0	0	0	0	0	0
Total ad-present released	46	62	47	218	62	0	15	450
Ad-present hatchery released	13	25	19	96	27	0	7	187
Natural-origin released ¹	33	37	28	122	35	0	8	263
Ad-absent hatchery mortality	28	35	0	15	11	0	0	89
Ad-present hatchery mortality	1	1	1	5	1	0	0	9
Natural-origin mortality ²	2	2	2	6	2	0	0	14
Total steelhead mortality	31	38	3	26	14	0	0	112

¹ Based on an average of 58.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Mainstem Columbia River (Rocky Reach Dam to Wells Dam)

An estimated 2,652 anglers fished 10,167 hours and caught a total of 555 steelhead, of which 171 were adipose-absent, 248 were adipose present hatchery, and 136 were natural origin steelhead (Table 5).

Table 5. Estimated summary of the 2010-2011 UCR steelhead fishery in the Columbia River between Rocky Reach and Wells Dams

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	976	2,143	1,126	2,499	1,148	873	1,402	10,167
Hours/angler	4.3	3.2	3.6	3.9	3.8	4.0	5.1	3.8
Total Anglers	228	670	315	644	302	218	275	2,652
Total steelhead caught	17	103	83	153	46	31	122	555
Ad-absent hatchery retained	7	35	20	41	16	19	33	171
Ad-absent hatchery released	0	0	0	0	0	0	0	0
Total ad-present released	10	68	63	112	30	12	89	384
Ad-present hatchery released	6	44	41	72	19	8	58	248
Natural-origin released ¹	4	24	22	40	11	4	31	136
Ad-absent hatchery mortality	7	35	20	41	16	19	33	171
Ad-present hatchery mortality	0	2	2	4	1	0	3	12
Natural-origin mortality ²	0	1	1	2	1	0	2	7
Total steelhead mortality	7	38	23	47	18	19	38	190

¹ Based on an average of 35.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Mainstem Columbia River (Wells Dam to Chief Joseph Dam)

An estimated 4,350 anglers fished 19,265 hours and caught a total of 2,172 steelhead, of which 1,096 were adipose absent, 696 were adipose present hatchery, and 380 were natural origin (Table 6).

Table 6. Estimated summary of the 2010-2011 UCR steelhead fishery in the Columbia River between Wells and Chief Joseph Dams

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	3,410	6,464	2,864	2,514	1,954	1,391	668	19,265
Hours/angler	3.5	4.5	5.1	4.3	5.2	4.6	5.8	4.4
Total Anglers	974	1,436	562	585	376	302	115	4,350
Total steelhead caught	164	650	466	259	296	209	128	2,172
Ad-absent hatchery retained	102	335	272	149	99	96	43	1,096
Ad-absent hatchery released	0	0	0	0	0	0	0	0
Total ad-present released	62	315	194	110	197	113	85	1,076
Ad-present hatchery released	40	204	126	71	127	73	55	696
Natural-origin released ¹	22	111	68	39	70	40	30	380
Ad-absent hatchery mortality	102	335	272	149	99	96	43	1,096
Ad-present hatchery mortality	2	10	6	4	6	4	3	35
Natural-origin mortality ²	1	6	3	2	3	2	2	19
Total steelhead mortality	105	351	281	155	108	102	48	1,150

¹ Based on an average of 35.3% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Wenatchee River

An estimated 2,095 anglers fished 5,758 hours and caught a total of 484 steelhead, of which 97 were adipose absent, 161 were adipose present hatchery, and 226 were natural origin (Table 7).

Table 7. Estimated summary of the 2010-2011 UCR steelhead fishery in the Wenatchee River

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	1,480	1,464	713	369	296	576	860	5,758
Hours/angler	3.3	2.9	2.6	2.4	2.4	2.4	2.5	2.7
Total Anglers	453	507	274	154	123	240	344	2,095
Total steelhead caught	64	87	54	40	30	89	120	484
Ad-absent hatchery retained	19	16	9	9	3	20	21	97
Ad-absent hatchery released	0	0	0	0	0	0	0	0
Total ad-present released	45	71	45	31	27	69	99	387
Ad-present hatchery released	13	28	20	14	12	30	44	161
Natural-origin released ¹	32	43	25	17	15	39	55	226
Ad-absent hatchery mortality	19	16	9	9	3	20	21	97
Ad-present hatchery mortality	1	1	1	1	1	2	2	9
Natural-origin mortality ²	2	2	1	1	1	2	3	12
Total steelhead mortality	22	19	11	11	5	24	26	118

¹ Based on an average of 58.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Entiat River

An estimated 611 anglers fished 1,840 hours and caught a total of 224 steelhead, of which 39 were adipose absent, 119 were adipose present hatchery, and 66 were natural origin (Table 8).

