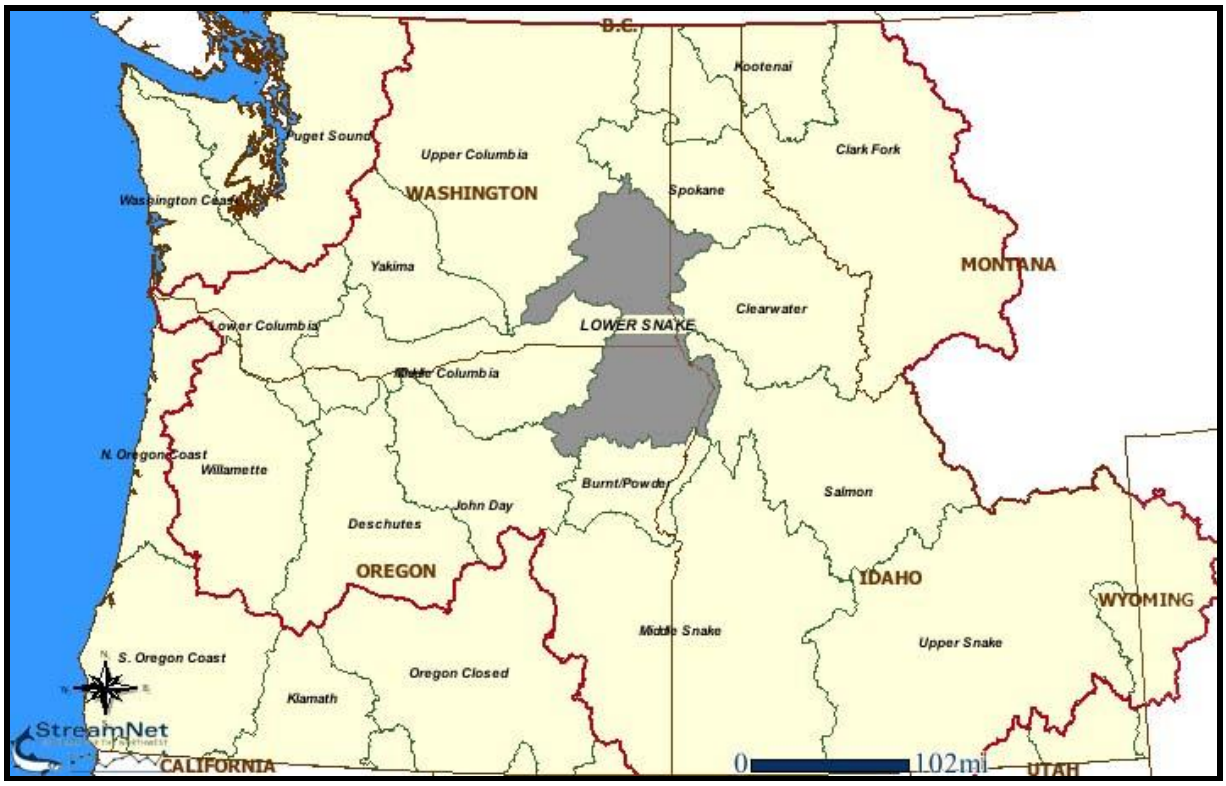
U.S. Fish and Wildlife Service - Pacific Region

Columbia River Basin Hatchery Review Team

Columbia River Basin - Lower Snake River Region

Grande Ronde and Imnaha River Watersheds



Oregon Lower Snake River Compensation Plan State Operated Facilities

Irrigon, Lookingglass, and Wallowa Fish Hatcheries

Assessments and Recommendations
Final Report, Appendix D:

Complete Text of Comment Letters Received from Stakeholders

April 2011

Please cite as:

U.S. Fish and Wildlife Service (USFWS). 2011. *Oregon Lower Snake River Compensation Plan State Operated Hatcheries: Assessments and Recommendations Appendix D: Complete Text of Comment Letters Received from Stakeholders. Final Report, April 2011*. Pacific Region. Portland, OR. < http://www.fws.gov/ pacific/fisheries/hatcheryreview/

Appendix D: Complete Text of Comment Letters Received from Stakeholders

Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Comments on Draft HRT Oregon LSRCP Programs Report [1]

These are technical comments only and do not express the policy position of CTUIR as related to any of the recommendations or alternatives.

P61 – Issue LC-SC4: Last sentence; there are specific details for the use of jacks in the broodstock outlined in the Grande Ronde Spring Chinook Hatchery Management Plan (GRSCHMP).

P62 – Recommendation LC-SC5: Why would you recommend precluding Catherine Creek strays from use in the Lookingglass Creek broodstock? Catherine Creek stock is the founding population source for the Lookingglass program and Catherine Creek stock captive brood progeny as well as captive adults returning to Catherine Creek are intentionally incorporated into that broodstock.

P73 – Alternative 5: The recommendation to totally replace the 1.24M production with only Lookingglass and Imnaha stocks cannot be achieved at your recommended density and flow index criteria.

P95 – Issue UGR-SC3: Last sentence; there are specific details for the use of jacks in the broodstock outlined in the GRSCHMP.

P98 – Alternative 2: The recommendation to reduce the program to a 130K smolt release and returning 60 pairs of adults does not even meet the minimum conservation requirement that the captive brood program was initiated from.

P118 – Issue CC-SC4: Last sentence; there are specific details for the use of jacks in the broodstock outlined in the GRSCHMP.

P121 – Alternative 3: Why would anyone recommend transferring Catherine Creek stock (the same as is being used for the Lookingglass Creek reintroduction program) to another facility and rear an out of basin stock (Imnaha) there instead? It would seem to make a lot more sense to displace the Imnaha program to a different facility.

