



U.S. Fish and Wildlife Service - Pacific Region
Columbia River Basin Hatchery Review Team

Columbia River Basin, Mountain Snake Province
Salmon and Clearwater River Watersheds



**Idaho Lower Snake River Compensation Plan State
Operated Hatcheries**

Clearwater, Magic Valley, McCall, and Sawtooth Fish Hatcheries
Assessments and Recommendations

Final Report, Appendix C:
Comments on Draft Report and Review Team Responses

March 2011

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Appendix C: Comments on Draft Report and Review Team Responses

Co-Manager Comments and Responses

Shoshone-Bannock Tribes¹

General Comment

1. **Comment:** In general, the Tribes are in agreement with the purpose of the review, being the long-term conservation of salmonid populations and their inherent genetic resources, which require a reexamination of the role of hatcheries, in light of limiting factors such as habitat, hydropower, and harvest needs, to provide both conservation and harvest goals. ... We are in agreement with the Lower Snake River Compensation Plan (LSERP) adult return goal of 11,660 adult steelhead over Lower Granite Dam. We expect the HRT to ensure all of your alternatives are developed to realize the adult return goal as the first priority, followed by meeting the conservation objectives defined by the Interior Columbia Basin Technical Recovery Team (TRT).

***Review Team Response:** The Team interprets “mitigation goals” as legal obligations to replace “wild” fish with “hatchery” fish to compensate (mitigate) for mortalities imposed on natural populations by the hydropower system. Achieving a mitigation goal specified by the “number of smolts released” or the “number of hatchery-origin adult recruits” may be the first step by which success can be measured. However, mitigation goals - by themselves - do not explicitly specify or quantify benefits, particularly in terms of harvest, conservation, or other potential benefits (e.g., research, education, cultural). The Review Team believes that realized benefits need to be the primary measures of success, not attainment of a “mitigation goal”, such that benefits are maximized while minimizing risks.*

Magic Valley Fish Hatchery B-run steelhead

2. **Comment:** Tribal members currently harvest a small component of the B-run steelhead returning to Squaw Creek and a large component of the B-run steelhead returning to the lower East Fork Salmon River. ... We are not supportive of eliminating this program without some other program being created. We believe the current program should be transitioned to developing a locally adapted B-run steelhead [program] in the lower East Fork Salmon River or transitioning the B-run program to increase the A-run endemic stock of East Fork Naturals. We also recommend that a new weir be constructed in the lower East Fork Salmon River to accomplish this transition. The release of smolts at Squaw Creek should be transitioned to the East Fork Salmon River.

¹ Written comments provided May 1, 2009 by Alonzo Coby, Chairman of the Shoshone-Bannock Tribes.

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Review Team Response: *The Team's recommendations are consistent with the Tribes' comment. Based on the 2008 Annual Operating Plan (AOP) for the Salmon River, approximately 575,000 Dworshak B-run steelhead are imported annually from the Clearwater River basin and released in the upper Salmon River, with approximately 325,000 and 250,000 yearling smolts released each year into the East Fork Salmon River and Squaw Creek/Pond, respectively. [Note: An additional 315,000 Dworshak B-run steelhead smolts are released into the Little Salmon River.] The continued release of imported fish creates several biological risks and prevents development of a locally-adapted hatchery population that would, most likely, increase smolt-to-adult return rates (SARs) and harvest benefits substantially. The Team also concluded that the Squaw Creek facility and location – both in its current state and potential future states following upgrades - are most likely incapable of returning sufficient numbers of adults for developing a localized hatchery broodstock of a size needed to meet comanager goals for the upper Salmon River. The Team has concurred with comanagers that construction of a weir in the lower reaches of the East Fork Salmon River, explicitly for the purpose of collecting broodstock from among returning adults, would have a much higher probability of achieving broodstock goals and would also reduce risks to natural populations. The question then becomes, "What should comanagers do in the interim until a weir can be designed, approved, funded, and constructed in the lower East Fork Salmon River?" The Team suggested, as an alternative to immediate termination of the Dworshak B-run program, the release of Dworshak B-run steelhead at the Pahsimeroi Fish Hatchery with the specific goal of trapping returning adults for developing a locally-adapted hatchery population for the upper Salmon River. Local hatchery stocks of A-run steelhead in the upper Salmon River were initially developed at the Pahsimeroi FH by a similar approach from fish imported from the Hells Canyon region of the Snake River. This potential B-run steelhead program at Pahsimeroi Hatchery could then be transferred to the East Fork Salmon River after construction of a weir there at some future date. A new weir in the East Fork Salmon River would also allow protection and enhancement of the natural population upstream of the weir via expansion of the existing "East Fork Naturals" hatchery program. The Team thus envisions four, locally adapted hatchery steelhead populations for the upper Salmon River: Pahsimeroi Hatchery A-run steelhead, Sawtooth Hatchery A-run steelhead, East Fork or Pahsimeroi Hatchery B-run steelhead, and an expanded East Fork "Naturals" program. Comanagers would then have to prioritize the sizes and rearing spaces for each of those four hatchery stocks of steelhead based on management goals and existing facilities. [Note: The Team understands that IDFG intends to release approximately 95,000 tagged but unclipped Dworshak B-run steelhead smolts (progeny of adults returning to Squaw Creek) from Pahsimeroi Fish Hatchery in 2010 to initiate development of a localized broodstock for the upper Salmon River.].*

Magic Valley Fish Hatchery A-run steelhead

3. **Comment:** The [mainstem] Salmon River releases of A-run steelhead at Red Rock, Lemhi Hole, Colsten Corner, Tunnel rock, McNabb Point, and Pahsimeroi River provide little to no benefit for Tribal fisherman. ... The releases of A-run steelhead in Yankee Fork, Valley Creek, and Slate Creek have been consolidated to the Yankee Fork Salmon River, where the Tribes will elect to establish a locally adapted A-run steelhead program. The release of A-run steelhead in the Yankee Fork should be increased since both treaty and non-treaty fishers will have ample opportunity to encounter these fish. The [mainstem] Salmon River releases should be transitioned to areas where adults can be captured by permanent weir structures.

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We recommend transitioning the [mainstem] Salmon River releases to Sawtooth Fish Hatchery, Yankee Fork Salmon River, and/or East Fork Salmon River. ... To effectively operate the Yankee Fork steelhead program, the HRT should recommend installing a permanent weir. This would allow the Tribes to capture returning adult steelhead and develop a locally adapted stock.

Review Team Response: *In general, the Team concurs with the perspectives of the Shoshone-Bannock Tribes. As a general principle, the Review Team is opposed to the release of hatchery-origin fish into mainstem river areas where returning adults that escape fisheries cannot be recaptured and, thus, potentially spawning with natural populations. The inability to recapture returning adults decreases potential benefits while, at the same time, increases risks to natural populations. Many of the Team's recommendations in this review are focused on changes in the release locations and/or broodstock sources that would potentially increase benefits and/or reduce risks. Consequently, in response to the comment presented here by the Shoshone-Bannock Tribes, the Team has added two new recommendations under the Sawtooth FH A-run Steelhead program: (1) Develop a Hatchery and Genetic Management Plan, or other type of management plan, for steelhead in the Yankee Fork Salmon River where short-term and long-term goals – including specific objectives for achieving those goals - can be specified in terms of desired benefits (Recommendation SAI); and (2) Pending comanager and NOAA Fisheries approval, phase out the outplanting into Yankee Fork of juvenile smolts that are the progeny of adult steelhead returning to the weir at the Sawtooth Fish Hatchery and transition towards developing a new localized broodstock and hatchery program of A-run steelhead for the Yankee Fork Salmon River. Implementation of this latter recommendation may require construction of a permanent weir structure on the Yankee Fork to trap adult steelhead for broodstock. Such a weir would also assist with broodstock collection for spring Chinook.*

East Fork Salmon River “Naturals” Steelhead

4. **Comment:** We want to see this program increased in the future. The productiveness of the program will be realized with the addition of a permanent weir in the lower East Fork Salmon River.

Review Team Response: *The Team's recommendations are consistent with this comment from the Shoshone-Bannock Tribes (see response to comment #2 above).*

Sawtooth FH A-run Steelhead

5. **Comment:** Our recommendation is to continue to utilize Sawtooth Fish Hatchery to provide broodstock for releases of A-run steelhead at this facility [Sawtooth Fish Hatchery].

Review Team Response: *The Team's recommendations are consistent with this comment. However, the Team now recommends the development of separate trapping facilities and broodstock for the Yankee Fork Salmon River, consistent with Comment #3 of the Shoshone-Bannock Tribes, pending comanager and NOAA Fisheries approval.*

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Sawtooth FH Spring Chinook

6. **Comment:** We have serious concerns with the HRT not modeling any of the alternatives to meet the harvest or conservation goals. Rather the HRT modeled the program based upon how many smolts the facility is capable of producing. This creates a flawed assessment of the program, which by no means will ever meet the defined goal.

