FISHERIES MANAGEMENT AND EVALUATION PLAN

Snake River Steelhead ESU

Snake, Grande Ronde and Imnaha Rivers
Warmwater and Sturgeon Recreational Fisheries

Prepared by
Oregon Department of Fish and Wildlife

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Title.

Fishery Management and Evaluation Plan

Snake River ESU Summer Steelhead

Warmwater and sturgeon recreational fisheries

Snake, Grande Ronde and Imnaha rivers

Responsible Management Agency.

Agency:	**Oregon Department of Fish and Wildlife**
Name of Primary Contact:	**Brad Smith**
Address:	**65495 Alder Slope Road**
City, State, Zip Code:	**Enterprise, OR 97828**
Telephone Number:	**(541) 426 - 3279**
Fax Number:	**(541) 426 - 3055**
Email Address:	gofish@oregontrail.net

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SECTION 1. FISHERIES MANAGEMENT

1.1) General objectives of the FMEP.

Objectives of this FMEP are to, a) provide catch and release recreational fishing opportunity for white sturgeon in the Oregon portion of the Snake River and b) provide recreational fishing opportunity and harvest on introduced warmwater species in the Oregon portion of the Snake River, the Imnaha River and the Grande Ronde River and tributaries in a manner that does not jeopardize the survival and recovery of listed Snake River ESU summer steelhead.

1.1.1) List of the "Performance Indicators" for the management objectives.

a) Maintenance of the opportunity to participate in warmwater and sturgeon fishing in these waters as described in current Oregon Sport Fishing Regulations.

b) Incidental mortality to listed Snake River summer steelhead created by these fisheries does not jeopardize their survival and recovery

1.1.2) Description of the relationship and consistency of harvest management with artificial propagation programs.

N/A There are no hatchery releases of warmwater game fish or sturgeon in streams in this ESU.

1.1.3) General description of the relationship between the FMEP objectives and Federal tribal trust obligations.

Nez Perce Tribe has interest in and is pursuing management and research activities regarding Snake River white sturgeon. Recent studies suggest that the ongoing catch and release fishery for sturgeon in the Snake River is allowing the population to increase in number. The fisheries outlined in this FMEP will not affect viability or recovery of listed Snake River summer steelhead. As a result, these fisheries will not affect the Tribes' ability to harvest listed steelhead.

1.2) Fishery management area(s).

The Snake River and its tributaries in Oregon below Hells Canyon Dam

1.2.1) Description of the geographic boundaries of the management area of this FMEP.

a) The Snake River white sturgeon fishery occurs between the Oregon-Washington border at RM 176 and Hells Canyon Dam at RM 248.

b) The warmwater fishery occurs in the above described reach of the Snake River, as well as, within the lower 10 miles of the Imnaha River, the lower 20 miles of Joseph Creek in Oregon, the lower 5 miles of the Wenaha River, the lower 20 miles of Catherine Creek and between the Oregon-Washington border at RM 38 and RM 173 above the town of La Grande on the Grande Ronde River (Figure 1).

1.2.2) Description of the time periods in which fisheries occur within the management area.

Snake River is open to warmwater and catch and release sturgeon fishing the entire year. Open season for warmwater fishing in Grande Ronde and Imnaha basins streams includes the entire year except the period between the end of steelhead season (April 15) and the beginning of trout season (fourth Saturday in May). However, angling for warmwater species is generally limited by water temperature and flow conditions to April through October.