Table 8. Estimated summary of the 2010-2011 UCR steelhead fishery in the Entiat River

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	215	716	397	68	118	160	166	1,840
Hours/angler	2.6	3.0	3.4	2.6	3.0	3.1	2.8	3.0
Total Anglers	82	236	117	26	39	52	59	611
Total steelhead caught	12	94	61	3	15	24	15	224
Ad-absent hatchery retained	5	16	14	0	4	0	0	39
Ad-absent hatchery released	0	0	0	0	0	0	0	0
Total ad-present released	7	78	47	3	11	24	15	185
Ad-present hatchery released	4	50	30	2	7	16	10	119
Natural-origin released ¹	3	28	17	1	4	8	5	66
Ad-absent hatchery mortality	5	16	14	0	4	0	0	39
Ad-present hatchery mortality	0	3	2	0	0	1	0	6
Natural-origin mortality ²	0	1	1	0	0	0	0	2
Total steelhead mortality	5	20	17	0	4	1	0	47

¹ Based on an average of 35.7% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Methow River

An estimated 9,125 anglers fished 41,592 hours and caught a total of 5,880 steelhead, of which 2,857 were adipose absent, 1,953 were adipose present hatchery, and 1,070 were natural origin (Table 9).

Table 9. Estimated summary of the 2010-2011 UCR steelhead fishery in the Methow River

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	9,063	15,340	5,711	824	1,601	2,160	6,893	41,592
Hours/angler	4.4	4.4	4.9	3.8	4.5	4.2	5.2	4.6
Total Anglers	2,060	3,486	1,166	217	356	514	1,326	9,125
Total steelhead caught	1,140	1,976	519	142	194	279	1,630	5,880
Ad-absent hatchery retained	769	1,142	219	62	59	111	451	2,813
Ad-absent hatchery released	0	29	0	0	0	4	11	44
Total ad-present released	371	805	300	80	135	164	1,168	3,023
Ad-present hatchery released	237	521	194	52	87	106	756	1,953
Natural-origin released ¹	134	284	106	28	48	58	412	1,070
Ad-absent hatchery mortality	769	1,143	219	62	59	111	452	2,815
Ad-present hatchery mortality	12	26	10	3	4	5	38	98
Natural-origin mortality ²	7	14	5	1	2	3	21	53
Total steelhead mortality	788	1,183	234	66	65	119	511	2,966

¹ Based on an average of 35.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Okanogan River

An estimated 2,583 anglers fished 6,818 hours and caught a total of 1,301 steelhead, of which 602 were adipose absent, 452 were adipose present hatchery, and 247 were natural origin (Table 10).

Table 10. Estimated summary of the 2010-2011 UCR steelhead fishery in the Okanogan River

	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	2,975	972	0	60	206	2,605	6,818
Hours/angler 2/	3.0	3.9	3.2	1.0	2.1	2.2	2.6
Total Anglers	992	249	0	60	98	1,184	2,583
Total steelhead caught	587	104	0	0	107	503	1,301
Ad-absent hatchery retained	229	37	0	0	57	279	602
Ad-absent hatchery released	0	0	0	0	0	0	0
Total ad-present released	358	67	0	0	50	224	699
Ad-present hatchery released	232	43	0	0	32	145	452
Natural-origin released ¹	126	24	0	0	18	79	247
Ad-absent hatchery mortality	229	37	0	0	57	279	602
Ad-present hatchery mortality	12	2	0	0	2	7	23
Natural-origin mortality ²	6	1	0	0	1	4	12
Total steelhead mortality	247	40	0	0	60	290	637

¹ Based on an average of 35.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Similkameen River

An estimated 892 anglers fished 2,104 hours and caught a total of 455 steelhead , of which 268 were ad-absent, 121 were ad-present hatchery, and 66 were natural origin (Table 11).