P140 – Recommendation LR-SC2: Could you clarify the first sentence for me? When you use the term viability "threshold" are you referring to the number identified for delisting or the minimum threshold? In the Lookingglass, Catherine Creek and Upper Grande Ronde sections

[1] *Written comments provided December 16, 2009 by Brian Zimmerman, O & M Project Leader, CTUIR.*

the recommendation to re-evaluate the sliding scale is based on natural escapement goals rather than viability threshold.

P141 – Issue LR-SC5: Last sentence; there are specific details for the use of jacks in the broodstock outlined in the GRSCHMP.

P143 – Recommendation LR-SC10b: This already exists although there are questions surrounding the integrity of the data.

P148 – Alternative 7: I don't really understand the applicability or usefulness of this Alternative for any of these situations where multiple programs are conducted at one facility (same as Lyons Ferry Complex). You would have to discontinue all the programs at Lookingglass in order to close the facility not just one.

P170 – Issue IR-SC3d: Nor do I believe that the time series analysis shows any ***decrease*** in the number of natural origin recruits.

P170 –Recommendation IR-SC3: See previous comment for Lostine Recommendation LR-SC2. Again, both viability threshold and escapement goals seem to be used interchangeably in the recommendation. In addition, would generally disagree that sliding scales should be based solely on minimum threshold numbers and not acknowledge seeding levels or escapement goals.

P171 –Recommendation IR-SC4: In many cases you make the recommendation to increase harvest opportunity without any consideration of the feasibility to do so. In most places within the Snake Basin, there would need to be a change in NMFS "take" criteria to expand opportunity.

P172 –Recommendation IR-SC6: Your recommendation to incorporate two stage releases conflicts directly with your recommendation ***not*** to do this for all the other Grande Ronde programs.

P177 – Alternative 4: To reiterate the concerns expressed in the LFH Complex Report, "Stepping Stone" programs significantly affect both logistics and space at a hatchery facility. While you acknowledge the logistical complexities as a "Con" there is no mention that these types of programs essentially double the holding needs for both broodstock and juveniles compounding already existing space issues.

P179 – Alternative 6: Question the recommendation to reduce to 120K smolt level. It is my understanding that a 150K program was needed at a minimum to maintain conservation benefits. This was the criteria used when developing the captive brood programs.

P199 – Issues WW-SS3&4: I think it would be beneficial to relate these two issues to the same issues and recommendations in the LFH Complex Report rather than segregating or isolating them from each other.

P201 –Recommendation WW-SS6: The statement regarding reducing the number of smolts reared "on-station" needs to be clarified since early rearing for these fish occurs at Irrigon.

P201 –Recommendation WW-SS7: How big an issue is the CWD problem? It appears that they fall within the IHOT guidelines as meeting full production most all the time. Is the implementation of these recommendations justified considering their potential financial and production impacts?

P223 –Recommendation LSC-SS5: The benefits from some of these recommendations to increase survival are a bit misleading. While they may lead to small reductions in O&M costs due to less brood, eggs, water, etc., they could also lead to increased space issues or costs by requiring more trays as well as larger adult surpluses due to less brood.. Again, I think it would be beneficial to assess the potential benefit against the potential cost in making the recommendation to see if the increase in ***adult*** survival justifies the implementation effects especially for mitigation type programs. Also, the statement "maximum of two females per tray or ~8000 eggs" doesn't seem to jive. Most STS programs have much higher fecundities than 4000/female. Why not just leave it as the IHOT guideline?

P226 – Alternative1: General comment; in many case the "current program" cannot be implemented with the recommendations.

P229 – Alternative 4: Same comment as for Imnaha CHS.

P230 – There does not appear to be any Alternative which specifically addresses discontinuation of the Big Sheep Creek juvenile program.

Oregon Department of Fish and Wildlife[2]

Oregon
Theodore R. Kulongoski, Governor

Department of Fish and Wildlife
Northeast Oregon Regional Office
107 20th Street
La Grande, OR 97850
Voice (541) 962-1832
FAX (541) 963-6670

January 7, 2010

Via email

Don Campton
US Fish and Wildlife Service
Fishery Resources, 911 NE11th Avenue,
Portland, Oregon 97232

Oregon Department of Fish and Wildlife (OFDW) appreciates US Fish and Wildlife efforts to assess hatchery programs in Northeast Oregon. The Hatchery Review Team (HRT) opinion provides some intriguing ideas and helpful insights to the hatchery programs operated in the Grande Ronde and Imnaha basins. Implementation of your preferred alternatives and recommendations, however, is more complicated than articulated in your draft review. Some recommendations will easily gain co-manager consensus such as weir upgrades on the Lostine and Imnaha Rivers, hatchery intakes and intake screen compliance, but will struggle with funding. In contrast, other recommendations may not gain consensus, such as modifications to adult broodstock management and disposition of hatchery surplus, although require less capital investment. Broodstock management and disposition of surplus adults has been in dispute for years, if not decades, and led to compromise by all parties. Although ODFW is generally supportive of limiting hatchery origin adult contribution in brood stock and supplementation, program reform will be difficult. Implementation of program reform will be challenged with US v Oregon production agreements, Tribal Trust, and fiscal integrity. ODFW does expect, however, the USFWS to proceed with the capital modification previously outlined in the 2010 and 2011 fiscal years.

The HRT recommendation did create some areas of concern:

- HRT recommended that Density Index (DI) should not exceed 0.2[1]. ODFW is in general agreement with low density rearing, however, DI is applied to final rearing. ODFW, Nez Perce Tribe and Confederated Tribes of the Umatilla Indian Reservation have agreed that a higher density (0.75 DI or 1 pound of fish per ft.^{3} rearing volume) during early rearing is acceptable. ODFW, evaluations on rearing density (DI) between 0.1 and 0.25 (Rapid River stock, brood years 1991 and 1992) at Lookingglass Hatchery were inconclusive (ODFW data files; personal communication Hoffnagle 2009). Low density (0.1) rearing did not result in an increased survival advantage to adults (SAR) that returned to Lookingglass hatchery. In contrast, smolts reared at a density index of 0.25 performed equally as well. A final rearing density of 0.2 is not unreasonable, but supported more by an "artful" approach to fish culture rather than a scientific one. Although not recommended by the HRT, ODFW would strongly support low density rearing for the "stepping stone" group (0.15) but a higher density (0.25) for the harvest group.

