

**Response to ISRP Comments regarding Project 198710002:
FY 2007-2009 Proposal for the
ODFW - Umatilla River Subbasin Fish Habitat Improvement Project**

In response to ISRP comments quoted below (in the order they appeared in the comments document, *isrp2006-4b*):

1. *“This and the CTUIR proposal 198710001 should be presented as a unified proposal...”*

Although both Project’s share the same mandate and employ similar technical approaches for protecting and enhancing fish habitat within the Umatilla Subbasin, each is operated and managed quite differently from an administrative standpoint. This affects numerous aspects of project operation including personnel requirements, budgets, etc. In addition, each project operates in separate geographical areas (making all reasonable efforts to communicate and coordinate, in order to eliminate duplication of effort and ensure cost-effective implementation). For these reasons, we feel it is more logical to continue to submit these proposals independently.

2. *“...this proposal should better demonstrate its link to the CTUIR habitat project.”*

Although each project works independently to develop and implement projects appropriate for their respective areas of responsibility within the Umatilla Subbasin, an effort was made in 2005 to coordinate and plan future habitat improvement activities within the Subbasin, using the Umatilla/Willow Subbasin Plan as the guiding document. The result was the draft *Five-Year Action Plan for the Development and Maintenance of Habitat Improvement Projects in the Umatilla Subbasin: 2006-2010^a*, which was included as supplemental document in both the ODFW and CTUIR proposals. The Five-Year Action Plan (since finalized and included as a supplemental document with this response - *198710002b.pdf*) demonstrates that ODFW and the CTUIR are: 1) attempting to coordinate habitat improvement efforts; 2) taking a similar approach to habitat improvement treatments; and 3) reducing duplication of effort by assigning specific areas of responsibility to each of the sponsors, within high priority target areas in the Subbasin. The two projects (198710001 and 198710002) complement one another by using a coordinated approach and implementing similar habitat improvement projects within their designated areas of responsibility, thereby addressing habitat limiting factors over a maximum area within the Subbasin.

3. *“...should better prioritize among the various habitat restoration strategies proposed.”*

We have used outputs of the Subbasin Plan^b (priority Geographic Areas for habitat protection and restoration, by species), along with recommendations from the Subbasin Planning Team to Council^c (priority Management Strategies, by Geographic Area, required to enhance natural production through habitat restoration), to refine high priority target areas and develop a suite of treatment options for these areas. The Five-Year Action Plan was developed as a logical extension of the Subbasin Plan, identifying potential project opportunities at the reach-level within high priority target areas. To

accomplish restoration actions within the identified high priority target areas, our project must establish working relationships and coordinate with private landowners in order to develop and ultimately implement habitat improvement projects. Attempting to prioritize activities at a finer scale (in the context of a proposal aimed at describing project activities over a period of three to five fiscal years) would not be beneficial until landowner cooperation can be gauged - the result of initiating landowner contacts and project development.

Once these relationships have been established, we then inventory the subject reach to determine the opportunity for addressing the identified limiting factors. The Subbasin Plan provides a prioritized list of habitat limiting factors and prioritized list of restoration strategies for each high priority target area. This guidance, as well as data collected from the prospective restoration site, is then utilized by project staff to develop a site specific restoration approach.

Section 7.3 of the ISRP's Preliminary Review - Programmatic Comments (document: *isrp2006-4a*) on Fish and Wildlife Habitat Projects, states that "...availability of a site or receptivity of a landowner, rather than a clearly prioritized fish and wildlife need", forms the "...primary selection criteria..." for many projects. This is not the case for ODFW's Fish Habitat Improvement Project. A clear distinction needs to be made between actions focused on initiating project opportunities, landowner interactions, and actions to design and implement projects. The action to pursue development of projects in a particular geographic area is not based on pre-conceived ideas about landowner cooperation. This action is based on guidance provided in the Subbasin Plan. A clear logic path is used that includes prioritization of target areas for restoration, and development of restoration actions based on prioritized limiting factors and prioritized restoration strategies. However, if the action to pursue opportunities in priority areas fails, then the end result appears to be that the project did not focus on a priority area, when in fact, planning guidance was followed, but the opportunity for restoration did not exist due to a lack of landowner support.

Under ideal circumstances our project could prioritize and develop a timeline for implementation of projects at the reach- and site-levels, however; we have no option but to employ a policy of *strategic opportunism* - landowner cooperation is crucial to project implementation, but it is not the primary factor in selecting project sites.