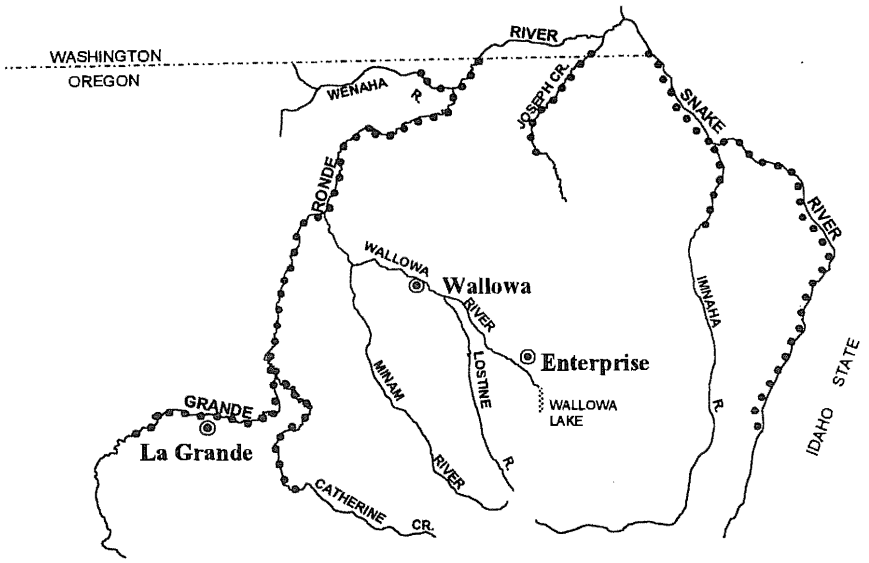

Figure 1. Northeast Oregon streams, indicating fisheries areas included under this FMEP.

1.3) Listed salmon and steelhead affected within the Fishery Management Area specified in section 1.2.

Snake River summer steelhead populations in:

1. Lower Grande Ronde River
   - Wenaha River
   - Lower Grande Ronde River tributaries in Oregon
2. Joseph Creek and tributaries
3. Wallowa River
   - Wallowa River tributaries from North
   - Wallowa River tributaries from South (except Minam)
   - Prairie Creek
   - Minam River and tributaries
4. Upper Grande Ronde River
   - Lookingglass
   - Middle Grande Ronde (Grande Ronde tributaries between Wallowa and the upper end of the Grande Ronde Valley except Lookingglass, Catherine and Willow creeks)
   - Willow Creek
   - Catherine Creek

- Upper Mainstem and tributaries above the Grande Ronde Valley up to and including Meadow Creek
- South Upper Mainstem (basin above Meadow Creek)

5. Imnaha River and tributaries
   - Zumwalt Area (West-side tributaries below Big Sheep Creek)
   - Lower Imnaha (East-side tributaries below Big Sheep Creek)
   - Big Sheep Creek and tributaries
   - Upper Imnaha (basin above Big Sheep Creek)
6. Snake River tributaries in Oregon (excluding the Imnaha River)
7. Snake River tributaries in Idaho

This identified population structure in Oregon streams represents a conservative approach to population delineation due to a lack of data and our desire to minimize risk of population impacts resulting from management decisions. The identified structure is based upon basin size and differences in hydrology, elevation, geology, temperature regime, aspect and spawning time. For the purposes of this plan populations are grouped into management units as indicated to accommodate inference from existing data analysis.

1.3.1) Description of "critical" and "viable" thresholds for each population (or management unit) consistent with the concepts in the technical document "Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units."

NMFS defines population performance in terms of abundance, productivity, spatial structure, and diversity and provides guidelines for each (McElhany et al. 2000). NMFS identifies abundance guidelines for critical and viable population thresholds. Critical thresholds are those below which populations are at relatively high risk of extinction. Critical population size guidelines are reached if a population is low enough to be subject to risks from: 1) depensatory processes, 2) genetic effects of inbreeding depression or fixation of deleterious mutations, 3) demographic stochasticity, or 4) uncertainty in status evaluations. If a population meets one critical threshold, it would be considered to be at a critically low level. Viability thresholds are those above which populations have negligible risk of extinction due to local factors. Viable population size guidelines are reached when a population is large enough to: 1) survive normal environmental variation, 2) allow compensatory processes to provide resilience to perturbation, 3) maintain genetic diversity, 4) provide important ecological functions, and 5) not risk effects of uncertainty in status evaluations. A population must meet all viability population guidelines to be considered viable.