[2] *General comments provided January 7, 2010 by Scott Patterson, ODFW Hatchery Coordinator for Northeast Oregon. Fish Health comments provided January 6, 2010 by Sam Onjukka, ODFW Fish Health Specialist for Northeast Oregon.*

- HRT recommendation of static Flow Index (FI) of 1.0 does not apply to water sources of daily and seasonally fluctuating water temperatures. The FI is a measure of available oxygen at various water temperatures and elevations: therefore, a static measure is not applicable (Piper 1982)[1]. US Fish and Wildlife Service salmonid hatcheries are operated with FI between 1.0 and 2.5 (Wedemeyer 2001)[2].
- HRT recommended that fish are not moved between basins and hatcheries due to concern of disease transmission. ODFW believes that this risk can be minimized with good fish health and culture practices. Therefore, the benefits of rearing fish in secure locations in quality water out weigh the potential fish health risks. ODFW does not agree that the low fish health risks should out weigh the purpose or benefits of the programs, i.e., the exception should not "swallow" the rule.
- HRT recommendation for a two stage brood or "stepping stone" approach in some programs or alternatives but not in others is confusing.

ODFW will carefully consider your recommendations as we work through the HGMP development and long term reform.

Sincerely,
Scott D. Patterson

---

[1]Robert Piper, Ivan McElwain, Leo Orme, Joseph McCraren, Laurie Fowler, John Leonard. 1982. Fish Hatchery Management. United States Department of the Interior, Fish and Wildlife Service, Washington D.C.
[2]Wedemeyer, Gary A. editor, 2001. Fish hatchery management, second edition. American Fisheries Society, Bethesda, Maryland.

ODFW Fish Health Comments

Don,

I attended the LSRCP HRT stakeholders meeting in Pendleton on December 8th. Since then I've had a chance to review the latest draft and compile the following comments:

1) LC-SC6: Adult Chinook passed above Lookingglass Hatchery (LGH) are also a known carrier of fish pathogens and contribute to the risk of rearing fish on surface water at this facility (~May-release the following year) for each brood year.

2) LC-SC7: There was quiet a discussion on density index and flow index at the Pendleton meeting. My comment here is that lower density rearing is a safer approach from a Fish Health point of view. So I support lower density rearing within reason. I would be reluctant to shift densities higher without careful analysis. There is a tendency with programs to add and rear more than a facility has the capacity to do. Also, top of page 63 (same section) discusses the possibility of moving fish outside earlier on surface water if fish health is not a concern. There are fish health concerns (pathogen exposure) with doing this. ODFW Fish Health recommendations have been maximize rearing on pathogen free water.

3) LC-SC8: My comment here is more on the density & number of fish per raceway than flow index in outdoor raceways but thought it may fit best here. An extensive review of disease epidemiology was given for Lookingglass Hatchery operations in a report titled "A Report of Infectious Disease Epidemiology among Spring Chinook Salmon at Lookingglass Hatchery" (Groberg, W.J, Onjukka, S.T., Brown, K.A. and Holt, R.A., November 30, 1999). In this report careful recommendations were listed for disease management. The bottom line recommendations for disease management boiled down to pathogen-free water, low density rearing and segregated rearing. An important aspect of these recommendations that I continue to press for is lower density rearing. There is a temptation with LGH to increase the number of fish per raceway due to space limitations to above 50,000 – 60,000 per raceway (final outside ponding). I do not think this is advisable from a Fish Health perspective.

4) LC-SC10: These are Therapeutic treatments of Erythromycin. The reason for these treatments is that adult salmon carrying the agent for BKD are passed above the hatchery water intake and thus contaminate the water supply. Outbreaks of this pathogen occur at the hatchery and thus therapeutic treatments are recommended before clinical disease occurs. Attempts to eliminate the use of erythromycin at Willamette River spring Chinook facilities has worked well where no anadromous fish (specifically salmon species) are present in the hatchery's water supply. At facilities where salmon are present, we have not been able to eliminate the use of erythromycin due to continual presence of clinical disease even in fish from females where the pathogen was not detectable by the ELISA method.

5) LC-SC11: M. cereberalis (this pathogen is not a concern at Irrigon since there is no fish to fish transmission – a well water facility).

6) LC-SC13: Pathogen transmission not disease transmission. …. UV treatment is necessary to reduce the potential for pathogen transmission (esp. R. salmoninarum, IHNV, and M. cerebralis) from anadromous and…. Also, in the recommendation section I'd suggest adding…and other pathogens at the end of "…to prevent the transmission of IHNV, R salmoninarum and M. cerebralis.." since there other pathogens of concern.

7) LC-SC16: change disease transmission to pathogen transmission

8) LC-SC17: cheap styrofoam tends to break apart into small pellets that could be consumed by the fish and thus create problems – must make sure that proper materials are used for shade.

9) LC-SC18: change disease transmission to pathogen transmission

10) LC-SC-22: change disease transmission to pathogen transmission

11) WW-SS7: Replace florfenicol with Aquaflor.

12) LSC- SS6: Replace florfeincol with Aquaflor. Insert infected in the sentence …progeny from highly infected fish…

13) LSC-SS7: The introduction incorrectly states that no pre-release examination is done at Little Sheep. In addition to a pre-transfer examination at Irrigon Hatchery, we do conduct pre-release examinations as per a monthly examination if smolts are acclimated more than three weeks.