Review Team Response: *The HRT has now modeled three alternatives for the current spring Chinook program at Sawtooth FH (Table A54, Appendix A). Those analyses indicate that neither the current program nor the proposed alternatives would achieve the current LSRCP mitigation goal of returning, on average, 13,355 adult spring Chinook upstream of Lower Granite Dam. That inability to meet the LSRCP mitigation goal is due to a very low mean smolt-to-adult returns (SARs) of only 0.13% with a mean recruit-per-spawner of only 2.0 adults per adult spawned in the hatchery (parameter values used by the HSRG). The Team did recommend changes in several fish culture practices for Sawtooth Hatchery Spring Chinook that are expected to increase post-release survivals and smolt-to-adult return rates, but those changes – by themselves – are not expected to increase adult return rates to the level necessary for achieving the LSRCP mitigation goal (approximately a 7 to 10 fold increase in SARs would be required). A small integrated program - up to a maximum of 200,000 smolts - would be capable of reducing demographic risks to the Upper Salmon River MPG (thereby conferring a conservation benefit), but achieving a significant harvest benefit may be difficult without significant increases in post-release survivals. Another potential impediment to achieving a harvest benefit, even if SARs were to increase significantly, may be management restrictions on incidental harvest of natural-origin fish in fisheries targeting hatchery-origin fish. Our AHA modeling adopted the population parameters obtained by the HSRG which showed terminal harvest rates on natural and hatchery-origin spring Chinook of 8% and 10%, respectively. Increasing the harvest rate on hatchery fish without increasing the harvest rate on natural fish could potentially contribute to achieving the desired harvest goal irrespective of the LSRCP mitigation goal. In this context, the Review Team places greater scientific priority on achieving realized harvest and conservation benefits rather than simply achieving a mitigation goal (See also response to Comment #1 above). [Note: Comment #6 from the Shoshone-Bannock Tribes was received on the draft report before the results of the AHA analyses in Appendix A had been completed.]*

7. **Comment:** The program was initially developed to have three primary release locations: 1) Sawtooth FH; 2) East Fork; and 3) Valley Creek. The HRT must ensure Sawtooth FH meet its defined harvest goal and provide recommendations for meeting conservation goals. The HRT should model the alternatives to meet the original LSRCP adult return goal as Sawtooth, East Fork, and Valley Creek of 11,310, 6,090, and 2,045 [adult Chinook], respectively. As stated in the document, the East Fork program was eliminated and Valley Creek component was never implemented.

Review Team Response: *While the Team did not provide specific alternatives for spring/summer Chinook in the East Fork Salmon River and Valley Creek components of the program, we did include recommendations that address those potential release sites in our review. Recommendations SA4 and SA25 requests that co-managers reassess the East Fork Salmon River component of the spring Chinook program in association with establishing*

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conservation and harvest mitigation goals and, if implemented, provide adequate facilities in the East Fork Salmon River to meet those goals. SA5 recommends reassessing the current approaches for meeting the conservation and harvest mitigation goals of the program given the current conditions affecting survival of salmon in the upper Salmon River Basin, which would include the East Fork Salmon River and Valley Creek. Development of a new spring Chinook program in the Yankee Fork, including construction of a new weir to facilitate broodstock collection, would be expected to contribute further towards meeting LSRCP mitigation goals while, at the same time, providing terminal fishery benefits in the upper Salmon River. However, as noted in our response to Comment #6 above, achieving LSRCP mitigation goals will, most likely, not be possible without significant increases in smolt-to-adult return rates (SARs). For example, releasing one million smolts annually in Valley Creek is expected to return, on average, less than 1,800 adults back to the Snake River based on a mean recruit-per-spawner of 2.5 adults (Table A53, HRT Alternative B; Appendix A). Similar conclusions can be drawn for new programs in Yankee Fork and the East Fork. [Note: Potential hatchery program alternatives for the East Fork Salmon River, Yankee Fork, and Valley Creek are presented in Tables A51, A52, and A53, respectively. These analyses were completed in response to Comment #7 above from the Shoshone-Bannock Tribes.]

- 8. Comment:** Considering the current survival rates for hatchery-origin Chinook salmon released at Sawtooth FH, we believe the HRT recommendation must include expanding this facility to realize the adult return goals.

Review Team Response: *Although the Team did consider the current low smolt-to-adult survival rates (SARs), the Team explicitly did not recommend expansion of existing facilities to compensate for those low survivals. The Team believes low SARs for spring Chinook in the Salmon River, and for the Snake River in general, are due primarily to out-of-basin factors associated with habitat and hydropower effects (e.g., in the mainstem Columbia and Snake rivers) and not to factors intrinsic to the hatchery programs or upper basin habitats, although the Team believes improvements in those latter two areas are possible. Expanding existing facilities beyond their design capabilities creates additional problems associated with water availability and effluent. The Team also tried to balance our understanding of co-manager harvest and mitigation goals with conservation goals when we developed our recommendations. The “stepping stone” approach that utilizes two broodstocks, instead of one broodstock, was the Team’s preferred “alternative” to balance harvest and conservation goals for upper Salmon River population of spring Chinook, although the total number of fish released would need to be reduced by approximately 25% (Tables A54 and A55, HRT Alternative B; Appendix A). The Team further believes that expansion of existing hatchery facilities to meet a mitigation goal will not address the underlying problems contributing to the lower than desired SARs. Nevertheless, expanding existing rearing facilities may be a comanager solution if simply meeting the LSRCP numeric mitigation goal is the highest priority. On the other hand, the Team focused more holistically on increasing overall benefits while reducing risks rather than focus strictly on returning a desired number of adult fish upstream of Lower Granite Dam.*

- 9. Comment:** We also believe the HRT should recommend initiating the East Fork program and supporting the Tribes Chinook salmon supplementation program in the Yankee Fork as a

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surrogate for Valley Creek. To effectively operate the Yankee Fork Chinook salmon supplementation program, the HRT should recommend installing a permanent weir. This would allow the Tribes to capture returning adult Chinook salmon and develop a locally adapted stock.

Review Team Response: *The Team recommended continuation of the current Yankee Fork spring Chinook program with implementation of all recommendations, including development of a localized broodstock that may require construction of a weir (recommendation SA7 was modified accordingly). The Team believes that the proposed management strategies of the Shoshone-Bannock Tribes and IDFG in the Yankee Fork Salmon River are sound approaches for developing and maintaining terminal harvest opportunities in the area. The program is expected to transition to a locally adapted broodstock as collection facilities and returning adult fish become available. The Team further recommended that the comanagers reassess the East Fork Salmon River portion of the program in association with establishing conservation and mitigation goals and objectives (see response to Comment #7 above). The Team also recognized that the existing weir on the East Fork may not be adequate for establishing a successful spring Chinook program and suggested that the construction of a new weir in the lower East Fork Salmon River would most likely be necessary to achieve other comanager goals (e.g., establishment of a localized B-run steelhead program in the East Fork Salmon River).*

- 10. Comment:** The conservation goal for the Upper Salmon River is 1,000 adults and Yankee Fork is 1,500 adults. We are in agreement with the methodology of developing broodstocks for these supplementation programs, but the HRT must model the conservation programs to meet the desired conservation goals.

Review Team Response: *The Review Team has now modeled potential hatchery programs for Yankee Fork and the Upper Salmon River (Tables A52 and A54, respectively). The Team was unable to achieve a modeled mean return of natural-origin fish that exceeded a few hundred adults in Yankee Fork or approximately 600 adults in the Upper Salmon River. Those lower-than-desired returns of natural-origin recruits to Yankee Fork and the Upper Salmon River are due to low productivities ($r = 1.45$ and 1.80 , respectively) and low adult-recruit capacities ($C = 600$ and $2,000$ adults, respectively) as parameterized in the Beverton-Holt model under current conditions.*

- 11. Comment:** The Tribes understand the conservation programs will limit the ability of the hatchery to meet the defined harvest goal, therefore, we propose the conservation goal be considered as part of the overall goal of 19,445 adults.

Review Team Response: *The Team agrees that meeting conservation goals in the upper Salmon River, which includes maintaining natural populations that are ideally self-sustaining, may limit the ability of the hatchery program to meet harvest goals in the near-term, at least until smolt-to-adult return rates (SARs) and natural productivity increase to self-sustainable and viable levels. The 19,445 adult return goal (LSRCP) for the upper Salmon River was to mitigate for 48% hydrosystem mortality by replacing the predicted loss of natural-origin fish with hatchery-origin fish; the mitigation goal was not intended to be the total escapement goal for the upper Salmon River (i.e., 52% of the adult returns were intended to be maintained by*

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natural reproduction). In this context, the desired conservation and harvest benefits of the mitigation programs need to be described because both sets of benefits can contribute to mitigation goals. The Team agrees also that co-managers need to define both short-term and long-term goals and objectives that integrate both the conservation and mitigation programs for the upper Salmon River.