Productivity or population growth rate guidelines are reached when a population's productivity is such that: 1) abundance can be maintained above the viable level, 2) viability is independent of hatchery subsidy, 3) viability is maintained even during poor ocean conditions, 4) declines in abundance are not sustained, 5) life history traits are not in flux, and 6) conclusions are independent of uncertainty in parameter estimates. Spatial structure guidelines are reached

when: 1) number of habitat patches is stable or increasing, 2) stray rates are stable, 3) marginally suitable habitat patches are preserved, 4) refuge source populations are preserved, and 5) uncertainty is taken into account. Diversity guidelines are reached when: 1) variation in life history, morphological, and genetic traits is maintained, 2) natural dispersal processes are maintained, 3) ecological variation is maintained, and 4) effects of uncertainty are considered.

This fishery management plan focuses primarily on abundance and productivity which are the two key performance features most directly affected by fishery impacts of the scale we propose. Spatial structure is generally a function of habitat size and distribution. Proposed fisheries do not affect habitat. The small fishery impact rates proposed also will not reduce population sizes to levels where spatial effects are exacerbated. Diversity concerns for Snake River ESU summer steelhead are primarily related to the effects of natural spawning by hatchery fish. The small, proposed fishery impact rates on wild fish are not expected to exert sufficient selection pressure on any single characteristic to affect diversity. See section 2.1.2 for a more detailed discussion of why the harvest regime is not likely to result in changes to biological characteristics of the affected ESUs.

The NMFS provides limited guidance on fish numbers corresponding to critical and viability thresholds. They discuss hypothetical risks related to genetic processes effective at annual spawning population ranging from 50 to several thousand individuals. (McElhany et al. 2000).

The viable threshold for summer steelhead populations in the Snake River ESU was set at 20% of the full seeding spawner estimate based upon the analysis presented by Chilcote (2001). As stated in this report: "*The logic for selecting 20% of 1/B as the threshold was based upon the lack of confidence in predicting the response of populations at escapement levels less than this level. The primary reason for this uncertainty was that escapements below these levels have rarely been observed in the data sets. Averaged across all populations and years, only 6% of the spawner escapement data points were less than 0.20/B. Therefore, very little information was available to investigate how these populations actually performed at low escapement levels. In light of these shortcomings, it seemed logical that this threshold of uncertainty would suffice as the viable threshold.*"

The method to determine the critical threshold was also based upon the approach described by Chilcote (2001) as follows: "*The critical abundance level for each population was determined directly from the PVA model. In the context of PVA models, Mace and Lande (1991) proposed the following standard for endangerment: a 20% probability of extinction over a period of 10 generations. For the purposes of this report, their classification of "endangerment" was assumed to be synonymous with "critical". Adopting this standard, the critical abundance threshold was defined as the number of spawners, that if left alone to naturally reproduce for 50 years (approximately 10 generations) would result in the extinction of the population more than 20% of the time. This critical abundance was estimated for each population by seeding each PVA model run with fewer and fewer initial spawners until a 20% extinction probability was achieved.*

Critical and viable thresholds for populations within the FMEP area were based upon PVA methodologies and results reported by Chilcote (2001). The critical thresholds ranged from 0.11to 0.37 spawners per mile. The viable thresholds ranged from 0.45 to 1.20 spawners per mile.

1.3.2) Description of the current status of each population (or management unit) relative to its "Viable Salmonid Population thresholds" described above. Include abundance and/or escapement estimates for as many years as possible.

Population viability analysis is not available for all steelhead Management Units within the FMEP area. However, analysis of spawning survey data from a number of Grande Ronde basin streams and one Imnaha basin stream suggests steelhead populations within these basins are viable and resilient. We utilized results of analysis completed to infer population status in adjacent management units. (Table 1).