-ODFW Fish Health does not support or think it is necessary to lethally sample 60 grab-sampled healthy fish sample for M. cerebralis and virus. We do support the recommendation that any non-migrating steelhead smolts be placed only in lakes and ponds where Mc is endemic in the system. Please call or email if you have any questions. I appreciated the opportunity to review and provide input to the draft.

Best wishes,

Sam Onjukka
ODFW - Fish Health Services
Badgley Hall 217
One University Blvd.
La Grande, OR 97850
541-962-3823 (voice) 541-962-3873 (FAX) sonjukka@eou.edu

Native Fish Society[3]

GENERAL

In reviewing the information in the hatchery team review for Grande Ronde spring chinook I looked for but did not find a complete history of this hatchery spring chinook program. By this I mean that the initial program used out-of-basin spring chinook for hatchery production (pre-1991). After spring chinook were listed as a threatened species under the ESA, the whole hatchery program was changed from using non-native spring chinook (Carson and Rapid River stock) to using endemic stock based on genetic analysis of the Grande Ronde stock that indicated six distinct breeding populations in that basin. This shift in the hatchery program is totally missing in the introduction to spring chinook hatchery reform, yet it is a major commitment to recovery and conservation of that stock of fish. Can you please explain why this history does not get the discussion it deserves in the present hatchery reform draft?

Furthermore, I have noticed that for summer steelhead hatchery programs in the Grande Ronde basin there is no commitment to eliminating the non-native hatchery summer steelhead stock and retooling the hatcheries with native summer steelhead as was done for spring chinook. This difference in the treatment of spring chinook and summer steelhead hatchery programs requires an explanation in a plan that addresses hatchery reform. Can you explain why the hatchery review team ignored this primary issue in its recommendation for hatchery summer steelhead reform?

There is an absence of consistency between the treatment of spring chinook and summer steelhead in the Grande Ronde River and the review team should explain explain the departure between the treatments of these two species in the same basin.

LITTLE SHEEP CREEK SUMMER STEELHEAD

12-22-09
From: Bill Bakke, Native Fish Society
To: Michael Schmidt, Long Live The Kings
RE: Comments on LSRCP Hatchery Evaluation for Little Sheep Creek

LSRCP HATCHERY EVALUATION – LITTLE SHEEP CREEK

Problems Identified:

The cost to produce a fish for harvest are not displayed.
Genetic conservation is not included in program. page 219
List of conservation benefits limited to "enhancing ecological processes." page 220

[3] *Written comments provided December 22nd, 2009 by Bill Bakke, Director, Native Fish Society.*

Naturally spawning hatchery fish poses a risk to the wild population. page 220
High density rearing increases risk of disease.
Hatchery releases residualize in stream and increase risk to wild listed fish. p. 220
Hatchery fish stray into rivers such as the Deschutes and cause risk to wild fish. p. 219

Dam passage mortality increases risk to wild fish abundance and hatchery fish adds a layer of additional risk to reproductive success of wild fish. p. 221

Hatchery fish outplanting (adults and juveniles) "poses a significant domestication risk and likely loss of fitness of naturally spawning steelhead population in Big Sheep Creek." P. 221

Release of untreated effluent from hatchery spawning poses water quality risk and health risk to wild fish downstream of L Sheep Creek facility. P. 221

Weir design poses risk to juveniles migrating down stream. p. 221

"Hatchery releases that residualize in the stream can pose competition risks to natural origin salmonids in Little and Big Sheep creeks and Imnaha River." P. 221

"Outplanting of hatchery adults (average 1000 annually) is likely to cause adverse ecological interactions. It is likely this reduces juvenile survival and natural productivity of wild steelhead in Big Sheep Creek." P. 221

No research identified. P. 221

LSC-SS1 P. 222: No cost to catch evaluation recommended. Does the LSRCP have a harvest and recreation benefit goal? Mitigation is constructed to produce fish not worry about contribution and conservation. It is an industrial model concerned only with production rather than providing a stream of benefits for user groups or protecting native fish sustainability.

LSC-SS2 p. 222: No genetic benefit mentioned for issue. I agree with this assessment pointing out that politics rather than conservation and recovery as the primary driver for Big Sheep Creek.

LSRCP was set up as a mitigation plan based on an industrial production model. It is concerned about production quotas and return. A major departure from the industrial model is the evaluation of return on the investment. The LSRCP is not concerned with contribution to fisheries or with conservation of wild, native fish populations. If it were, the initial spring chinook mitigation program would have been designed to maintain the productivity of the Grand Ronde salmon. Instead, the primary program focus was using non-native hatchery stock to meet production goals. It was not until the Grand Ronde spring chinook were listed as a threatened species under the ESA that attention was paid to conservation of the genetic diversity in the basin and using locally adapted fish for the hatchery program. The same approach was taken for steelhead with hatchery stock taken from Lower Granite Dam fishways rather than from the rivers of origin. Accountability for the use of public funds

would determine the actual contribution to the public fisheries and the cost to provide a fish that is harvested.

Broodstock choice and collection: This section is blank. A description of this problem, if any, should be stated and it should be noted whether the reviewers agree or have recommended changes. This would be better than leaving it blank.

LSC-SS3: It is noted that more hatchery origin fish than wild origin fish are naturally spawning in Little Sheep Creek, but this is excused because there is a study evaluating the reproductive success of hatchery and natural-origin fish. This study has been going on for years and there is presently enough information on this question generated since 1978 on the Deschutes, Kalama and Hood River to conclude that the reproductive success of wild steelhead is negatively affected by hatchery origin fish. Consequently, using research as a way to justify continuing to damage the fitness and reproductive success of wild (ESA-listed) steelhead is no longer acceptable. In addition, the excessive number of hatchery-origin steelhead in the natural spawning population is in violation of the ODFW wild fish policy and the Native Fish Conservation policy. Both these policies are administrative law and therefore this program is illegal. The weir on this stream should be used to exclude hatchery fish from the natural production area above it and adult hatchery steelhead should not be outplanted into the stream above this weir.