McCall FH Summer Chinook

- 12. Comment:** The adult return goal for McCall FH is 8,000 adult Chinook salmon over LGD [Lower Granite Dam]. We have serious concerns with the HRT not modeling the alternatives to meet the harvest or conservation goals.

Review Team Response: The HRT has now completed modeling analyses for summer Chinook in the South Fork Salmon River (Tables A42 and A43, Appendix A). None of the modeled scenarios was able to achieve a mean return of 8,000 adult summer Chinook back to the terminal areas upstream of Lower Granite Dam (Hatchery, Habitat, Terminal Harvest). The mean number of hatchery-origin adult recruits back to the terminal areas for each modeled scenario was approximately the following: Current program: 5,300 adults. HRT Alternative 2: 2,200 adults. HRT Alternative 4 (the preferred short-term alternative): 4,600 adults. HRT Alternative 5 (same as “HSRG Solution”): 4,900 adults. The HRT did not favor the Current program (or HRT Alternative 1) because it largely overlooks conservation goals and creates significant risks to the naturally-spawning population. The HRT favored Alternative 4 over Alternative 5 (the HSRG solution) because of the significantly greater logistic difficulties of implementing the latter versus the former, thus creating substantially greater uncertainties under Alternative 5 regarding feasibility and achievement of goals.

- 13. Comment:** The HRT recommended alternative 5 and in our opinion this is a viable option with the following consideration. As proposed in *US v Oregon*, a supplementation program will be established in the South Fork Salmon River, separate and apart from the Tribes eggbox program or the harvest mitigation program. Our conservation objective for the South Fork Salmon River is to achieve 1,000 natural-origin adults returning annually, consistent with the TRT viable population threshold. The HRT should model the conservation program to maintain a spawning component of 1,000 adults and returning 8,000 adults for harvest and broodstock needs.

Review Team Response: The Team actually recommended Alternative 4 which would integrate the hatchery stock with the naturally spawning population upstream of the weir (Stolle Meadows spawning aggregation) as opposed to attempting to integrate the hatchery stock with the entire S.F. Salmon River population (Alternative 5). None of the modeled scenarios was able to achieve both the conservation goal of returning 1,000 natural-origin adults back to S.F. Salmon River and 8,000 hatchery-origin adults back to the terminal areas while, at the same time, maintaining $PNI > 0.5$ for the naturally spawning population (see Response to Comment # 13 above). For example, simply increasing the total number of hatchery-origin smolts released into the South Fork Salmon River from 1.0M to 1.5M smolts under the current management scenario ($pNOB = 0$; $PNI = 0$) would ultimately result in a predicted mean return of approximately 1,100 NOR recruits back to the S.F. Salmon River

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and 8,000 HOR adults back to the terminal areas based on our AHA analyses (not shown in Appendix A). However, that scenario also results in a mean of 3,000 HOR adults spawning naturally with 1,100 NOR recruits to produce the 1,100 NOR recruits one generation later ($R/S \approx 0.27$). Both the Review Team and the HSRG concluded that such a management scenario, while meeting LSRCP mitigation goals, was not consistent with conservation or recovery goals for summer Chinook in the S.F. Salmon River. All of the modeled alternatives in Table A42 attempt to maximize total adult returns of both NOR and HOR adults while maintaining $PNI > 0.5$. Achieving both conservation and mitigation goals in support of harvest benefits clearly requires compromises. In this context, summer Chinook in the S.F. Salmon River illustrate the dilemma of trying to meet both conservation goals and mitigation goals simultaneously where the number of hatchery-origin fish spawning naturally cannot be controlled or is significantly inhibited by logistic constraints.

- 14. Comment:** The Tribes understand the conservation program will limit the ability of the hatchery to meet the defined harvest goals, therefore we propose the conservation goal be considered as part of the overall goal of 8,000 adults.

Review Team Response: *See response to comment # 11. The rationale and perspectives expressed in response to comment #11 apply here also.*

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Idaho Department of Fish and Game²

General Comments

- 1. Comment:** Regarding the Service's request for comments on the current draft report (for four Idaho hatcheries), it should be noted that while we are not providing comments on the specific preferred alternatives or many of the individual recommendations provided by the HRT, this does not imply that the Idaho Department of Fish and Game agrees with and would implement the HRT's preferred alternatives of all of the recommendations. There exist many potential scenarios for implementing ideas and concepts of the HRT in our programs based on the comprehensive lists of recommendations and alternatives provided in the HRT report. As we develop Hatchery and Genetic Management Plans and implementation plans for our programs, we will take into consideration combinations of recommendations and alternative provided by the HRT that we feel will help us meet our specific management objectives. ... It is very important to the Idaho Department of Fish and Game that Idaho's hatchery programs continue to be operated with the intent of meeting mandated mitigation obligations. ... Thus the Idaho Department of Fish and Game will use the HRT reviews for guidance, in addition to other hatchery reviews, to develop Hatchery and Genetic Management Plans for achieving program objectives while meeting the intent of the FCRPS [Federal Columbia River Power System] Biological Opinion hatchery strategies.

Review Team Response: *The Team agrees that the preferred alternatives listed in the report are not the only viable alternatives for co-managers to consider for meeting mitigation, harvest, and conservation goals. The Team recognizes that achieving LSRCP mitigation goals is extremely important to comanagers to replace fish losses resulting from the hydrosystem. However, simply achieving mitigation goals does not guarantee, nor necessarily prescribe, quantifiable benefits, nor does the achievement of a mitigation goal necessarily consider the risks of doing so. The Team's intent is to identify issues that (a) impede achievement of measurable benefits (e.g., harvest, conservation, research, education, or cultural benefits) and/or (b) increase risks to the environment, people, or the fish themselves. For example, the desirability of achieving a numeric mitigation goal may be questioned if measurable benefits are not realized, and those actions pose significant biological risks to natural populations or other species. Nevertheless, the Team acknowledges that our recommendations are just that, and comanagers may have defensible justification for not implementing many of our recommendations.*

- 2. Comment:** We are providing comments on [specific] recommendations that we feel were developed based on misunderstandings or misinformation.

Review Team Response: *The Team welcomes corrections to our assumptions and interpretations. The revised report reflects those corrections.*

² Written comments provided May 29, 2009 by Peter Hassemer, Anadromous Fish Manager for IDFG.

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Specific comments

3. Comment:

Issue CW12: *Currently, there is no monitoring and evaluation of post-release survival for B-run steelhead reared at Clearwater FH and released into various locations in the Clearwater Basin. A PIT tag program was established in 2008 to assess outmigrant survival of Dworshak NFH B-run steelhead reared at Clearwater FH to lower Granite Dam. Portions of the broodyear 2007 steelhead from each release group are PIT tagged. The PIT tags can be used to compare post-release survival and transit time of the Clearwater FH outplants from their release site to lower Granite Dam versus the on-station releases of B-run steelhead from Dworshak NFH.*

IDFG Response- Since 1993, IDFG has been monitoring the post-release survival for B-run steelhead reared at Clearwater Hatchery with the use of PIT tags. The program established in 2008 is actually an expansion of the existing program that will allow the estimation of adult returns through a significant increase in the number of fish released with PIT tags.

Review Team Response: *The report has been modified in response to IDFG's comment and clarification.*

4. Comment:

Issue MV20: *The primary reason for using Dworshak B-run steelhead stock in the Salmon River is to provide large trophy steelhead to be included in the sport harvest. Estimated returns of B-run steelhead to the upper Salmon River for brood years 2002 and 2003 showed a much higher percent return of 2-Ocean fish (79%-93%) than Sawtooth A-run steelhead returns (21%-45%). However, the size distribution of Dworshak B-run steelhead returning to the Salmon River is unknown. In addition, preliminary data indicate that Dworshak B-run steelhead have a much lower return rate compared to A-run steelhead released into the Upper Salmon River basin. SAR's for BY's 1992 through 1999 Dworshak B-run steelhead reared at Magic Valley FH and released into the Little Salmon River and the upper Salmon river averaged 0.10% (range 0.00% - 0.19%) and 0.11% (range 0.02% - 0.38%), respectively. Dworshak NFH B-run steelhead reared at Magic Valley FH and released into the East Fork and upper Salmon River averaged 0.19% (range 0.06% - 0.30%) for BY's 1993- 1997 and 0.19% (BY 1999), respectively. Pahsimeroi and Sawtooth stock A-run steelhead reared at Magic Valley FH and released into the upper Salmon River averaged 1.22% (range 0.25% - 2.24%) for BY's 1992-1999. Return rates for BY 2002 and 2003 releases in the Salmon River showed similar differences between Sawtooth A-run steelhead (0.90%-0.56%) compared to Dworshak B-run steelhead (0.31%-0.16%), however return rates for upper Salmon River B-run steelhead were much higher (0.73% -0.27%) for the two brood years. Based on the available information, the benefits of the upper Salmon River B-run steelhead appear to be much greater than Dworshak B-run steelhead although returns rates are not as high as Sawtooth A-run steelhead.*

IDFG Response- There are several references from the HRT that there is a lack of information demonstrating a benefit of the B-program in the upper salmon with regards to SARs, contribution to fisheries, and length-at-age. All of this information is available in hatchery and harvest reports. In 1998 an effort to create a locally adapted B-run stock in the upper Salmon River was initiated at Squaw Creek. [Review Team note: See Appendix D and full comment from IDFG regarding the B-run steelhead program.]