General tends in observed steelhead spawner abundance within the FMEP area can be represented as reaching a low in the late 1970s, gradually increasing to a high in the mid-1980s, and declining to another low in the late 1990s before recovering slightly (Table 2). Average abundance over the last 6 years for all FMEP steelhead populations examined exceeded the viable threshold identified (Table 3).

1.4) Harvest Regime

1.4.1) Provide escapement objectives and/or maximum exploitation rates for each population (or management unit) based on its status.

Population Viability Analysis (PVA) analysis of the four steelhead populations covered by this FMEP suggest that all are capable of sustaining additional adult equivalent mortality without resulting in increased probability of high conservation risk (Chilcote 2001). However, the analysis accounted for ongoing productivity losses associated with Snake and Columbia river dams, harvest and other factors affecting adult and juvenile survival existing during the analysis period including any mortality associated with fisheries covered by this FMEP. This suggests that not only are these steelhead populations viable but that they are capable of sustaining current mortality plus a modest increase in adult equivalent mortality without affecting viability. As a result, a maximum additional harvest rate (adult equivalent mortality rate) for each population within the FMEP area has been conservatively set at 20% to avoid risk associated with data uncertainty and error. This harvest rate would include mortality from any source, affecting any life stage above what existed during the previous approximately 10 years.

We expect no increase in mortality associated these warmwater and sturgeon fisheries. Difficulty of access in much of the FMEP area and the fact that better warmwater fisheries exist within the region will continue to limit fishery effort.

1.4.2) Description of how the fisheries will be managed to conserve the weakest population or management unit.

Although we have little direct data to derive estimates of incidental mortality of steelhead associated with sturgeon and warmwater fisheries all indications are that the impact is very low. Furthermore, based upon preliminary indications from Population Viability Analysis even the weakest population examined is productive and capable of sustaining current sources of mortality (Table 1). As a result, we plan to operate sturgeon and warmwater fisheries to provide angler opportunity consistent with historic fisheries. These fisheries include a catch and release sturgeon fishery open year around in the Snake River and a warmwater fishery that is managed with a 5 fish per day with 3 over 15 inches bass bag limit, no bag limits on other warmwater species, open year around on the Snake River and open concurrent with trout and steelhead seasons elsewhere (closed April 15 through the fourth Saturday in May).

1.4.3) Demonstrate that the harvest regime is consistent with the conservation and recovery of commingled natural-origin populations in areas where artificially propagated fish predominate.

N/A

1.5) Annual Implementation of the Fisheries

The Oregon Fish and Wildlife Commission (Commission) adopts angling regulations every year with and extensive public involvement process every four years. This process begins about one year in advance of when specific regulations are actually adopted. Current regulations require release of wild (unmarked) steelhead in the Snake, Grande Ronde and Imnaha rivers and trout and warmwater fisheries are designed to protect juvenile steelhead.

There is also a process in place to implement regulations on a much shorter time schedule than every four years that addresses emergency conditions. These emergency regulations can be adopted by the Commission within 2 weeks if a Commission meeting is scheduled near the same date. The Commission has also delegated to the Director of ODFW the authority to adopt emergency regulations. If the Director adopts emergency regulations, they can be implemented within a matter of days from the time they are submitted.

These proposed fisheries have little potential to create additional mortality to listed summer steelhead adults and juveniles. Determination of warmwater fishery impacts on forecasted runs would be meaningless in the context of other factors affecting adult survival including dam associated and tribal net harvest mortality.

SECTION 2. EFFECTS ON ESA-LISTED SALMONIDS

2.1) Description of the biologically based rationale demonstrating that the fisheries management strategies will not appreciably reduce the likelihood of survival and recovery of the affected ESU(s) in the wild.