The recommendation to equalize the hatchery and wild spawner numbers above the weir on Little Sheep Creek using the HSRG protocol is inappropriate for it increases the risk to an ESA-listed wild steelhead population. The native brood stock integrated hatchery technology is a hypothesis that has not been tested (RIST 2009) and should not be used on a threatened population. By definition a threatened wild population is not abundant enough to be mined for eggs in the hatchery program and allowing interbreeding between hatchery and wild fish is also inappropriate since we know that it has a negative effect on the wild population. In addition, we know there are negative ecological effects created by naturally rearing hatchery-origin fish. Consequently, the recommendation in this section is biologically incompetent, it ignores the best scientific information already available, and contributes to the decline rather than to the recovery of a ESA-listed steelhead population. So quit it!

LSC-SS11: While the Native Fish Society agrees with the research and monitoring recommended in this review, we find it totally irresponsible to not include a cost to catch evaluation of this hatchery program. This means that appropriate data is collected on the cost to produce these hatchery fish and an accurate catch assessment of these hatchery fish is conducted. These programs are supported by public funds and it goes to accountability to have an accurate assessment of the cost to produce a fish that is harvested from this hatchery program. The reviewers should be supporting accountability of these publicly funded hatchery programs by recommending a cost to catch analysis for each hatchery program.

Preferred and Recommended Alternative:

Given the legitimate concerns about the shortfall in the present evaluation, the Native Fish Society does not agree with the recommendation. We believe that based on the issues identified in our review, that ESA-listed wild steelhead are not adequately protected and this recommendation impedes recovery of these steelhead rather than advances it.

WALLOWA HATCHERY SUMMER STEELHEAD

12-22-09

From: Bill Bakke, Native Fish Society
To: Michael Schmidt, Long Live the Kings
RE: Comments on the LSRCP Hatchery review for Wallowa Hatchery

LSRCP HATCHERY REVIEW – WALLOWA HATCHERY

Problems Identified:

"The source of eggs includes fish from Cottonwood Creek facility (WDFW). Since WDFW releases Skamania Hatchery steelhead into the lower Grande Ronde River, there is a potential to include a non-native (non-ESU) steelhead into the Wallowa Hatchery program." P. summary xii

"Steelhead from Big Canyon facility recycles adult steelhead to augment angler catch. These fish are potential strays and could interbreed and compete with native steelhead in the Grande Ronde River system." P. summary xii

"Pahsimeroi Fish Hatchery (Idaho) steelhead were released into the Grande Ronde in 1979."

"Continued propagation and release of an introduced hatchery stock in the Grande Ronde River basin poses genetic and ecological risks to ESA-listed natural populations." P. summary xii

"…significant out of basin straying of Wallowa steelhead into Deschutes and John Day rivers poses genetic and ecological risks to natural populations in those watersheds. An estimated 6% of all returning Wallowa Hatchery steelhead for return years 1993/1994 through 2004/2005 were recovered as out of basin strays." P. summary xiii

No conservation goal is identified for this hatchery program. However the ICTRT has recommended natural-origin steelhead minimum abundance thresholds for lower Grande Ronde (1,000), Joseph Creek (500), Wallowa R (1,000) and upper Grande Ronde (1,500). (ICTRT 2009) p. 183

"Wallowa stock is a segregated hatchery stock that is not included with the ESA-listed Snake River steelhead DPS." It is therefore considered a non-native stock. P. 184

(Comment: Since the Wallowa hatchery steelhead is certified a non-native stock and for that reason it is not listed under the ESA, what is the scientific basis and defense for retaining this stock in production? In order to establish an effective wild steelhead recovery program for the Grande Ronde River and to reduce straying into other watersheds, this hatchery stock should be terminated. What is the scientific basis for retaining this hatchery stock given its detrimental impact on ESA-listed steelhead and recovery investments in this basin?

"The fall-returning (in Grande Ronde R.) steelhead component of the Wallowa Hatchery stock was collected in the Grande Ronde River in an effort to reduce stray rates of Wallowa R hatchery steelhead into Deschutes and John Day Rivers. Preliminary evaluation (two years) indicates that this is not reducing stray rates.

(Comment: Genetic evaluation of steelhead indicate that 70% are of hatchery parentage, so it is unclear what proportion of wild-origin fish were collected. More information needs to be provided on the goals of this program. We know the hatchery fish have a high stray rate and if this program is targeting hatchery-origin fish, then how does this new broodstock reduce the stray rate? P. 185

Adult hatchery steelhead are infected with whirling disease found in Wallowa R. and Spring creek that feeds the hatchery. "Adult steelhead return with non-debilitating infections of *M. cerebralis* (agent of whirling disease), likely obtained as smolts when exposed to the parasite-endemic waters of the Wallowa River and Spring Creek." P. 185

(Comment: Stray steelhead infected with whirling disease have been recovered in the Deschutes River and it can be assumed infected fish are in the John Day River. Ecological conditions in the Deschutes River do not favor the establishment of whirling disease (exception may be Trout Creek), but there has been no assessment of whirling disease in the John Day River. There is a potential threat of whirling disease becoming established in the John Day River. Stray hatchery fish from Wallowa and Big Canyon facilities are carriers of whirling disease, so their threat to wild steelhead in basins where they stray is three fold: genetic, ecological, and disease transmission.)

According to the review team draft report 920,000 steelhead smolts are released annually from Wallowa and Big Canyon facilities into the Grande Ronde system. The estimated stray rate for these fish is 6%. The report should estimate the number of Wallowa Hatchery strays. These strays not only reduce the mitigation benefit of this hatchery program to the fishery in the Snake River basin, they represent a major impact on wild steelhead in the basins where they stray. The review team did not finish their evaluation for a calculation of the estimated number of strays produced by the hatchery program was not done. Considering the high risk these fish represent to wild steelhead in other basins, it is appropriate to estimate the number of fish straying each year by basin.