4. "Given the results to date (declining survival rates), the sponsors need to provide convincing evidence that the project is providing enough fishery/ecosystem benefit that is worth continuing."

This comment implies that declining egg-to-smolt survival figures are indicative of ineffective habitat improvement treatments, without consideration for all of the many other in-basin factors which can affect smolt survival. The current mandate of research project 198902401 (*Evaluation of Juvenile Salmonid Outmigration and Survival in the Lower Umatilla River Basin* - referenced in the ISRP's comments as the source of egg-to-smolt survival data), is not to monitor or evaluate the effectiveness of habitat

improvement treatments applied in the upper Umatilla Subbasin, nor is their sampling protocol designed to support analysis of egg-to-smolt survival data at the tributary-level. Furthermore, the proposal for project 198902401 does not offer conclusions that link declining survival rates to ineffective habitat improvement treatments. We would also argue that the egg-to-smolt survival data (presented in Figure 3, proposal 198902401), shows substantial annual variations in survival estimates that, when fit to a linear regression, indicates a slight decreasing trend with only a weak statistical relationship ($R^2 = 0.1297$). Although our project cannot provide the ISRP with smolt output data that will substantiate the effectiveness of habitat improvement efforts (i.e., increased smolt production at the Subbasin-level, as a function of site-specific habitat improvement treatments), we feel that it is a misuse of the results presented in proposal 198902401 to interpret this information as evidence of ineffectiveness on the part of habitat improvement projects, and we would caution against the use of these data for this purpose.

When using smolt output at the Subbasin-level as an indicator of performance, reviewers must also consider the relatively short sections of stream treated by habitat improvement projects in upper tributaries of the Subbasin, as well as the spatial disconnect between habitat improvement project sites and Three Mile Falls Dam where smolt data are collected. Once juvenile steelhead leave the Birch Creek watershed (where a majority of ODFW's habitat improvement projects have been implemented) on their ocean-bound migration, they must still navigate over 45 river miles of the Umatilla River mainstem which are heavily impacted by anthropogenic activities including agriculture and irrigation withdrawals. Project 198902401 has also presented results (project 198902401, 2001 annual report^d) based on four years of reach survival tests (1998-2001), which show a trend of improved survival rates (statistically significant) for test groups of juvenile hatchery steelhead released lower on the Umatilla River (river mile 9.0), compared to those released higher in the watershed (river mile 48.5 - near the confluence with Birch Creek). The report goes on to suggest that in-river factors (including low flow, high temperatures and predation) adversely affect migration success and survival of juvenile salmonids.

5. *“The text does not reflect considerable study and thought by the participants regarding the need for restoration of dynamic ecosystem processes”*

It appears that the reviewers are not in agreement with the basic philosophies and approach being proposed, however; given the on-going debate over the use passive versus active restoration tools we have given considerable study and thought regarding the need for active restoration and where its use is most appropriate. Pages 8 through 12, Section B of the proposal (*Technical/Scientific Background*) describe, in detail, the need for restoration of stable channel function, as well as our project's approach and prioritization scheme for implementing stable channel design projects. Furthermore, the restoration of stable channel and floodplain functions was recommended as a viable treatment option as described in the Subbasin Plan (Management Strategy #7 below):

(7) *“Modify Channel and Floodplain Function. Where opportunities exist, work of public, federal, state, tribal and private lands will be conducted to improve form and function of stream channels. This work involves directly or indirectly returning stream*

channels to a functional state that is determined by the valley form geology, soils, vegetation and climate. Specific parameters often targeted by this type of work include channel width and depth, sinuosity, slope, food prone area, ration of channel features, etc.” - Proposal: page 17, para. 2.

This Management Strategy was recommended for 6 Geographic Areas under the responsibility of ODFW, as defined in the Five-Year Action Plan.

6. “Actions should be limited to fencing, overcoming passage problems, restoration of the original hydrograph, and reduction of human-induced sediment introduction”

All of the actions listed above should and will be implemented, as site conditions dictate. We are also pleased that the reviewers have included the remediation of passage concerns in this list of treatment priorities. However, eliminating active, stable channel design activities from our suite of treatment options would, in many cases, prevent us from addressing the underlying problems which were caused by long-term land use activities and which have persistent effects in many stream reaches throughout the Subbasin. Addressing underlying problems rather than merely the *symptoms* of a problem, is one of the basic principals of modern habitat restoration.