Adult steelhead are present in the sturgeon and warmwater fishery area in the months of September through May. As a result adults are subject to the potential of incidental catch by anglers in September, October, April and May. Juvenile steelhead exist in most stream reaches within the fishery area throughout the year.

Information derived from random sturgeon angler interviews conducted by Oregon State Police suggests no incidental catch of steelhead adults or juveniles in the Snake River sturgeon fishery in Oregon. The nature of the sturgeon in terms of gear size, bait and angling location also suggests little opportunity for incidental catch of steelhead. Based on this information we set the incidental catch of steelhead by sturgeon anglers at zero.

Warmwater anglers, especially those fishing for smallmouth bass and channel catfish may incidentally catch juvenile and adult steelhead. However, a number of fishery features interact to minimize incidental steelhead catch by warmwater anglers. First, warmwater anglers tend to fish stream areas unlikely to contain juvenile and adult steelhead due to habitat preference of the target species. Most warmwater angler effort occurs during the summer months when summer steelhead juveniles inhabit cooler tributary streams and adult steelhead have not yet arrived. Secondly, while some anglers are opportunistic and fish with gear that may take smallmouth bass, trout and juvenile and adult steelhead, these anglers tend to be less knowledgeable and generally less successful than anglers targeting one species or another. An additional mitigating factor is that as adult steelhead migrate into the fishery area each fall many anglers previously fishing for warmwater species within the FMEP shift their effort to target hatchery steelhead.

No fisheries specific effort or incidental catch rate data is available for the fisheries described in this FMEP. However, based upon general fisheries characteristics, angler use observed during the course of other field work and anecdotal effort and catch information, local biologists estimate a maximum of 10 adult steelhead and 1000 juvenile steelhead may be handled annually in the course of warmwater fisheries in the FMEP area. If we apply the fairly liberal mortality figure of 10% used in fisheries evaluation in the "Biological Assessment of Impacts of Proposed 1999 Fisheries in the Snake River Basin On Snake River Salmon and Steelhead Listed Under the Endangered Species Act" prepared by the *U.S. v. Oregon* Technical Advisory Committee and dated April 21, 1999, estimates of maximum mortality for these fisheries include 1 adult and 100 juvenile steelhead annually.

As suggested above, the fisheries in question produce little mortality for listed steelhead. Estimates of annual adult steelhead spawner abundance for smaller population units identified within this FMEP area are on the order of 100 adults annually. Maximum FMEP fishery related

mortality estimate of 1 adult and 100 juveniles would be equivalent to a mortality rate of 1 to 2%, if the entire mortality ascribed to the fishery occurred within a single smaller population unit. This is extremely unlikely. Actual mortality is likely distributed across population units and varies in its influence from year to year. Even the maximum mortality rate on the order of 1 or 2 % represented by an absolute worst-case analysis of fisheries under this FMEP pose no threat to survival or recovery of individual listed steelhead populations based on PVA.

Recent analyses conducted by ODFW suggest that none of the four population units within the FMEP examined met the criteria for an at-risk classification of threatened or endangered (Chilcote 2001). The specific criteria for each of these classifications were as follows: Threatened = probability of extinction less than 0.05 in 100 years under current fishing mortality rates; and Endangered = probability of extinction greater than 0.20 in 50 years under current fishing mortality rates. The analysis accounted for existing mortality factors including any incidental mortality associated with warmwater fisheries as existing features affecting population productivity. According to the analysis all ongoing mortality impacts, if held at the current level, are unlikely to cause risk of abundance being less than the viable threshold for populations examined. Further analysis suggests that populations examined exhibit enough inherent productivity to sustain some additional mortality.

2.1.1) Description of which fisheries affect each population (or management unit).

Generally, Snake River and Imnaha River warmwater anglers may handle Snake River and Imnaha River steelhead, as well as, steelhead originating from the Idaho side of the Snake River above the Oregon/Washington border. Warmwater anglers in the Grande Ronde basin may handle steelhead originating from any of the Grande Ronde basin's populations. Due to the nature of steelhead movement some exceptions may occur.