Table 11. Estimated summary of the 2009-2010 UCR steelhead fishery, Similkameen River.

	Nov	Dec	Jan	Feb	Mar	Total
Total Effort hours	0	98	151	380	1,475	2,104
Hours/angler	3.2	3.2	1.5	3.2	2.3	2.4
Total Anglers	0	31	101	119	641	892
Total steelhead caught	0	0	13	28	414	455
Ad-absent hatchery retained	0	0	13	28	227	268
Ad-absent hatchery released	0	0	0	0	0	0
Total ad-present released	0	0	0	0	187	187
Ad-present hatchery released	0	0	0	0	121	121
Natural-origin released ¹	0	0	0	0	66	66
Ad-absent hatchery mortality	0	0	13	28	227	268
Ad-present hatchery mortality	0	0	0	0	6	6
Natural-origin mortality ²	0	0	0	0	3	3
Total steelhead mortality	0	0	13	28	236	277

¹ Based on an average of 35.4% natural-origin within the adipose-present population

² Calculated using 5% catch and release hooking mortality on natural origin fish

Fishery Impacts to Natural Origin Steelhead

Overall impacts of the upper Columbia River steelhead fishery on natural origin steelhead was estimated at 136 wild fish based on a 5% hooking mortality. This represents 64.2 % of the allowable natural origin impacts (212) estimated available during the October 2010 in-season forecast (Table 3). Natural origin impacts are detailed below for the specific fishery areas.

Below Priest Rapids (old Hanford town site upstream to Priest Rapids Dam)

Fishery impacts to the UCR natural origin steelhead population above Priest Rapids Dam may have occurred as a result of steelhead fisheries below Priest Rapids Dam. Harvest, encounter information, and hatchery fish reduction for the area between old Hanford town site and Priest Rapids Dam will be detailed in a separate report, but the natural origin impacts from that area were assigned to the above Priest Rapids fishery. The 11 natural origin steelhead impacts from below Priest Rapids were assigned to the Wenatchee River population.

Wenatchee River (Includes Columbia River from Priest Rapids Dam to Wells Dam, Entiat River, and below Priest Rapids)

Fishery impacts to the UCR steelhead population may have occurred as a result of steelhead fisheries in the Wenatchee River, Entiat River and in the main stem Columbia River between old Hanford town site and Wells Dam. Natural origin steelhead assigned to the Wenatchee River population were estimated using pit tag data and run estimates from Priest Rapids and Tumwater Dam sampling, and included natural origin fish that were located between Priest Rapids and Wells Dam, including the Entiat River. Based on that analysis, an estimated 5,395 natural origin steelhead were assigned to the below Wells Dam population. Anglers caught and released 911 natural origin steelhead (Tables 4, 5, 7, 8, plus 220 below PRD), representing an encounter rate on natural origin fish of 16.9%. Using a 5% hook and release mortality on natural origin steelhead, the fishery impacts were 46 natural origin steelhead, representing 0.9% of the estimated natural origin steelhead assigned to the below Wells Dam population and is consistent with the Tier 1 fishery criteria of limiting natural origin steelhead mortality to 2% or less.

Methow River, including Columbia River (Wells Dam to Chief Joseph Dam)

Fishery impacts to the UCR steelhead population may have occurred as a result of steelhead fisheries in the Methow River and in the main stem Columbia River between Wells Dam and Chief Joseph Dam. One hundred percent of the natural origin Methow River steelhead and 79% of the natural origin main stem Columbia River steelhead caught and released during the fishery were used to determine natural-origin steelhead encounter rates (English 2001). Collectively, the two fishery areas encountered 1,370 (1,070 Methow and 300 main stem Columbia) of the estimated 1,773 natural-origin Methow River steelhead (Tables 6 and 9), representing an encounter rate of 77.3%. Assuming 5% post release mortality, the Methow River natural-origin steelhead impacts were 70 fish, including one natural origin fish found dead along the Methow River. This represents a 3.9% mortality of the estimated natural-origin steelhead returning to the Methow River and is consistent with the Tier 2 fishery criteria of limiting natural origin steelhead mortality to 4% or less.