“The underlying philosophy adopted in the development of active rehabilitation projects is that the reestablishment of hydraulic and geomorphic stream function is crucial to the accomplishment of long-term, self sustaining habitat restoration. We concentrate primarily on this concept, and less on activities designed strictly to provide instream habitat. However, many of the techniques that we employ to create naturally stable channels also provide good to excellent habitat feature. Fish habitat improvement is not done without understanding and assessing the streams ability to derive the desired outcome (Rosgen 1996).” - Proposal: page 9, para. 4.

Activities carried out by this project are aimed at addressing limiting habitat factors. We attempt to address these issues using the least invasive treatment methods at our disposal (our first choice being passive treatments such as livestock exclusion fencing), however; in many instances opportunities for regaining productivity through strictly passive means are limited and thus, active treatments must be implemented.

Without the “tools” of active restoration, the Sponsor is left without the ability to effectively address limiting factors in many of the high priority target areas. To accomplish restoration of aquatic species through habitat restoration, we must face the “realities” that exist on the ground. We know from having collectively worked to correct habitat deficiencies throughout northeastern Oregon for over 20 years, that there are some conditions that cannot be corrected through passive approaches. The ongoing constraints of land use and the expectation to see positive responses in a timely manner are also realities we must face.

The twenty years of experience we have with restoring habitat within this region is an invaluable asset. This on-the-ground experience gives us good insight into what the most effective restoration tools are and when to use them. We too are very strong advocates for passive restoration. We have had some outstanding successes with this approach. However, we have also had some outstanding successes with active restoration when applied correctly under to the right set of conditions.

The most common situation where active restoration can be used successfully to overcome anthropogenic degradation is the mechanically straightened and incised stream, which are very common in the Umatilla Subbasin. We regionally have some very good examples of where natural channel design techniques have been used successfully to restore straightened and incised stream channels.

7. *“Choice of activities should be limited to locations where there is a high probability for regaining significant productivity for salmonids, and this must be clearly demonstrated by priority”*

The EDT model was employed in the Subbasin planning process to do exactly what is described in the above comment. The geographic areas that showed the greatest potential for increasing the abundance, productivity and diversity of focal species were identified as priority. This project proposes to implement actions only within these priority areas to address limiting factors of the focal species. In addition, as stated in the proposal (following the hierarchical strategy described by Roni et al. 2002^e), *“...treatments with a high probability of success and those techniques with a relatively quick response time should be implemented before any other.”* Proposal - Page 6, para. 3.

8. *“...reviewers note that no results were presented.”*

Results of past activities are presented on pages 21 through 27 of the proposal. What is absent from the proposal is the *type* of results desired by the reviewers; namely, statistical data linking habitat improvement efforts to increased smolt production at the Subbasin-level - this data simply does not exist. The M&E information that we have at our disposal is limited to *project-level* monitoring data. Extensive effort was not applied to tabulating or presenting these results graphically, since no level of analysis of these data would be sufficient to provide proof of increased smolt production directly related to habitat improvement efforts.

A discrepancy persists between the type, intensity and cost of M&E activities which the ISRP expects (in order to obtain the desired, quantitative smolt-output results), versus the M&E activities that Council and BPA deem acceptable and are willing to fund. BPA and the ISRP need to address this matter, arrive at an agreement, and then provide project sponsors with clear instructions regarding the direction of M&E activities.

One of the RM&E objectives identified in the recently finalized *Comprehensive Research, Monitoring, and Evaluation Plan for Umatilla Subbasin Summer Steelhead and Chinook Salmon*^f, is to *“Assess the impact of habitat improvement and protection on salmonid production in the Umatilla Subbasin”* (Management Objective 2, M&E Objective 2a, pages 67-70). Monitoring and evaluation of habitat improvement work has been identified by research and management staff as a moderate-high priority, however; activities remain unfunded.

9. *“Furthermore, there is no clear identification of the key high priority habitat work as identified in the Subbasin Plan...”*

All activities and work elements described in our project’s proposal are planned for implementation within high priority geographic areas, as identified in the Subbasin Plan. The prioritization process (using the Subbasin Plan outputs, recommendations from the Subbasin Planning Team, and development of the Five-Year Action Plan), is described in detail in comment #3 above.