2.1.2) Assessment of how the harvest regime will not likely result in changes to the biological characteristics of the affected ESUs.

As suggested above the fisheries in question produce little mortality for listed steelhead. Estimates of annual adult steelhead spawner abundance for smaller population units identified within this FMEP area are on the order of 100 adults. Maximum FMEP fishery related mortality estimate of 1 adult and 100 juveniles would be equivalent to a mortality rate of 1 to 2%, if the entire mortality ascribed to fisheries the fisheries occurred within a single smaller population unit. This is extremely unlikely. Actual mortality is likely distributed across population units and varies in its influence from year to year. Based upon inference from the PVA, even the maximum expected mortality rate represented by this absolute worst case analysis of Fisheries under this FMEP pose no biological threat to listed steelhead populations or to the ESA as a whole.

Table 1. List of the natural fish populations, "Viable Salmonid Population" thresholds, and associated hatchery stocks included in this FMEP.

Management Units (see 1.3 for description of population structure within Management Units)	Critical Thresholds (Abundance in spawners/mile)	Viable Thresholds (Abundance in spawners/mile)	Associated hatchery stock(s)	Hatchery stock essential for recovery? (Y or N)
Snake River [1]	Abundance: 0.37	Abundance: 1.20 Productivity: replacement rate =1	Snake River stock summer steelhead	N
Lower Grande Ronde [2]	Abundance: 0.18	Abundance: 0.67 Productivity: replacement rate =1	Wallowa stock summer steelhead (#56)	N
Joseph Creek	Abundance: 0.18	Abundance: 0.67 Productivity: replacement rate =1		N
Wallowa River [3]	Abundance: 0.35	Abundance: 0.78 Productivity: replacement rate =1	Wallowa stock summer steelhead (#56)	N
Upper Grande Ronde (Middle Grande Ronde)	Abundance: 0.35	Abundance: 0.78 Productivity: replacement rate =1	Wallowa stock summer steelhead (#56)	N
Upper Grande Ronde (Upper Grande Ronde)	Abundance: 0.11	Abundance: 0.45 Productivity: replacement rate =1	Wallowa stock summer steelhead (#56)	N
Imnaha River	Abundance: 0.37	Abundance: 1.20 Productivity: replacement rate =1	Little Sheep summer steelhead (#29)	N

[1] Inference from adjacent Imnaha River management unit
[2] Inference from adjacent Joseph Creek management unit
[3] Inference from adjacent Upper Grande Ronde management unit

Table 2. Steelhead spawning survey data (spawners per mile) for some streams within the Grande Ronde Basin, 1988-2000. Blank cells indicate no survey (Data from Grande Ronde Watershed District files).