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Review Team Response: *The Review Team modified the issue description (now Issue MV21) utilizing the data provided by IDFG. The data summarized by IDFG in their comment letter (Appendix D) illustrates an important general principle emphasized by the Review Team in its reviews: locally-adapted hatchery broodstocks are expected to have significantly higher smolt-to-adult return rates (SARs) than outplanted or transferred fish. Local broodstocks are expected to increase harvest and/or conservation benefits while, at the same time, reduce risks to natural populations via increased homing fidelity and the potential recapture of adult fish that escape fisheries. Consequently, the Review Team recommended termination of the existing B-run steelhead program in the upper Salmon River because it relies annually on the transfer of hundreds of thousands of eggs and fish from Dworshak NFH in the Clearwater River basin. In short, the Team concluded that the benefits of that program – based on data provided by IDFG - do not outweigh the risks. On the other hand, the Team understood – based on those same data – that the second-generation progeny of Dworshak B-run steelhead returning to the upper Salmon River (USALB fish in Table 2 of the IDFG Comments, Appendix D) had significantly higher SARs than their first-generation parents that had been transferred and outplanted from the Clearwater River. The Team also understood that those annual transfers had been ongoing since 1988 without development of a self-sustaining localized broodstock. Nonetheless, the B-run steelhead program is a high priority for IDFG because of angler preferences to catch “large steelhead.” The Shoshone-Bannock Tribes also consider the B-run steelhead program important for tribal fisheries, particularly in the East Fork Salmon River. Based on these circumstances, history, and available data, the Team noted that it would support the development of a local hatchery stock of B-run steelhead for the Salmon River – derived from the Dworshak B-run hatchery stock – if a suitable location within the upper Salmon River could be developed. The Team concluded, for a number of reasons, that Squaw Creek is not a suitable location. In the absence of a suitable weir in the East Fork Salmon River, the Team suggested that Pahsimeroi Fish Hatchery might be the best location currently available for initiating development a localized hatchery broodstock of B-run steelhead in the upper Salmon River. The Team understands that IDFG plans to release, at Pahsimeroi FH, approximately 95,000 (tagged but unclipped) Dworshak B-run steelhead that are progeny of adults returning to Squaw Creek, consistent with the Team’s recommendation.*

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5. Comment:

Issue MV22: *Currently, monitoring and evaluation of the physiological effects of transport and post-release survival of steelhead in the Salmon River do not occur. Transport over a high elevation pass (>8,000 feet) and water temperature differences between the tanker truck and Salmon River release sites creates uncertainties regarding the physiological ability of released fish to survive the first 24-48 hours after release. A PIT tag program was established in 2008 to assess outmigrant survival of Magic Valley FH A and B-run steelhead to lower Granite Dam, but those studies are not designed to evaluate physiological stress and immediate post-release survival at the release sites. Also see issue and recommendation MV14.*

IDFG Response- Similar response to CW12. We have been monitoring post release survivals since 1992 via PIT tags. Over that time period, estimated survival of fish released from Magic Valley have been similar to groups released directly from the rearing facilities even though migration distance is significantly greater for the Magic Valley releases relative to the Clearwater and Dworshak releases.

The program established in 2008 is actually an expansion of the existing program that will allow the estimation of adult returns through a significant increase in the number of fish released with PIT tags.

Review Team Response: *This issue was addressed by the Review Team in its review of Hagerman NFH (HA9 and HA35). In that report, the Review Team recommended continued assessment of post-release survival of transported fish in the Salmon River via PIT tags. New data supplied recently by IDFG to the Review Team indicate that post-release mortality immediately after release into the Salmon River may not be a significant issue at the present time. We have modified our issue and recommendation (now MV23) accordingly.*

6. Comment:

Issue MV28: *Available data for Dworshak NFH B-run steelhead released into the Salmon River, but reared at Magic Valley FH, suggest that smolt-to-adult return rates are only 10-15% of those for “A-run” steelhead released into the Salmon River.*

IDFG Response- As outlined in the response for MV20 above, SARs for locally adapted upper Salmon River B-run releases are more comparable to those of the A-run fish. We are aware that first generation Dwor-B releases do not perform nearly as well as the upper Salmon River A-run releases. That is one of the main reasons we set out in 1998 to establish a locally adapted upper Salmon River B-run of steelhead.

Review Team Response: *See Review Team response to Comment No. 4 above.*

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7. **Comment:**

Issue MV47: *The tagging of A-run steelhead reared at Magic Valley FH does not appear to be consistent among brood years. In some years, A-run steelhead are given coded wire tags (coded-wire tags) with unique codes according to release sites. In other years, they are not.*

Recommendation MV47: Assess tagging practices to assure all releases are marked to adequately assess releases to meet all management objectives. For example, apply coded-wire tags with different tag codes according to broodstock origin (e.g., Sawtooth vs. Pahsimeroi Fish Hatcheries), rearing location (e.g., Hagerman NFH vs. Magic Valley FH), and release location (e.g., Sawtooth FH weir vs. Yankee Fork). Alternatively, PIT tags would accomplish the same task if sufficient numbers of PIT tags were applied to assess adult returns, contributions to harvest, and return rates to release locations.

IDFG Response- Release of fish with CWTs are always given unique codes relative to release sites. It is true that not all release sites have fish with CWTs. Wired fish at one release site may be used to represent un-wired fish at another release site to estimate harvest contribution and survival. These represented fish will have come from the same stock and rearing facility and will be released in geographically similar locations.

Review Team Response: *It was unclear to the Team from looking at existing reports how coded-wire tags were applied to represent all release groups from Magic Valley FH to assess return rates and contributions to harvest from fish reared at different facilities and released at different locations.. Issue and recommendation MV47 have been edited in response to the clarifications provided here by IDFG.*

Clearwater Fish Hatchery Staff, Idaho Department of Fish and Game³

Summer Steelhead (B-run)

1. **Comment:** Risks paragraph states that IDFG management plan creates a conflict between harvest and recovery of natural populations. Are they sure natural spawning is not currently occurring at maximum levels?

Review Team Response: *This issue relates to the continued outplanting of Dworshak B-run steelhead smolts in the upper tributaries of the S.F. Clearwater River (e.g., at Crooked River, Red River, etc.). The intent or goal of those releases is not clear: Is the intent to reestablish naturally spawning populations that were extirpated historically by the blockage at Harpster Dam, or is the intent to support harvest in those upper tributaries? Science-based strategies for using hatcheries to support harvest, in terms of maximizing benefits and minimizing risks, will not be the same strategies as those necessary for reestablishing naturally spawning populations. The absence of well-defined harvest or conservation goals with respect to the number of fish released at each location is confusing, thereby creating conflicts (i.e. risks)*

³ Written comments provided May 28, 2009 by Tom Rogers, Anadromous Fish Manager for IDFG.

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between perceived goals and release strategies. A management plan for reintroducing steelhead to the upper South Fork Clearwater River and reestablishing self-sustaining natural populations may be desirable to resolve those conflicts if, indeed, restoring viable natural populations a comanager goal. In this context, there should be a clear delineation between the release of fish for conservation purposes (e.g., reestablishment of natural populations) and the release of fish to support harvest. Clearly, the outplanting of Dworshak B-run steelhead in the lower Clearwater River at the “Red House” release site is strictly for the purpose of supporting harvest in that regions, but the specific purpose and goals of releasing fish in the upper watershed are not clear or well-defined. Similar conflicts exist for spring Chinook within the Clearwater River, but on a larger scale (see the Review Team Response to IDFG Comment # 6 below).

2. **Comment:** Recommendations for current program paragraph states we should develop one or more localized broodstock in the South Fork of Clearwater. How soon do they expect this to be implemented and who will fund the operations? Currently adult returns to our adult weirs are so low that this idea is not practical. Alternative locations for this project will be cost prohibitive.

Review Team Response: *The Team recognizes that development of localized broodstock in the S.F. Clearwater River will require a feasibility assessment, planning, and likely new infrastructure to meet defined goals and objectives of the program. If conservation and harvest of S.F. Clearwater steelhead are co-manager goals, then plans and estimated costs should be developed to seek funding through the appropriate sources (LSRCP/COE/BPA). The Service has committed to work with the states and tribes within the existing regional processes (US v OR, LSRCP, hydrosystem BIOP, etc.) to seek funding to implement programs that meet defined conservation and harvest goals and objectives. On the other hand, the Team questions the rationale and benefit of outplanting steelhead smolts at locations and facilities (e.g., Red River, Crooked River) where the number of returning adults is not sufficient to potentially initiate local broodstocks. In particular, the short term and long-term goals of outplanting steelhead smolts in the upper South Fork Clearwater River have not been adequately defined in terms of quantifiable benefits (see Response to Comment #1 above).*

3. **Comment:** Alternative to current program paragraph states that we should rear B-run steelhead for the Little Salmon River instead of Magic Valley and Hagerman National hatcheries. What difference would this make it would still be transporting out of basin stock raised out of the basin hatchery to the same plant site?