Okanogan/Similkameen Rivers, including Columbia River (Wells-Chief Joseph)

Fishery impacts to the UCR steelhead population may have occurred as a result of steelhead fisheries in the Okanogan and Similkameen Rivers, including the main stem Columbia River between Wells Dam and Chief Joseph Dam. One hundred percent of the natural origin Okanogan and Similkameen River steelhead and 21% of the natural-origin main stem Columbia River steelhead caught and released during the fishery were used to determine natural-origin steelhead encounter rates (English 2001). Collectively, the three fishery areas encountered 393 (247 Okanogan, 66 Similkameen, and 80 main stem Columbia) of the estimated 474 natural origin Okanogan and Similkameen River steelhead (Tables 6, 10, and 11), representing an encounter rate of 82.9%. Assuming 5% post release mortality, the Okanogan/Similkameen River natural origin steelhead impacts were 20 fish, which represent a 4.2% mortality of the estimated natural origin steelhead returning to the Okanogan and Similkameen Rivers and is consistent with the Tier 2 fishery criteria of limiting natural origin steelhead mortality to 7% or less.

Hatchery Origin Removal Due to Fishery Activities

Methow, Okanogan, and Similkameen

In the steelhead fishery above Wells Dam, which includes the main stem Columbia, Methow, Okanogan, and Similkameen Rivers, and estimated 4,779 adipose fin clipped steelhead were removed. This represents a 64.5% reduction of the estimated 7,411 adipose fin clipped hatchery steelhead, which were observed passing Wells Dam during the 2010-2011 season (Fish Passage Center).

Wenatchee

In the steelhead fishery from Priest Rapids to Wells Dam, which includes the main stem Columbia, Wenatchee, and Entiat Rivers, an estimated 396 adipose fin clipped steelhead were removed. This represents a 9.3% reduction of the estimated 4,263 adipose fin clipped steelhead assigned to the main stem Columbia, Wenatchee, and Entiat populations (Priest Rapids Data).

FISHERY ENFORCEMENT

Enforcement of regulations protecting ESA-listed UCR steelhead occurred throughout the steelhead fishery areas. Enforcement activities reported 872 enforcement hours, 1,124 angler contacts, and 185 reported violations (Table 12). Arrests accounted for 7% of all anglers contacted. There were no violations reported for illegal retention of unmarked steelhead.

Table 12. Summary of WDFW enforcement for the 2010-2011 UCR steelhead fishery.

Month	Enforcement effort		Citation type		Arrest type		
	Hours	Contacts	Arrests	Warnings	Gear ¹	License ²	Other ³
Sept/Oct	171	370	41	28	14	25	2
November	168	193	6	26	2	4	0
December	134	161	0	9	0	0	0
January	180	149	12	22	4	7	1
February	59	61	5	1	2	3	0
March	160	190	16	19	5	10	1
Total	872	1,124	80	105	27	49	4

¹ Fishing with bait, 2-pole, barbed hooks, removing steelhead from water

² Failure to record SH, no catch card, no salmon/steelhead endorsement, no license

³ Drug violations

REFERENCES

- English, K.K., C. Sliwiaski, B.L. Nass, and J.R. Stevenson. 2001. Assessment of adult steelhead migration through the Mid-Columbia River using radio-telemetry techniques, 1999-2000. Report prepared by LGL Limited for Public Utility District No. 1 of Douglas County.
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- Hahn P., Zeylmaker S. and S. Bonar. 1993. Creel Information from Sport Fisheries, WDFW Methods Manual. Washington Department of Fish and Wildlife 600 Capitol Way North Olympia Washington 98501-1091.
- Malvestudo, S.P., W.D. Davies and W.L. Shelton. 1978. An evaluation of the roving creel survey with a non-uniform probability sampling. Transaction of the American Fisheries Society, 107: 255-262.
- NMFS (National Marine Fisheries Service). 2003. Section 10(a)(1)(A) permit for the takes of Endangered/Threatened species, Permit 1395. Available at <http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Sec-10-Hatchery-Current.cfm>

APPENDIX A1

Fishing Rule Change
WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
600 Capitol Way North, Olympia, Washington 98501-1091
Internet Address: <http://wdfw.wa.gov>

Upper Columbia and selected tributaries to open for Hatchery Steelhead Fishing.