(Comment: Stray rates into other watersheds such as the Deschutes and John Day rivers is a genetic and ecological risk to wild ESA-listed steelhead in these basins. The stray rate averaged 586 fish from 1993 through 2005 with a range of strays of 143 to 1,365. Strays not only endanger wild steelhead they are not available to fisheries they are intended to mitigate. In addition, the cost of production for these fish is increased because the intended benefit of the hatchery program is reduced.)

No steelhead are intentionally passed above the weir on Spring Creek to help prevent disease. P. 185

(Comment: This hatchery program has removed a stream from natural production and is a limitation on recovery of ESA-listed wild steelhead in the Grande Ronde River. The review team should calculate the potential production and the impact on recovery that has been imposed by taking this stream out of the natural spawning capacity for wild steelhead.)

Deer Creek is the location of the Big Canyon acclimation facility. All unmarked adult steelhead are passed above this weir and no hatchery fish are passed. Since Wallowa Hatchery steelhead were passed above this weir in the early years of operation, genetic sampling indicate that the natural-origin fish in Deer Creek have been influenced by Wallowa Hatchery stock. P. 186

(Comment: This protocol is ineffective as a wild ESA-listed recovery measure because of the introgression of non-native non-DPS steelhead in the naturally produced steelhead population. This population is an example of a hatchery swarm that scientists have warned about in the use of non-native hatchery fish in a basin. Genetic sampling of all unmarked hatchery fish from natural production is needed so that only the estimated 30% of the run that is actually of native ancestry is passed above this weir.

Big Canyon hatchery fish (100) are recycled to augment sport fisheries. These fish are uniquely marked with an opercle punch. In 2005-2006 run year, 130 steelhead were recycled. Of those fish 66 were recaptured at the weir and 7 were harvested. 57 steelhead were not accounted for. P. 186

(Comment: Recycling of hatchery fish to augment fisheries should be terminated. This action does not contribute much to the fishery it is intended to benefit; it increases stray rates, and increases genetic and ecological impacts on ESA-listed steelhead.)

In the 1970s the NMFS research adopted smolt transportation as a way to increase the survival of wild salmon and steelhead.

(Comment: In the 1980s the NMFS research pointed out these stray rates were a benefit to the lower Columbia River fishery, but did not consider their negative biological impact on native wild steelhead. Following this research, NMFS stated that the hatchery strays in the Columbia were not caused by smolt transportation. The goal of NMFS is to protect the

federal hydro system from spilling water for smolt migration at the dams and in doing so they advocated the benefits of smolt transportation passed these dams. In 2008 and 2009, additional research once again documents the high stray rates of Snake River steelhead, saying "downstream barging of juveniles may result in stray rates 2 to 3 times greater than those juveniles that were not barged." P. 186.

In an effort to solve the high stray rate problem of Wallowa Hatchery steelhead, ODFW has initiated a program to capture fish that actually return to the Grande Ronde River and create a new brood stock. In two years of testing, it is evident that these new hatchery fish from those caught in the river for brood stock do not stray less than the old Wallowa River hatchery stock. P. 186

"In September, both Wallowa and Little Sheep Creek stock steelhead are adipose-fin clipped. In October, steelhead are ventral clipped and coded-wire tagged. PIT tagging occurs as early as December and as late as January." P. 189

"The genetic work performed on the unmarked fish returning to Wallowa FH indicates that roughly 70% of the unmarked returns appeared to originate from Wallowa stock hatchery fish and 30% natural-origin fish representing unidentified populations within the Snake River steelhead DPS." P. 185

"Attempts are made to reduce the number of Wallowa FH steelhead that residualize in the Grande Ronde basin. 1) see release measures in objectives section and 2) there is a selective fishery for adipose-fin clipped residual steelhead (called rainbow trout in fishing regulations) in the Wallowa River in attempt to reduce the number of residualized hatchery steelhead in the watershed." P. 188

(Comment: While having a kill fishery on ad-clipped residualized steelhead has limited value in reducing the residual rate of these hatchery smolts. There is no mention that this fishery has been evaluated for it effectiveness in removing residuals. In addition, a trout fishery increases the mortality on wild, ESA-listed steelhead juveniles that are caught and released. If barbed hooks and bait are allowed in this fishery, the impact on wild steelhead juveniles and on adult returns is increased. The review team did not address the need to evaluate this program even though it was established to clean up residualized hatchery-origin smolts.)

"There is no culling for IHNV because prevalence of the virus is very low (from 2000 to 2009, prevalence averaged 1.5%, with a range of 0 to 7.8%). The progeny of IHN adults are utilized." P. 188.

(Comment: since these fish have a high stray rate into other watersheds, they are potential vectors for spreading this virus throughout the Columbia River basin. The review team did not discuss this issue. In addition, these fish are infected with whirling disease and strays may introduce this disease into other basins that these fish stray into.)

"Dorsal fin erosion occurs when steelhead (and rainbow trout) reach 100 fish per pound size or 100 lbs." P. 189

(Comment: eroded dorsal fins could be used as a passive mark for these hatchery fish and regulations adjusted to permit a kill fishery on fish with eroded dorsal fins in rivers where they stray. This would be an important adjustment in angling regulations when hatchery fish are not externally marked.)