Review Team Response: *There are several pros to rearing steelhead for the Little Salmon River at Clearwater FH versus Magic Valley FH and Hagerman NFH, as listed in Alternative 4 for the Clearwater B-run steelhead program. The pros include: eliminates the risk associated with transporting eyed-eggs from Clearwater FH to the hatcheries in Magic Valley; reduces the transportation distance of the smolts for release; and, most importantly, addresses difficulties associated with rearing Dworshak B-run steelhead at Hagerman NFH and Magic Valley FH, as highlighted by the Team in the report. The available data suggest that Dworshak B-run steelhead are not well-adapted physiologically to the water and/or rearing conditions at Hagerman NFH and Magic Valley FH compared to the water and*

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rearing conditions at Dworshak NFH and Clearwater FH. In contrast, A-run hatchery steelhead released in the Salmon River, which were derived ancestrally from fish native to the Upper Snake River above Hells Canyon Dam, do not experience the same fish health issues at Hagerman NFH and Magic Valley FH as experienced by B-run steelhead from the Clearwater basin. For example, one factor that may reduce the fitness of the B-run steelhead in the Magic Valley may be the difference in water chemistry between the Clearwater Basin which is soft (~ 14ppm total hardness) and the spring water in the Magic Valley which is hard (~140 ppm for Hagerman NFH and ~250ppm for Magic Valley FH). The hard water in the Magic Valley may compromise the fish's physiology and its subsequent health. Additional explanation of the Team's recommendation has been added to report.

- 4. Comment:** The last statement in this paragraph again addresses the localized broodstock idea. It now specifically identifies the Red River and Crooked River facilities. We have stocked steelhead at these sites since 2001. The adult returns have been minimal and not at a level that could be reasonably used to start a localized broodstock.

Review Team Response: *The Review Team identified Red River and Crooked River as “potential” sites to develop localized broodstocks for the South Fork Clearwater River since the sites are already established. Fishery management or release strategies may need to be adjusted to ensure return of sufficient numbers of adults to the most appropriate sites.*

Spring Chinook

- 5. Comment:** Recommendations for the current program [CW35] states that we should construct shade covers for the adult ponds to provide temperature relief from warm water temperatures during the summer. This will not solve the problem. The temperature of the water coming into the intake at times exceeds 70 degrees Fahrenheit. Introducing well water is the only way to address this problem.

Review Team Response: *The Review Team's recommendation has been modified by changing “provide temperature relief” to “reduce stress”. The shade covers are to help reduce stress to the fish associated with congregating at high effective densities in shaded areas, particularly during the summer months. The recommendation has also been modified to include investigating the construction of a well that would provide temperature relief and allow for longer-term holding of adults.*

- 6. Comment:** Alternatives to the current program paragraph states HRT recommends abandoning the harvest goal of a sport and tribal fishery and concentrate all effort on reestablishing naturally spawning Spring Chinook in the Lochsa, Selway and South Fork Clearwater Rivers. This is absolutely unreasonable and is in direct opposition to our LSRCP mitigation goals.

Review Team Response: *The Team's recommended alternative does not abandon harvest goals for sport and tribal fisheries in the Clearwater River. Rather, the Team's*

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recommendations are intended to decouple actions that appear to confound harvest and conservation goals for spring Chinook at release sites in the upper South Fork Salmon and Selway rivers. Clearly, the reintroduction of spring Chinook to the Clearwater River is a high comanager priority. However, there appears to be little distinction between objectives designed to support harvest goals versus objectives designed to support conservation or natural population goals. For example, is the release of juvenile spring Chinook in the Selway River intended to (a) support harvest or (b) reestablishment of naturally spawning populations? Coupled with this confusion and lack of clearly defined goals is the absence of a management plan for reintroducing spring Chinook to the Clearwater River. The Annual Operations Plan explicitly states the number of fish to be released at each location, but the specific goal or intent of each of those releases is not identified. The Team concluded that releases intended to directly support reestablishment of naturally spawning populations need to be distinguished from those intended to directly support harvest. These recommendations are based on the Team's understanding of co-manager goals and objectives of re-establishing naturally spawning populations via natural spawning of hatchery-origin fish (i.e., supplementation) and meeting the mitigation for harvest responsibility. The Team's recommended alternative includes (a) the continued development of locally-adapted broodstocks for each of the three satellite locations; (b) a short-term goal of reestablishing naturally spawning population in Clearwater River tributaries consistent with ecological and genetic principles, and (c) continued release of hatchery-origin spring Chinook for harvest downstream from those natural spawning areas. In other words, the short-term goal here would be establishment of localized broodstocks that are properly integrated with natural populations in the respective tributaries where each of the three satellite facilities is located. After this short-term goal is achieved, then those programs could be "ramped up" via a "stepping stone" broodstock strategy, or other potential strategy, to provide fish for harvest. From the Team's perspective, the absence of a comprehensive management plan for reintroducing spring Chinook to the Clearwater River is a significant shortcoming that confounds comanager goals for reestablishing natural populations and supporting sustainable harvests. The Team believes it is possible to continue to provide harvest opportunities consistent with well defined conservation goals and objectives, but a detailed plan for doing so needs to be developed.

McCall Fish Hatchery Staff, Idaho Department of Fish and Game⁴

Spring Chinook

ASSESSMENTS

1. **Comment:** The 10th Bullet is not properly characterized. During the period of 1997-2004 there were no hatchery (AD-Clip) intentionally passed over the weir; only natural and supplementation. The percentages used are terming the supplementation fish as hatchery-origin and makes this confusing/ inaccurate.

⁴ Written comments provided May 28, 2009 by Tom Rogers, Anadromous Fish Manager for IDFG.

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Review Team Response: *The term hatchery-origin refers to fish that were the product of artificial spawning and reared in a hatchery regardless of their parentage (hatchery or natural-origin).*

2. **Comment:** The 14th Bullet is another confusing statistic used and is likely improperly characterizing the data. Is the 47% of known natural carcasses recovered based on total natural passed or is this based on all carcasses recovered that may have included natural, supplementation, and unintentionally passed reserve?

Review Team Response: *Based upon the information provided to the Team, the Team understands that 47% of the recovered carcasses represented natural-origin fish (i.e. fish that are the product of natural reproduction).*

3. **Comment:** The 15th Bullet has inaccurate information in it. It lists: “An average of 31% of the fish recycled (range 25%-38%) were harvested in the fishery and an average of <1.7% (range 3% - <1%) were recaptured at the South Fork Salmon River Weir.” During this time period recaptured recycled fish have returned as high as 38%. It also does not appear that tribal harvest was included in calculations.

Review Team Response: *The data the Team used for this bullet was taken directly from IDFG, Chinook Salmon Fishery on the South Fork Salmon River, Idaho reports for 1997, 2000, 2001, 2002, 2000, 2004, and 2005. The data only includes sport harvest estimates and does not include tribal harvest.*

4. **Comment:** The 22nd and 23rd bullets are no longer current. Natural fish passed upstream of the weir will not be injected with erythromycin and only ½ of the reserve fish retained as broodstock will be injected.

Review Team Response: *The report has been corrected in response to this comment.*

5. **Comment:** The 25th Bullet continues to be inaccurate. **No MS-222 is used at the SFSR Trap at any stage (trapping, holding or spawning) or at any time.**

Review Team Response: *The report has been corrected in response to this comment.*

RECOMMENDATIONS

6. **Comment:** Regarding Recommendation ML7b: “Discontinue the recycling of McCall FH summer Chinook to control the magnitude of hatchery-origin Chinook spawning naturally (pHOS) below the weir. These fish should be removed at the weir and provided directly to the tribes or other potential user groups (e.g. food banks, community).” - The explanation

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forming the basis for the HRT recommendation contains inaccurate information. During the period cited, recaptured recycled Chinook at the SFSR weir has been as high as 38%. It also appears that Tribal harvest has not been included in calculations.

Review Team Response: *See response to comment #3 above.*

7. **Comment:** Regarding Recommendation ML8: “Modify spawning protocol to better describe how the males are spawned and managed and improve record keeping so that it describes the number of males used more than once, how many times the males are used and what is done with males after they are used more than twice.” - The spawning protocol at the SFSR trap has been amended (beginning with BY09) to incorporate a 1-Male to 1-Female spawning ratio in which the male will be killed following milt collection.