ACTIONS: Open the Columbia River from Priest Rapids Dam to Chief Joseph Dam, including the Wenatchee, Entiat, and Methow rivers, on September 8, 2010, the Okanogan River on October 1, 2010, and the Similkameen River on November 1, 2010 to fishing for adipose-fin clipped hatchery-origin steelhead until further notice.

SPECIES AFFECTED: Hatchery adipose fin clipped steelhead

- **Mandatory** retention of adipose fin clipped steelhead, daily limit four (4) hatchery steelhead, 20 inch minimum size.
- Selective gear rules are in effect for all steelhead fishery areas, except bait is allowed on mainstem Columbia River from Priest Rapids Dam to 400 feet below Chief Joseph Dam
- Night closure in effect for all steelhead fishery areas
- Wild Steelhead (adipose fin intact) must be released unharmed and cannot be removed from the water prior to release.
- On the mainstem Columbia River only: Floy tagged Rainbow Trout retention allowed.

EFFECTIVE DATES AND LOCATIONS:

- 1) The **mainstem Columbia River** from Priest Rapids Dam to 400 feet below Chief Joseph Dam; September 8, 2010 until further notice. Floy tagged rainbow trout, , may be retained. There is no limit or minimum size on floy tagged rainbow trout.
- 2) The **Wenatchee River** from the mouth to the Icicle River Road Bridge; September 8, 2010 until further notice.
- 3) The **Entiat River** upstream from the Alternate Highway 97 Bridge near the mouth of the Entiat River to 800 feet downstream of the Entiat National Fish Hatchery outfall; September 8, 2010 until further notice.

4) The **Methow River** from the mouth to the confluence with the Chewuch River in Winthrop; September 8, 2010 until further notice. ***Fishing from a floating device is prohibited from the second powerline crossing (about 1 mile upstream from the mouth) to the first Hwy 153 bridge (about 4 miles upstream from the mouth)***

5) The **Okanogan River** from the mouth to the Highway 97 Bridge in Oroville; October 1, 2010 until further notice.

6) The **Similkameen River**, from its mouth to 400 feet below Enloe Dam; November 1, 2010 until further notice.

OTHER ANGLER INFORMATION:

Anglers should be aware that fishing rules are subject to change and that rivers can close at any time due to impacts on natural origin steelhead

Release any steelhead with one or more holes (round, approximately ¼ inch diameter) punched in the caudal (tail) fin. These fish are part of a study and have been anesthetized; the FDA requires a 21 day ban on consumption of these fish.

Anglers are required to release all adipose present steelhead, which cannot be totally removed from the water prior to release.

Whitefish anglers are reminded that under selective gear rules, bait is prohibited.

Anglers are required to possess a **Columbia River Salmon/Steelhead Endorsement** as part of their valid fishing license. Check the fishing hotline at 360-902-2500 or the webpage at https://fortress.wa.gov/dfw/erules/efishrules/rules_all_freshwater.j

Reason for action: The fishery will reduce the number of excess hatchery-origin steelhead and consequently increase the proportion of natural-origin steelhead on the spawning grounds. Higher proportions of naturally produced spawners are expected to improve genetic integrity and stock recruitment of upper Columbia River steelhead through perpetuation of steelhead stocks with the greatest natural-origin lineage.

Information contacts: Jeff Korth, Region 2 Fish Program Manager, (509) 754-4624, Bob Jateff, District 6 Fish Biologist, (509) 997-0316, Art Viola, District 7 Fish Biologist, (509) 665-3337.

Fishers must have a current Washington fishing license, appropriate to the fishery. Check the [WDFW "Fishing in Washington" rules pamphlet](#) for details on fishing seasons and regulations. Fishing rules are subject to change. Check the WDFW Fishing hotline for the latest rule information at (360) 902-2500, press 2 for recreational rules. For the Shellfish Rule Change hotline call (360)796-3215 or toll free 1-866-880-5431.