"Steelhead are sampled for length and weight at each acclimation site prior to release. Samples are taken to ensure that 90% of the population is over 170mm in length." P. 190

(Comment: Size at release, if larger than naturally-produced smolts, increase competition between hatchery and wild smolts. Scientific recommendations have provided long-standing advice for release of steelhead smolts at the same size as the wild smolts in the stream. The review team does not address these issues as an important factor in reducing the impact of hatchery steelhead on wild steelhead. In addition, there is a major residualization of hatchery smolts in the river. These fish compete for food and rearing space with wild steelhead. The review team does not address the ways in which this can be controlled at the hatchery. For example, large male smolts may residualize at a greater rate than female smolts, but the review team does not make recommendations to solve this problem, but does note that ODFW has made modifications to reduce residualization. Reducing the impact of residual hatchery steelhead on ESA-listed wild steelhead may be an important contribution to recovery of the wild stock. A residualization target should be set and verified.)

Near the end of the release period for the second group, before the remaining fish are force released, as a best management practice, the remaining steelhead are sampled and removed if greater than 70% of the fish are males. When greater than 70% of the fish are males, this results in about 1,000 fish being removed instead of released. This is one approach applied in steelhead programs in attempt to reduce the number of steelhead released that have a high likelihood of residualism." P. 191

(Comment: While this is an important protocol to control residualized smolts, it does not address the central problem of hatchery generated residuals in the stream. The Review Team does not address this overall problem.)

"Approximately 480,000 smolts are released from the Wallowa acclimation site, 360,000 in the early group and 120,000 in the late group." P. 190 "Approximately 320,000 smolts are released from the Big Canyon acclimation site, 160,000 in the early group and 160,000 in the late group." P. 191 A total of 920,000 smolts are released from this hatchery program.

(Comment: Is this large release compatible with recovery of wild, ESA-listed steelhead given the stray rates identified, smolt residualization, and potential competition for food and space with wild steelhead in the stream. In addition, large, timed releases of smolts can attract predators that can have an impact on wild smolts. Mullen identified the pied-piper effect on the Wenatchee River when large blocks of smolts dislocated wild smolts and made them more vulnerable to predation. The review team does not address the effect of this large smolt release on wild ESA-listed steelhead and spring chinook in the Grande Ronde basin. Also, there are impacts from these massive releases in the Snake River that also places wild smolts at considerable risk. The cumulative impact of large smolt releases in the Grande Ronde basin and in the Snake and Columbia Rivers are not addressed by the review team. The review team needs to evaluate cumulative effects of hatchery production beyond the river of origin.)

Harvest benefits: *(Comment: While the harvest benefits are estimated for within and outside the project area, the review team does not estimate the cost to provide this catch in these areas, so the public is provided with no information about how much it costs in public funds to provide a fish that is taken in the various fisheries. By not documenting the cost to catch for this hatchery program, the review team is not informing the public about the use of public funds and this lack of transparency is unacceptable in a review of any hatchery program supported with public dollars.)* P. 196.

Recommendations for Current Program:

Issue WW-SS1: ***Present program goals for Wallowa stock steelhead are not fully expressed in terms of numeric outcomes that quantify intended benefits or goals.*** For example, there is currently no quantified harvest goal separate from the mitigation goals.

(Comment: While we agree that this problem be resolved, the Native Fish Society also recommends that the cost accounting for this program, using public funding, be transparent. This means that the cost to provide a fish that is harvested must be determined. By doing this the economic cost of the program is displayed. In an earlier conversation with the manager of the LSRCP hatchery program, I brought this issue up and was told directly by the manager that this information was not needed. This attitude regarding cost evaluation means that the program managers are opposed to cost accounting and providing the public with information regarding their investment in mitigation.)

Issue WW-SS2: ***The release of unmarked adults (that return to Wallowa FH) downstream of Wallowa FH may pose genetic and ecological risks to the natural population in the watershed if those fish are hatchery origin.*** Unmarked adults are transported and released at the Fish Hatchery Lane Bridge, about one mile downstream of Wallowa FH. The intent of this management action is to provide trapped ESA-listed natural-origin steelhead an opportunity to spawn naturally. However, genetic work performed on the unmarked fish returning to Wallowa FH indicates that roughly 70% of the fish are Wallowa stock hatchery fish and 30% are natural origin. The relative risks to the ESA listed steelhead population in the Grande Ronde River of releasing all unmarked fish versus retaining and sacrificing those fish are unknown.

Recommendation WW-SS2: In view of the scientific uncertainties associated with this issue, the Team recommends that unmarked steelhead, indistinguishable from natural origin steelhead, continue to be released downstream from the hatchery in the Wallowa River. The Team also recommends that mark techniques can be evaluated to determine if they can be improved.

(Comment: The Native Fish Society disagrees with this recommendation. Obviously, genetic monitoring of these fish has allowed a distinction to be made between progeny of hatchery-origin fish and native, wild fish. This is a legacy of the old hatchery practices (it created a hatchery swarm) that was not concerned for the impact on wild fish. (Ed Crateau, LSRCP, said "Preservation of wild populations was not a high priority at the time.") This

recommendation is consistent with what Crateau said about the early LSRCP hatchery program that he called "a mistake." To continue that practice, especially for an ESA-listed population is unacceptable and from our perspective it abandons the best available scientific information to solve this problem. The solution is to no longer release fish of hatchery parentage below the weir and to take the necessary precautions to prevent spawning of hatchery fish below the weir. Before fish are released below the weir they should be genetically sampled to determine their heritage.)

Issue WW-SS3***: Wallowa steelhead released in the Grande Ronde River stray into areas of the lower Columbia River basin, including the upper reaches of the Deschutes and John Day rivers.*** These strays pose a genetic risk to other steelhead stocks in the Columbia River basin.

Recommendation WW-SS3: Continue to research different broodstock management strategies. Other broodstock sources may include in-basin endemic steelhead and Little Sheep Creek steelhead.