Review Team Response: *The Team has noted this change in our revised report.*

8. **Comment:** Regarding Recommendation ML9 to terminate the erythromycin injections of adult summer Chinook passed upstream of the weir on the S.F. Salmon River. - Trapping protocols have been amended (starting with the 2009 return year) to eliminate the erythromycin injection of any natural-origin adult passed from the South Fork Salmon River Trap above the weir to spawn naturally.

Review Team Response: *The Team has noted this change in our revised report.*

9. **Comment:** Regarding Recommendation ML11: “Incubate eggs one female per tray or utilize some method of separating eggs from each female in a single tray. If BKD levels remain consistently low in the adults, reduce the number of females spawned.” - Given the limitations of incubation capacity at MCFH (maximum of 334 trays if top trays were used which isn’t a good idea; 308 trays is a more realistic maximum) and current production goals makes it impossible to incubate eggs as 1-female per tray. This could only be done by eliminating the incubation of eggs for the Shoshone-Bannock Tribe egg box program. If isolation dividers were added to incubation trays to reduce the number of BKD culls the IHOT standard of 8,000 eggs per tray would still be exceeded as the SFSR summer Chinook fecundity average is greater than 4,000 eggs/ female. Also, the example used for 2006 included both BKD high culls (71,500 eggs; 9 high BKD paired with 9 other females) and BKD Low culls (168,200 eggs from 46 females). The BKD low culls were done to reduce hatchery inventory levels to a “full production capacity” level. Due to holding space limitations and spawn timing concerns at the SFSR trap the hatchery staff does not anticipate the need for this level of BKD low culls in the future.

Review Team Response: *The Team recognizes the limitations on incubation space, but as a best management practice, individual females need to be incubated separately to operate an efficient BKD screening program. There are a number of possible solutions to accomplish separate incubation. However, reevaluating the number of females spawned to meet your*

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production goals is recommended (see the new Issue/Recommendation ML#). The report has been modified based upon this response]

- 10. Comment:** Regarding Recommendation ML13: “Since transportation of eggs or fish is a critical component of the program, standard operating procedures and contingency plans for transportation should be established and documented. The contingency plans should be reviewed annually with hatchery and transport staff.” - With the exception of routine smolt release, or a possible need for a fall release of marked parr, hatchery staff doesn’t anticipate any transportation of fish from station to station or transportation and release of fish off station. Routine smolt releases and potential parr release are addressed in the internal hatchery annual operation plan and the LSRCP annual operation plan for both SFSR SU and Johnson Creek SU. Routine transportation of eggs back to MCFH does not require any contingency plan. It is assumed that the Review Team must be describing the need for some fish movement plan in the event of some catastrophic failure. If so, no plan is in place and realistically would not be meaningful as such a catastrophic failure would not allow time to gather sufficient resources to provide for the large-scale transportation of fish or eggs off-station. If such a plan is deemed necessary it would be beyond the scope of the MCFH staff to develop.

Review Team Response: *The Team believes that the establishment of written standard operating procedures or best management practices for the “routine” transportation of fish or eggs provides all staff with clear guidance on critical procedures during a variety of situations. At the time the Team conducted their review and discussed this issue with MCFH staff, they did not describe the use of an “internal hatchery annual operation plan” that addressed this issue. The report has been modified based upon this comment.*

- 11. Comment:** Regarding Recommendation ML15: “Discontinue unguided visitor access through the nursery building and improve security in the building so that the risk of loss due to negligence, curiosity, vandalism, or disease transmission is reduced.” - It is beyond the scope of hatchery personnel to determine what level of risk should be considered acceptable. Currently, the facility is rather open to individuals but if directed the indoor rearing space could be locked down to prevent any unescorted visitor access. This action would eliminate all early rearing portions of the current self-guided tour. Design of the facility is such that no viewing windows looking into the early rearing space could be installed to allow visitors to observe fish rearing from a controlled location.

Review Team Response: *Based upon fish health concerns, visitors or other unauthorized personnel should not have unguided access to indoor culture facilities. The Team believes that the assessment of risks (negligence, curiosity, vandalism, or disease transmission) requires input at all levels. Certainly, the hatchery staff should play a critical role in this process because of their intimate knowledge of activities which pose risk. This process would also include fish health and upper management.*

- 12. Comment:** Regarding Recommendation ML18: “Repair the roof. During the winter and early spring, large accumulations of snow and ice hang through the openings in the metal roof

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of the rearing ponds. This has the potential to breakaway without warning which could injure employees working within the pond below.” - MCFH staff does not concur with the HRT recommendation. Typically hatchery staff would not be in the ponds when ice/ snow chunks may break off and fall into the ponds during the spring snow melt. However, if it did become necessary operations could minimize any risk by only working in the ponds in the morning prior to thawing conditions when ice chunks would fall into the ponds below. Compared to inherent risks of personnel working in a climate, that lends itself to icy conditions on hatchery grounds, throughout the winter months this issue is of lesser significance. Fish health is not the issue for the hatcheries desire to maintain openings in the roof over the ponds. Salmon being reared in the outdoor ponds benefit by the current configuration of having some of the overhead panels being removed. This provides needed shade (primarily due to the use of concrete pond bottoms) while still allowing for more natural light (photoperiod) to penetrate into the rearing containers than would occur if the openings were covered back up. This extra light benefits the development of the fish.

Review Team Response: *The Team recognizes the difficulty the McCall FH staff face working during the area’s winter weather. We are also concerned with maintaining the integrity of the LSRCP structures and the safety of employees. Therefore, the team remains committed to its recommendation to repair the roof. At the very least the McCall FH staff should consider establishing a “Job Hazard Analysis” if working in the ponds is required when Snow and Ice have accumulated in the roof openings.”* The report has been modified based upon this response.

- 13. Comment:** Regarding Recommendation ML20: “Ensure that the tagging strategy accurately represents the entire population of progeny from all spawn groups for a particular brood year. All spawn groups should be proportionately represented among tag groups and raceways. Coded-wire and PIT tagged fish may not accurately represent each release group from McCall FH at the present time. Currently, 250,000 fish in 1 of 2 raceways of summer Chinook are coded-wire tagged and 52,000 fish in one of 2 raceways are PIT tagged.” - Although it may be possible to develop a strategy for “proportionate Lot representation” for the AD/CWT it would create additional fish rearing issues that likely would offset any advantaged gained. Specifically it would require mixing multiple Lots beyond what is currently done which will lead to greater size variation among the fish that will likely be carried over through the smolt stage. Also it is likely that either an extra mark event would have to be created for these fish or marking at the second event (going into Pond 2) would have to be delayed for a greater period of time which is also going to be impacting final fish size at release (fish grow better in the ponds as compared to indoor raceways). -- Given the current hatchery configuration it would be impossible to provide actual proportionate Lot representation for PIT fish. It would be possible to allow for the opportunity for selection based on proportionality of Lots, but would also create additional rearing issues such as described above. Also, the representation of fish once reared in the ponds could not be totally achieved without exposing significant numbers of fish to additional stress and handling (i.e.; taking fish from both Ponds for PIT tagging) for sorting out which mark types to be tagged. It may be possible to PIT tag some of the fish from Pond 1 into Pond 2 without creating additional sorting/ handling issues but in reality would only reflect rearing conditions for the last 2-months of final rearing and does not seem to be meaningful. -- The current mark program at MCFH was developed, and has been in place for many years, to reduce handling of salmon parr (i.e.; not having to sort out salmon parr containing a coded-wire-tag from pond populations during PIT tagging operations). --

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Procedurally, all but the last 1 or 2 “Lot(s)” of a given brood year are represented with coded-wire-tags; end Lot(s) are not of sufficient size to allow for CWT insertion but rearing space constraints necessitate the timing of mark application. -- Indoor rearing space availability and critical fish marking size limitations are such to preclude marking all of the summer Chinook juveniles at one time; but rather two marking events are scheduled to fill the outdoor ponds. -- Prior to ponding, for initial indoor rearing, individual trays of fry are identified as to what mark they will receive (AD-only or AD/ CWT) and which pond they will be marked into (Pond 1 or Pond 2). This is done to determine loading rates of each indoor rearing vat as well as to ensure as many “Lots”, as feasible, are divided between both rearing ponds. Pond 1 is initially marked with AD-clip only parr and are at a size that disallows the use of MATS trailers (i.e. fish are hand-clipped). In doing so, indoor rearing space becomes available and the remaining fish indoors are “split” into the newly emptied early rearing vats to reduce rearing densities and to allow for continued growth. A second marking event is scheduled approximately 1 to 1 ½ months later during which parr are marked using the MATS trailer as either AD/CWT or AD only into Pond 2. Several months later marking personnel return to MCFH to insert PIT tags into a portion of the parr being reared. Salmon reared in Pond 1 are used for this as it is an AD-only sub-population and does not require additional sorting/handling of fish that may contain a CWT. -- This methodology has proven to be an effective way of utilizing rearing space at MCFH in an efficient manner and does reasonably divide fry from spawn takes between the two final rearing ponds. Some variation in mean final release size between ponds may periodical occur, brood year to brood year, but hatchery feeding protocols (rates fed) are adjusted to lessen the variation between ponds.