Fishing Rule Change

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

600 Capitol Way North, Olympia, Washington 98501-1091

Internet Address: wdfw.wa.gov

February 5, 2011

Steelhead fishing rules change in the Upper Columbia

Actions:

- Allow the retention of hatchery-origin adipose fin-clipped steelhead with circular (hole) punches in the caudal (tail) fin
- Close sections of the Okanogan River around the mouths of Omak and Bonaparte creeks as of March 15, 2010.

Species affected: Hatchery origin adipose fin-clipped steelhead.

Hatchery-origin steelhead retention rule change: Anglers may retain hatchery-origin adipose fin-clipped steelhead with circular (hole) punches in the caudal (tail) fin as of Feb 5, 2011 only in areas of the Columbia River and tributaries that remain open to steelhead fishing.

Fishing area locations and effective closure dates:

- **The Okanogan River from the mouth upstream to Hwy 97 Bridge in Oroville.** Open through March 31, 2010. Night closure and selective gear rules apply, except motorized vessels allowed. EXCEPTION: CLOSED WATERS effective March 15, 2010 from the first powerline crossing downstream of the Hwy 155 Bridge in Omak (Coulee Dam Credit Union Building) to the mouth of Omak Creek and from the Tonasket Bridge (4th Street) downstream to the Tonasket Lagoons Park boat launch.

Location and regulations of areas previously opened to hatchery-origin steelhead harvest:

- **The mainstem Columbia River from Priest Rapids Dam to 400 feet below Chief Joseph Dam.** Open through March 31, 2010. Night closure and selective gear rules apply, except motorized vessels and bait is allowed. Floy-tagged rainbow trout may be retained with no daily limit and no minimum size.

- **The Entiat River upstream from the Alternate Highway 97 Bridge near the mouth of the Entiat River, approximately 6 miles to 800 feet downstream of the Entiat National Fish Hatchery outfall.** Open through March 31, 2010. Night closure and selective gear rules apply, except motorized vessels allowed.
- **The Similkameen River, from its mouth to 400 feet below Enloe Dam.** Open through March 31, 2010. Night closure and selective gear rules apply, except fishing from a motorized vessel is allowed.
- **The Methow River from the Hwy. 97 Bridge in Pateros upstream to the confluence with the Chewuch River in Winthrop, WA.** Open through March 31, 2010. Night closure and selective gear rules apply, except motorized vessels allowed. Fishing from a floating device is prohibited from the second power line crossing (approximately 1 mile upstream from the mouth) to the first Highway 153 Bridge (approximately 4 miles upstream from the mouth).

Reason for action: Sections of the Okanogan River around the mouths of Omak and Tonasket creeks are closed to protect natural origin steelhead staging prior to spawning in those tributaries.

Anglers may retain hatchery adipose fin-clipped steelhead with circular (hole) punches in the caudal (tail) fin in areas of the Columbia River that remain open to steelhead fishing. Circular (hole) punches were put in the caudal (tail) fin for sampling and monitoring purposes at Priest Rapids and Wells Dams, these fish are no longer needed for monitoring and can now be legally retained.

Other information: Anglers are required to harvest hatchery origin steelhead with an adipose fin-clip and a healed scar in the location of the missing fin. There is a four (4) fish mandatory daily retention limit on adipose fin-clipped steelhead, 20-inch minimum size. All steelhead with an intact adipose fin must be immediately released unharmed and cannot be removed from the water. All other fisheries must follow selective gear rules, except that bait is also allowed on the mainstem Columbia River from Priest Rapids Dam to 400 feet below Chief Joseph Dam.

Certain fishery areas can close at any time before March 31st, so anglers are advised to check for any emergency closures on the WDFW website at (<https://fortress.wa.gov/dfw/erules/efishrules/>)

Information contacts: Jeff Korth, Region 2 Fish Program Manager, (509) 754-4624, Bob Jateff, District 6 Fish Biologist, (509) 997-0316

Fishers must have a current Washington fishing license. Check the current WDFW "Fishing in Washington" rules pamphlet or the Fishing section of the WDFW webpage at wdfw.wa.gov for details on fishing seasons and regulations. Fishing regulations are subject to change. Check the WDFW Fishing hotline for the latest rule information at (360) 902-2500; press 2 for recreational rules; call the Shellfish Rule Change hotline, (360) 796-3215, or toll free 1 (866) 880-5431.