POP. UNIT	Prairie Cr.	S Wallowa	N Wallowa	Joseph Creek									M.Grande Ronde	U. Grande R.			S.Grande Ronde
Miles*	2	5	5	2.5	1	12	6	10	1	6	1	5	2.5	7	2	6	4
STREAM	Prairie Cr.	Wallowa R.	Whiskey Cr.	Butte Cr.	S. FK.Chesnimnus	Crow Cr.	Devils Run Cr.	Elk Cr.	McCarty Gu.	Peavine Cr.	Summit Cr.	Swamp Cr.	Phillips Cr	Meadow Cr.	McCoy Cr.	Five Points Cr.	Fly Cr.
Year																	
1988	23.0	2.7	22.3	0.5	24.3	8.7	23.4	12.2	0.0	22.7	67.5	8.4	2.7	7.9	3.4	2.5	13.8
1989	8.8	3.0	17.2	0.9	16.2	9.5	24.5	15.1	6.8	10.6	29.7	11.1	2.2	1.5	2.0	1.4	1.7
1990	14.9	3.2	11.8	2.2	5.4	10.4	5.6	10.7	1.4	11.9	12.2	14.0	2.7	2.9	2.0	2.5	1.0
1991	2.7	0.8	4.1	0.0	0.0	2.5	0.9	4.5	0.0	1.4	2.7	0.0					
1992	11.5	2.4	11.0	0.5	0.0	2.8	4.1	4.3	0.0	5.9	6.8	1.4	8.6	4.6	1.4	2.5	7.9
1993	9.5	0.0	3.7	0.5	2.7	5.1	15.3	12.2	0.0	5.6	9.5	14.9	2.2	1.7	4.7	1.4	1.4
1994	16.2	1.6	7.8	0.0	2.7	2.6	9.5	6.2	0.0	5.2	9.5	0.5	1.6	2.5	0.0	4.5	1.4
1995	5.4	1.4		0.0	5.4	0.5		1.8	0.0		1.4	2.2	2.7	1.7	2.0	2.7	1.7
1996	16.9	3.5	3.4	1.6	5.4	1.2	4.3	2.7	0.0	4.1	4.1	1.9	2.2	1.7	3.4	4.5	1.4
1997	17.6		4.6	4.9	6.8	2.5	4.1	3.9	0.0	2.7	4.1	1.9	1.1	3.7	6.8	5.2	2.3
1998	20.9		8.4	2.2		2.6		9.0	5.4	13.3		4.9	4.3	5.2	7.4	3.4	2.3
1999	31.1		5.7	5.4	8.1	4.1	10.8	4.7	0.0	3.6	8.1	8.1	2.2	1.4	0.7	3.6	
2000	37.1		6.8	2.2	13.5	2.5	5.9	5.9	1.4	6.1	17.6	9.2	1.1	0.8	0.0	4.1	2.7

* Miles surveyed varied over time in some survey units, value given represents most years.

Table 3. Previous 6 -year average steelhead spawner density (spawners per mile) for FMEP area population units examined.

Population	Sub-population	Observed Abundance	Viable Threshold	Critical Threshold
Joseph		4.6	0.7	0.2
Upper Grande Ronde	Mid - Grande Ronde	2.2	0.8	0.3
Upper Grande Ronde	Upper Grande Ronde	3.3	0.5	0.1
Imnaha	Zumwalt	4.7	1.2	0.4

2.1.3) Comparison of harvest impacts in previous years and the harvest impacts anticipated to occur under the harvest regime in this FMEP.

Mortality, if any, is non-target mortality created by catch and release of adult and juvenile steelhead. No change is expected in the harvest rate associated with this FMEP.

2.1.4) Description of additional fishery impacts not addressed within this FMEP for the listed ESUs specified in section 1.3. Account for harvest impacts in previous year and the impacts expected in the future.

Incidental and direct adult steelhead mortality occurs in tribal, sport and commercial fisheries in the Columbia, Snake, Grande Ronde and Imnaha rivers. Chilcote (2001) estimated the combined Columbia River and in-basin adult fishing mortality on wild steelhead for the populations covered by this FMEP (Table 4). Harvest related mortality is not expected to increase above that observed over the past several years. As noted earlier, risk assessment analyses conducted by Chilcote (2001) suggests that these expected fishery mortatiliy rates will not adversely impact the viability of these populations.

Table 4. Estimated Columbia River and within Snake Basin harvest mortality for adult wild steelhead returning to the FMEP area, 1991-2000.

Year	Columbia	In-basin	Combined
1991	.160	.02	.18
1992	.147	.02	.16
1993	.164	.02	.18
1994	.155	.02	.17
1995	.105	.02	.12
1996	.105	.02	.12
1997	.090	.02	.11
1998	.105	.02	.12
1999	.090	.02	.11
2000	.079	.02	.10

SECTION 3. MONITORING AND EVALUATION

3.1) Description of the specific monitoring of the "Performance Indicators" listed in section 1.1.3.