Review Team Response: *The review team’s recommendation is consistent with best management practices to ensure that CWT or PIT tagged fish represent the entire population. The current tagging strategy does not appear to adequately represent the entire population which could accomplished if equal number of tags were used in each of the holding ponds. An option would be to use both holding ponds when the adipose-fin clipped only fish are first moved to the outdoor units and then split adipose-fin clipped/coded-wire tagged fish equally during the second marking event. The report has been modified to include this example.*

- 14. Comment:** Regarding Recommendation ML24: “Properly disinfect the traps and other equipment prior to using them in other river systems. Rotary smolt traps are transferred among different river systems without disinfection. This could lead to disease or aquatic nuisance species transfer among river systems.” -- The HRT is inaccurate and this issue should be deleted. MCFH does not store, maintain or operate any rotary smolt traps making the HRT Issue and Recommendation moot.

Review Team Response: *This issue was not directed specifically towards the McCall Hatchery, but more towards the M & E biologists that may be working in the area, either now or in the future. While the McCall Hatchery may not be directly involved in the use of rotary traps, hatchery personnel may have knowledge of their use for fish monitoring that might occur in the local watersheds (McCall Lake, SF of the Salmon River, etc.). Of concern is the transfer of infectious agents from one basin to another. For instance, the environmentally resistant spores of *M. cerebralis* (whirling disease) can be transferred from endemic areas via rotary fish traps and other equipment, posing a disease risk to fish under the purveyance of the McCall Hatchery.*

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Stakeholder Comments and Responses

Native Fish Society⁵

General comments

1. **Responses to general comments received from the Native Fish Society (see Appendix D):**
The Native Fish Society (NFS) has endorsed many of the conclusions and recommendations of the Hatchery Review Team, both in the present review (Appendix D) and in earlier reviews of our National Fish Hatcheries on the Columbia River. In some of our previous reviews, the NFS raised important issues that the Team had initially overlooked, mostly as oversights or knowledge shortcomings. The many comments received from the NFS have improved the Team's reports and the review process significantly. The Review Team sincerely appreciates all the comments provided by the NFS, both for the current review and previous reviews.

Specific comments

2. **Comment:** The Native Fish Society supports the recommendation of Alternatives 1 and 4 which would terminate outplanting of Dworshak Hatchery steelhead stock (B-run) into Lolo Creek and the upper South Fork Clearwater River. ... Since Lolo Creek [and South Fork Clearwater River] steelhead are non-viable populations of wild native steelhead determined by the Interior Columbia Technical Review Team, terminating these hatchery stock transfers is biologically sound and necessary in order to recover ESA-listed steelhead.

***Review Teams Response:** The Team's recommended Alternatives (1 & 4) were intended to be consistent with reducing risks to natural populations within the upper S.F. Clearwater River and Lolo Creek while, at the same time, providing a continued harvest benefit for use of Dworshak B-run steelhead within the mainstem Clearwater River and lower S.F. Clearwater River. Development of an endemic steelhead program within the upper S.F. Clearwater River is currently being assessed and will require funding and infrastructure to implement. In the interim, the Team felt that the preferred alternatives were consistent with reducing risks to natural populations in both the upper S.F. Clearwater River and Lolo Creek while providing an important harvest benefit in the mainstem Clearwater River and lower S.F. Clearwater River.*

3. **Comment:** We disagree with the decision to continue transfers of Dworshak Hatchery steelhead into the Little Salmon River regardless of the conditions stated by the team that there would be limited impact on wild steelhead. This overlooks the potential for straying into other natural production areas and it perpetuates the continuation of inter-basin stock transfers. ... It is not enough to allow this program to continue without specific scientific evaluation of its impact on wild steelhead. It is unacceptable for the team to say it "accepts the current

⁵ Written comments provided October 26, 2009 by Bill Bakker, Director of the Native Fish Society, Portland, Oregon (<http://www.nativefishsociety.org/>).

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management rationale that this release does not pose a risk to natural steelhead populations.” Straying of non-native hatchery fish is a potential problem and natural spawning may take place in the Little Salmon River and other streams. The only way to determine these potential impacts is to conduct the appropriate studies to evaluate the risk of this program. A risk assessment based on an inventory of stray steelhead is required before approving continued release of Dworshak B-run hatchery steelhead into the Little Salmon River.

Review Team Response: *The Team discussed at length the annual outplanting of Dworshak NFH steelhead into the Little Salmon River. Biological principles support the perspectives of the Native Fish Society. However, based on comanager goals, current habitat conditions in the Little Salmon River, and available biological data, the Review Team did not feel that it could scientifically defend - at this time - a recommendation to terminate those annual transfers. Several factors influenced the Team's decision. (1) The most viable and biologically significant natural population of steelhead in the Little Salmon River currently exists in the upper Rapid River watershed, and that population is essentially “protected” from hatchery fish by the weir at the Rapid River Salmon Hatchery. (2) Tagging data indicate that Dworshak NFH steelhead stray at extremely low rates during their upstream migrations, although our expectation is that outplanted fish will have higher stray rates than fish directly released from Dworshak NFH. Because of these latter concerns, the Team has explicitly recommended monitoring and evaluation to document harvest contributions and stray rates of Dworshak NFH steelhead released at each outplanted location. Such an evaluation would provide much needed data regarding the overall benefits and risks of the current outplanting strategies. (3) Fish health experts on our Team did not identify a specific pathogen problem that would warrant termination of outplants into the Little Salmon River, particularly if those fish were outplanted from the Clearwater FH rather than Hagerman NFH or Magic Valley FH. The Team did conclude that outplanting Dworshak steelhead directly from the Clearwater Hatchery, rather than rearing those fish at southern Idaho hatcheries, would significantly reduce risks to the hatchery fish themselves and may confer increased harvest benefits in the Little Salmon River related to increased post-release survivals. (4) The Team concluded that potential conservation goals for natural populations of salmon and steelhead in the Little Salmon River, exclusive of Rapid River, would - most likely - not be achieved without a concerted major effort among stakeholders and local landowners to restore the riparian and stream habitats of the mainstem Little Salmon River. At the present time, the Team is unaware that such a concerted effort is underway or planned.*

4. **Comment:** The Native Fish Society agrees with the recommendations for terminating the Upper Salmon River B-Run steelhead program. We also agree with termination of Dworshak Hatchery B-run steelhead releases into the EF Salmon River.

Review Team Response: *The Team did not unequivocally recommend termination of the B-run steelhead program in the upper Salmon River. However, we did question the benefits of the program relative to the risks. In general, the Team concluded that the presumed benefits of the program were undocumented and did not appear, at least superficially, to outweigh the risks. The available data further indicated that smolt-to-adult return rates for Dworshak B-run steelhead outplanted in the upper Salmon River basin (i.e., at the East Fork and Squaw Creek) were only 15-20% of the return rates of A-run steelhead released in the same general region. In response to our original recommendations to terminate the B-run program, biologists and managers from IDFG assured the Team that the benefits were indeed real but were difficult to “quantify” because they were more related to “quality” fishing than actual numbers of fish harvested. IDFG also pointed out that first generation (F1) “Upper Salmon*

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River B-run steelhead”, representing the adult progeny of Dworshak B-run steelhead that had been transferred from the Clearwater River and trapped as returning adults in Squaw Creek, had significantly higher return rates than outplanted fish that were the progeny of adults trapped at Dworshak NFH. Nevertheless, those higher return rates were still less than those for A-run steelhead. Those preliminary results are consistent with expectations based on the scientific literature and concepts related to “local adaptation.” Consequently, in response to comments from IDFG, the Team recommended that development of a self-sustaining “localized” population of B-run steelhead for the upper Salmon River should be the highest priority IF the B-run program in the upper Salmon River was to continue. The Team further concluded that the location and facilities at Squaw Creek are inadequate for initiating development of a localized hatchery population and suggested that the existing weir and hatchery on the Pahsimeroi River might be the best location currently available. The Team noted that the Pahsimeroi River had been the location where the now-successful A-run program had first been developed from “out-of-basin” native steelhead that had been trapped in the Hells Canyon region of the Snake River.

- 5. Comment; Magic Valley Fish Hatchery A-run Steelhead:** The Native Fish Society supports Alternative 2 that would establish a native broodstock hatchery program in the Salmon River. An integrated hatchery program may improve survival and contribution to the fishery as well as mitigate impacts of hatchery fish in the Salmon basin as well as in other streams where these fish stray such as the Deschutes River. This should be the preferred alternative that moves this program in the short term rather than the long term.