(Comment: The Native Fish Society reviewed the recommendations and the only one that makes sense is switching brood stock from the old production stock to an endemic one. Determine the genetic parentage of these wild-origin stocks by genetic analysis before releasing them as smolts. Release only those that can be verified as endemic. Given the serious problems posed by the Wallowa Hatchery steelhead to wild steelhead in other basins, this recommendation should be a priority rather than just one on a list of options. A precedent has already been established for a complete stock make over with Grande Ronde spring chinook where all non-native hatchery fish were removed from the hatchery program and it was retooled using only native spring chinook and making a distinction among the existing subpopulations in the basin. It appears to be inconsistent with the best available science and the precedent established for spring chinook, to punt on a science based steelhead hatchery program.)

*Issue WW-SS4****: The continued release of an out-of-basin stock into the Lower Grande Ronde River may pose genetic and ecological risks to the natural-origin steelhead populations in the Grande Ronde River basin downstream of the Wallowa/Grande Ronde River confluence.*** Of special concern are Joseph Creek and Wenaha populations, which are managed for natural production only. Currently data indicate that the Wallowa stock stray within the Grande Ronde River basin at a very low rate and return with a high degree of fidelity to their release sites. For example, of the 4,348 steelhead trapped at both the Big Canyon and Wallowa traps, only 13 were steelhead that strayed between the two facilities.

Recommendation WW-SS4: Continue monitoring the natural escapement to ensure that less than 5% of the naturally spawning population are hatchery-origin Wallowa stock, particularly in Joseph Creek and the Wenaha River. This includes monitoring the selective fishery in the lower Wenaha to estimate the proportion of natural versus hatchery-origin steelhead.

(Comment: The Native Fish Society agrees with this recommendation and it's stated purpose. However, this recommendation calls for a less than 5% stray rate of Wallowa and Big Canyon hatchery fish. While this stray rate is supported by scientific assessment, the value of the wild fish populations in the Wenaha River and Joseph Creek are too important as genetic reserves to risk. Emphasis should be placed on zero stray rates in these two streams. The WDFW hatchery facility on Cottonwood Creek is a particular threat to Joseph Creek and even though this is not part of the present review, your recommendations for this hatchery operation should be included in it to provide a full risk assessment for wild steelhead. The review team does not recommend a protocol for verifying that hatchery-origin fish compose less than 5% of the natural spawning population in the Wenaha River and Joseph Creek. We suggest that this be included in the evaluation.)

Issue WW-SS5: ***Recycled Wallowa stock steelhead that are not recaptured pose unknown genetic and ecological risks to natural populations in the Grande Ronde River basin with very little benefit.*** Approximately 100 fish are recycled about one mile downstream of the Big Canyon acclimation facility on the Wallowa River. Few recycled fish are recovered in the fishery and the percent of recycled fish that go accounted for can be high. For example, for the 2005-2006 run year, 130 steelhead were recycled. 66 of those fish were recaptured at the weir and 7 were harvested. 57 steelhead were not accounted for.
Recommendation WW-SS5: As a best management practice, discontinue the practice of recycling Wallowa steelhead. The Team concluded that the risks of this practice outweigh the benefits.

(Comment: The Native Fish Society agrees with this recommendation.)

Issue WW-SS20: Residualized steelhead can have negative ecological consequence to wild fish in the Grande Ronde River basin. Hatchery steelhead have the potential to residualize in the Grande Ronde River. ODFW does attempt to reduce the number of steelhead released that have the potential to residualize.
Recommendation WW-SS20: Continue to monitor the degree of residualism in the release areas and downstream on the Grande Ronde River and continue to implement actions to minimize residualism as much as possible including outplanting non-migrants to closed bodies of water (lakes or ponds) at the end of volitional release periods. .

Depending upon monitoring and evaluation results, determine whether current management actions are effective or alternative management actions are required to reduce the risk of residualism.

(Comment: The Native Fish Society supports this recommendation, however, a target should be developed and verified for providing the most protection for wild steelhead. Reducing residualization rates "as much as possible" may not actually provide the protection required.)

Alternative 1 (preferred)

(Comment: This alternative maintains the existing program with changes as recommended, but it continues to produce strays that jeopardize wild steelhead in other basins and within the Grande Ronde basin. The hatchery uses a highly domesticated non-native stock to meet mitigation agreements. The review team says, "The continued release of an out-of-basin stock into the Grande Ronde River may ultimately reduce the abundance and viability of naturally produced steelhead." Since the wild steelhead in the Grande Ronde basin are threatened stock protected under the ESA, this recommendation appears a little anemic. The review team appears to be more concerned about meeting mitigation goals than in recovery of ESA-listed fish. This review notes numerous problems, but the recommendations are too often not specific enough to correct the problems identified. The review team did not address the size of the releases from Wallowa Hatchery and Big Canyon, but doing so is appropriate to reduce risk to wild steelhead and improve chances of recovery. There is expert opinion that wild steelhead are as abundant and viable as they were prior to dam construction on the Snake River when they do not have genetic and ecological impacts from hatchery fish. This review was done from the perspective of the hatchery program and the mitigation agreement rather than from the perspective of wild steelhead recovery. While there are many important recommendations to improve this hatchery program, that is very different from reforming the hatchery program to protect the reproductive success of wild steelhead. It may be that releasing 920,000 non-native hatchery fish in the Grande Ronde River basin is not consistent with wild steelhead protection and recovery under the ESA, but the review team did not specifically address this in its issue assessment. In addition, the review team does not recommend termination of the existing hatchery steelhead broodstock and starting over with a verified native brood stock that would help reduce strays, improve mitigation benefits, and promote recovery of ESA-listed steelhead native to this river.)

Pacific Region Fishery Resources
911 NE 11th Avenue
Portland, OR 97232
503/872.2763
E-Mail: Don_Campton@fws.gov

U.S. Fish and Wildlife Service
www.fws.gov

For Columbia River Basin Hatchery Review Information
www.fws.gov/pacific/Fisheries/Hatcheryreview/

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.

April 2011