- Monitor Oregon Sport Fishing Regulation processes to ensure angling opportunity is maintained consistent with sustainability and recovery of listed steelhead populations. Angling regulations are reviewed annually.

- Monitor warmwater angler incidental catch of steelhead in the area addressed by this FMEP by reviewing data gathered through enhanced efforts by Oregon State Police (OSP) and the Lower Snake River Compensation (LSRCP) Evaluation steelhead creel effort ongoing by ODFW and WDFW.

- Specific guidelines for interview questions regarding incidental catch of steelhead by sturgeon and warmwater anglers will be provided to OSP and steelhead creel checkers. Angler checks by OSP occur year around in the FMEP area but are concentrated in the spring, summer and fall months in the Lower Grande Ronde and Snake rivers. The LSRCP Evaluation steelhead creel surveys occur during the fall and spring months in the Lower Grande Ronde River in Oregon and Washington.

- Review results of the ongoing Idaho Power Snake River Recreational Use Study when completed to validate assumptions made regarding the Snake River portion of this fishery.

- Continue to monitor summer steelhead adult escapement trend in selected streams via annual index reach redd counts.

3.2) Description of other monitoring and evaluation not included in the Performance Indicators (section 3.1) which provide additional information useful for fisheries management.

a) Monitoring results of studies to determine adult and juvenile mortality rates in the Snake and Columbia rivers.

b) Monitoring results of ongoing fisheries evaluations to determine adult steelhead impacts in Columbia and Snake River fisheries.

3.3) Public Outreach

Oregon State Police and ODFW creel survey contacts will continue at the current level. Oregon Sport Fishing Regulations and these individual contacts will continue to be the main vehicle providing information regarding bag limits, seasons and fish release protocol.

3.4) Enforcement

Oregon State Police patrols and contacts with sturgeon and warmwater anglers will continue at the current level within the FMEP area. Data from enforcement contacts are summarized and provided to fisheries managers indicating compliance rate for anglers by river reach. This information is reviewed and incorporated into enforcement planning and angling regulation-setting processes.

3.5) Schedule and process for reviewing and modifying fisheries management.

3.5.1) Description of the process and schedule that will be used annually to evaluate the fisheries, and revise management assumptions and targets if necessary.

a) Annually review data available through enhanced information gathering during steelhead creel and Oregon State Police contact with warmwater and sturgeon anglers to assess assumptions made in this FMEP regarding incidental catch of steelhead.

b) Annually monitor steelhead population status via spawning ground surveys in key areas.

c) Annually review estimated out of basin (dam related mortality, tribal harvest and incidental sport and commercial fisheries related mortality) and in-basin mortality (incidental catch and research related mortality) factors to determine potential for these factors to affect steelhead population viability within the FMEP area.

3.5.2) Description of the process and schedule that will occur every 5 years to evaluate whether the FMEP is accomplishing the stated objectives. The conditions under which revisions to the FMEP will be made and how the revisions will likely be accomplished should be included.

At 5 year intervals:

a) Review status of affected steelhead populations relative to viable and critical thresholds.

b) Review performance of fisheries management measures relative to steelhead population impacts and status.

c) Modify FMEP, Sport Angling Regulations, monitoring or enforcement as needed.

SECTION 4. CONSISTENCY OF FMEP WITH PLANS AND CONDITIONS SET WITHIN ANY FEDERAL COURT PROCEEDINGS

The actions and objectives of this FMEP are subject to and consistent with the Columbia River Fish Management Plan (U.S. v Oregon).

References Cited

Chilcote, M. W. 1998. Conservation Status of Steelhead in Oregon. Information Report 98-3. Oregon Department of Fish and Wildlife, Portland, 108p.

Chilcote, M.W. 2001. DRAFT - Conservation assessment of steelhead populations in Oregon. Draft Information Report 01 – xx. Department of Fish and Wildlife, Portland 86p.