Review Team Response: *The Team’s preferred alternative was Alternative 1: Maintain the current program with implementation of all Review Team recommendations. The Team strongly considered Alternative 2 which would “reduce the size of the current Pahsimeroi A-run steelhead program at Magic Valley FH and establish an integrated hatchery program derived from natural-origin steelhead collected at the Pahsimeroi FH weir.. Although some Team members favored Alternative 2 over Alternative 1, the consensus opinion was that the current size of the natural population in the Pahsimeroi River would significantly limit the size of an integrated hatchery program and, in turn, would impede achievement of harvest goals. In addition, an endemic integrated broodstock program already exists in the E.F. Salmon River, and the Review Team recommended a significant expansion of this latter “East Fork Naturals” program to better address conservation and recovery goals in the upper Salmon River. The Team would most likely have viewed Alternative 2 more favorably at the present time if habitat conditions and natural productivity were at a sufficiently high level to better support this option.*

- 6. Comment; East Fork Salmon River “Natural” Steelhead:** We support implementation of Alternative 3 that would expand the EF Salmon so-called “naturals” program. This would replace the inappropriate release of non native Dworshak B-run steelhead and improve the hatchery program for all the reasons noted in your recommendation. Implementation of Alternative 3 should be moved from the “go slow” track to the “get it done now” track.

Review Team Response: *The Review Team concluded that the recent success of the E.F. “natural” steelhead program may be sufficient to expand the program to address both conservation and harvest goals (Alternative 3). However, it may be premature to initiate the program immediately until recommendations regarding the other steelhead programs in the upper Salmon River are addressed to ensure that both program and facility needs are resolved. The Team does believe that we have provided a “road map” to comangers for*

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long-term planning that can address both conservation and harvest goals in the Salmon River. Nevertheless, the Team's recommendation was to discontinue the transfer and release of Dworshak B-run steelhead into the E.F. Salmon River as soon as possible.

- 7. Comment; Conclusion:** ... There should be some urgency created to reform hatcheries so they have less impact on wild populations. It is our recommendation that these programs be re-evaluated in the next five years to determine whether the recommendations were actually implemented. In the meantime a hatchery risk assessment, built upon your review, should be completed for each hatchery program. ... At some point an evaluation of wild native steelhead in the Clearwater and Salmon basins should be completed to fully describe the management situation in these basins and the best way to resolve problems that may be impeding recovery of viable wild steelhead. ... Each wild population should be evaluated and recommendations for their recovery agreed to by the management parties. ... For each population there needs to be a management plan with biological objectives.

Review Team Response: *The Service is currently working to implement as many Review Team recommendations as possible, as quickly as possible. Implementation of some recommendations will require significant increases in expenditures for which new dollars may need to be appropriated. Implementation of other recommendations will require comanager discussion and agreement through the U.S. vs. Oregon legal process. Each of the comanaging partners have different perspectives and priorities, and resolving differences in those priorities can represent a significant paradigm shift in management strategies. The Review Team has attempted to conduct a "scientific review" of operations and programs with the intent that each of our recommendations needs to be "scientifically defensible". However, the Team recognizes that – in the real world – social and economic factors need to be considered also. The Team sincerely hopes that our reviews will provide new perspectives to those comanager discussions such that long-term goals that benefit the resource, coupled with scientific defensibility and new information obtained via monitoring and evaluation, are the true driving forces in those decision-making processes.*

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Stakeholder Forum⁶

1. **As part of recommendation CW8b for the Clearwater FH B-run steelhead program, if B-run steelhead continue to be released into the South Fork Clearwater River, the Team proposed the construction of a satellite facility so that a localized broodstock can be developed. Does the Team also recommend that hatchery-origin steelhead released in the South Fork Clearwater River be “adipose-fin clipped” so that they can be distinguished from natural-origin steelhead when recaptured at the proposed satellite facility?**

***Review Team Response:** The Team believes that “any” mark or tag is important for distinguishing hatchery from natural-origin salmon and steelhead for proper program management. Depending upon the purpose of the mark or tag, a multitude of marks or tags, physically identifiable or internal, can be utilized. For example, so that hatchery and natural-origin steelhead can be distinguished during broodstock collection, the mark can be external (e.g. fin clip, elastomer tag) or internal (e.g. coded-wire tag).*

2. **Alternative 4 for the Magic Valley FH B-run steelhead program states “Discontinue the transfer of Dworshak NFH B-run steelhead eggs from Clearwater FH to Magic Valley FH, and replace with on-station rearing at Clearwater FH followed by direct release into the Salmon River”. Does this alternative include increasing the number of A-steelhead produced at Magic Valley FH?**

***Review Team Response:** Removing the B-run steelhead program from Magic Valley FH could result in increased production of A-run steelhead if rearing densities do not exceed fish culture guidelines. The Team is especially concerned about early rearing densities at Magic Valley FH which currently reach 0.6 D.I. in the indoor nursery tanks. Refer to recommendation MV10 in the report for details.*

3. **The recommended alternative for the Magic Valley FH B-run steelhead program includes the option of developing a locally adapted B-run steelhead stock in upper Salmon River to maintain a segregated harvest program. This appears to conflict with the Team’s recommended alternative to expand the East Fork Naturals program to replace the B-run program on the east fork.**

***Review Team Response:** The Team has not drafted a “master plan” that compares all programs and chooses the best course of action for the area. The Team introduced alternatives for each individual program, weighed the benefits and risks of each, and recommended alternatives specific to each program. For the Magic Valley FH B-run steelhead program, the Team introduced several “options” as part of their recommended alternative, including: developing a locally adapted broodstock for maintaining a segregated*

⁶ These are excerpts from comments provided by attendees of a Stakeholder Forum held at the Oxford Suites, Boise, Idaho on April 28th, 2009. Responses were provided by Review Team members who attended the meeting and were clarified in subsequent Review Team meetings.

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harvest program for B-run steelhead in the Upper Salmon River; terminating the release of B-run steelhead in the Upper Salmon River and increasing the size of the Magic Valley FH A-run steelhead program; and, over the long term, expanding the East Fork “Naturals” program to become a two-broodstock, stepping-stone program that provides the desired harvest benefits of the existing B-run steelhead program while maintaining conservation benefits for the East Fork Salmon River steelhead population. The general conclusion of the Team is that the continued transfer and release of first generation Dworshak B-run steelhead into the Upper Salmon River should be discontinued. The Team believes it is ultimately up to the comanagers to decide the best course of action for this particular program, and all of the programs combined. The report has been modified to address this comment and clarify the report.

- 4. Why does the Review Team consider B-run steelhead an “out-of-basin stock” while A-run steelhead are considered “in-basin” and native to the basin. The A-run steelhead also originated from out-of-basin steelhead populations in the lower Snake River (e.g. Hells Canyon).**

***Review Team Response:** The Team is not arguing that the A-run steelhead are more native to the Upper Salmon River Basin than B-run steelhead. Instead, the Team is concerned about the continued transfer and release of first generation B-run steelhead from outside the basin without the ability to effectively recapture returning adults that bypass the fisheries, and without a concerted effort to establish a locally adapted broodstock. To minimize risks to natural steelhead populations, the Team believes that the approach to establishing and managing a B-run steelhead program in the Upper Salmon River should be consistent with how the A-run steelhead programs were established and are now managed. The Pahsimeroi A-run steelhead stock, as it exists today, is now a stock locally adapted to the Upper Salmon River. The stock was created using steelhead from outside the basin; however, releases occurred at a facility where returning adults could be recaptured and then utilized as broodstock.*

- 5. Regarding the Sawtooth FH program, due to the low numbers of adults returning to the Sawtooth FH weir, implementing any of the alternatives the Review Team suggested aside from alternative 1 may not be feasible. Also, what was the Team’s rationale for the Team recommending Alternative 3? The Hatchery Scientific Review Group (HSRG) recommended that the equivalent of the Hatchery Review Team’s alternative 4 be implemented. The IDFG must resolve this conflict of recommendations regarding how to proceed with the Sawtooth FH spring Chinook program.**

***Review Team Response:** Further discussions with both the Review Team and the HSRG may help the IDFG identify a management strategy for the Sawtooth FH spring Chinook program. However, the Team reviewed this program separately from the HSRG and we came up with different conclusions. All of the alternatives presented in the report have some merit. However, each alternative is based on different assumptions. The Review Team concurs that Alternative 3 (the two-broodstock stepping-stone approach) would not be able to sustain the current release level of 1.0 million smolts but would most likely require a 25% decrease in the total number of smolts released. On the other hand, Alternative 4 – the HSRG approach –*

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implicitly assumes that hatchery-origin fish do not spawn in significant numbers downstream of the Sawtooth Hatchery weir. We know that this latter assumption is not true which then creates uncertainty regarding the ability of Alternative 4 to achieve conservation goals. In light of this uncertainty, the Team felt that Alternative 3 was best suited to meet current harvest goals while conserving the Upper Salmon River spring Chinook stock. The Team also considered Alternative 2 which would convert the current segregated program to an integrated program, but implementation of this latter alternative would require at least a 50% reduction in the total number of smolts released (i.e., from 1.0M smolt to less than 500,000 smolts). Ultimately, significant improvements in smolt-to-adult return rates (SARs) will be necessary for achieving long-term comanager goals for both conservation and harvest.

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