10. *“...nor demonstration of some benefits to fish.”*

Benefits to fish and their habitats have been gained, as described on Pages 21 through 27 of the project proposal. Although the benefits described are qualitative, they nonetheless reflect improvements in fish habitat conditions in the form of: increased habitat complexity; improved channel function (reconnection of stream channel and floodplain); and decreased water temperatures (at the habitat unit scale).

Also see comments #4 and #8

11. *“Given alteration of stream characteristics... This project puts together actions... The approach, however, is always subject to questions regarding whether or not the ‘right’ thing is being done from the perspective of the fish.”*

The reviewers again appear reluctant to endorse the use of natural (stable) channel design projects as an appropriate course of treatment for improving fish habitat conditions, based on a fundamental aversion to the proposed approach; i.e., using those methods described by Rosgen (1993, 1994, 1996, 1997 and 1998)⁶. In their comments, the reviewers also point to declining egg-to-smolt survival rates as a rationale for questioning the efficacy of such active treatment, yet recommend the continued use of techniques such as riparian fencing, vegetative plantings, and bio-engineering treatments, despite a similar lack of evidence to support the use of these treatment’s in increasing smolt production at the Subbasin-level.

12. *“The results of this work as found and described in project 20072009...In light of these results...” Note: “...project 20072009...” should read, “...project 198902401...”*

Data described in the proposal for project 198902401 **do not** represent the results of project 198710002 and again should not be used to evaluate its effectiveness. We recognize the need for M&E of habitat improvement projects (as ascribed in the Umatilla RM&E Plan), however this work has been, and currently remains unfunded.

Also see comment #4

^a St.Hilaire, D. R., T. Bailey, B. Lewis and G. James. 2005. Draft Five-Year Action Plan for the Development and Maintenance of Habitat Improvement Projects in the Umatilla Subbasin: 2006-2010. Prepared jointly by

the Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). 17 pages. Unpublished Document

- ^b **Subbasin Plan. 2005.** Umatilla/Willow Subbasin Plan. Prepared by the Umatilla/Willow Subbasin Planning Team. Prepared for the Northwest Power and Conservation Council. Final Plan Accepted; May, 2005. 468 pages + appendices.
- ^c **Subbasin Planning Team. 2005.** Umatilla/Willow Subbasin Plan Priorities: Recommendations to the Northwest Power and Conservation Council on the Umatilla/Willow Subbasin Priority Strategies to Guide the 2007-2009 Project Solicitation. September 27, 2005. 7 pages.
- ^d **White, T.C., S.M.Jewett, J.T.Hanson, and R.W.Carmichael. 2003.** Evaluation of Juvenile Salmonids Outmigration and Survival in the Lower Umatilla River Basin, Annual progress report 2001. Prepared by Oregon Department of Fish & Wildlife for the Bonneville Power Administration, Portland, OR.
- ^e **Roni, P., T. J. Beechie, R. E. Bilby, F. E. Leonetti, M. M. Pollock and G. R. Pess. 2002.** A Review of Stream Restoration Techniques and a Hierarchical Strategy for Prioritizing restoration in Pacific Northwest Watersheds. *North American Journal of Fisheries Management*, 22, 1-20.
- ^f **CTUIR and ODFW. 2006.** Comprehensive research, monitoring, and evaluation plan for Umatilla Subbasin summer steelhead and chinook salmon. Prepared jointly by the Confederated Tribes of the Umatilla Indian Reservation and the Oregon Department of Fish and Wildlife. J. Schwartz and W. Cameron Editors. Prepared for Bonneville Power Administration and the Northwest Power Planning Council, Portland, OR. 181 pages.
- ^g **Rosgen, D. L. 1993.** River restoration using natural stability concepts. *Presented at A National Conference on Watershed Management*. Alexandria, VA.
- Rosgen, D. L. 1994.** A classification of natural rivers. *Catena* 22: (169-199).
- Rosgen, D. L. 1996.** *Applied River Morphology*, Second Edition. Wildland Hydrology, Pagosa Springs, Colorado.
- Rosgen, D. L. 1997.** A geomorphological approach to restoration of incised rivers. *In Proceedings of the conference on management of landscapes disturbed by channel incision*. S. S. Y. Wang, E. J. Langendoen and F. D. Shields, Jr. eds.
- Rosgen, D. L. 1998.** The reference reach - a blueprint for natural channel design. Presented at the ASCE, Denver, Co.