Response Requested via ISRP regarding Proposed Scope Expansion of the Project *Restore Potlatch River Watershed* (#200206100)

(Re: Letter dated 12/29/08 to Tony Grover from Eric Loundenslager, ISRP Chair)

Introduction

The Potlatch River Steelhead Monitoring and Evaluation (PRSME) project was initiated by Idaho Fish and Game (IDF&G) in 2005 to assess the steelhead production and productivity within the lower Potlatch River drainage. The objectives of the PRSME are as follows:

1) Establish baseline levels of steelhead production and productivity within the lower Potlatch River drainage.
2) Provide a monitoring component to the numerous habitat restoration project currently ongoing within the Potlatch rover drainage
3) Describe steelhead life history strategies exhibited within the lower Potlatch River drainage.

The Potlatch River has the strongest population of wild steelhead present within the lower Clearwater River drainage. The lower Clearwater River steelhead Distinct Population Segment is important to steelhead recovery; however, no information was available regarding population production and productivity. The PRSME project is designed to establish baseline indices regarding population dynamics and expand the knowledge of steelhead life history strategies within the lower Potlatch River and lower Clearwater River as a whole. The Northwest Power & Conservation Council's Fish and Wildlife Program has supported habitat enhancement projects in Idaho in the past for purposes of increasing the spawning and rearing potential for steelhead. Those projects included some barrier removals, off-channel developments, instream structures, and sediment reduction. The barrier removals, followed by instream structures, had the largest positive benefits (Scully and Petrosky 1991).

The Potlatch River is a watershed that has undergone significant amounts of change over the past 150 years. Land practices and manipulation associated with agricultural use has significantly altered the aquatic habitats present within the drainage as well as flow dynamics associated with hydrograph. These changes have resulted in a variety of limiting factors identified by previous work within the drainage. (Johnson 1985; and Bowersox and Brindza 2006).

These limiting factors include:

1) Extreme flow variation
2) High summer water temperatures
3) Lack of riparian habitat
4) High sediment loads
5) Low densities of in-stream structure


Typical stream sections within the Potlatch River watershed exhibiting limiting factors (Corral Creek)

Despite the significantly altered condition of aquatic habitats within the Potlatch River drainage, it does support an important population of wild steelhead trout. Aside from general distribution and abundance data (Schriever and Nelson 1999; Bowersox and Brindza 2005) limited information is available with regards to levels of productivity, production and life history strategies for this population.

The steelhead population in the Potlatch River has been found to be genetically distinct from other local populations such as Dworshak hatchery strain steelhead (Byrne 2005). The geographic location of the population and lack of hatchery influence within Potlatch River steelhead make understanding population dynamics of this group extremely important regarding recovery actions for Clearwater River steelhead (ICTRT 2007).

1. Technical Justification, Program Significance and Consistency, and Project Relationships (sections B-D)

The additional WE's proposed for the Latah SWCD scope of work are complimentary to ongoing monitoring, testing, and goals set for the restoration of the Potlatch River Watershed for overall water quality, stream habitat health, and especially the enhancement of steelhead populations.

It is well documented that under natural conditions summertime temperatures generally tend to increase in downstream reaches. However, it is an equally basic tenet of scientific observations that behavioral thermoregulation in juvenile salmonids confirm that they preferentially utilize "pool habitats" when thermally stressed. This was recorded scientifically by Nielsen and Lisle, and subsequently supported by Hines and Ambrose, as well as others. Additionally, the Low Water Habitat Availability surveys that the PRSME effort undertakes each summer, show surprisingly low water temperatures in pool habitats within the lower Potlatch River when hyporheic inputs are present within the a pool. IDFG has documented pool temperatures that have an established hyporheic connection remain cool (12-16 C) and contain high densities of O. mykiss even in late summer. Pools with no hyporheic influence reach lethal temperatures (over 28 C) and

contain no o. mykiss during the same late summer sample periods. Pool creation is one more component to the restoration of the Potlatch River system. Combining pool creation with the riparian plantings, as indicated in the Latah SWCD proposal, would do much to create improved habitat for steelhead in the Potlatch River system. Such actions would provide protection for summer rearing by adding refuge and cooler water temperatures.

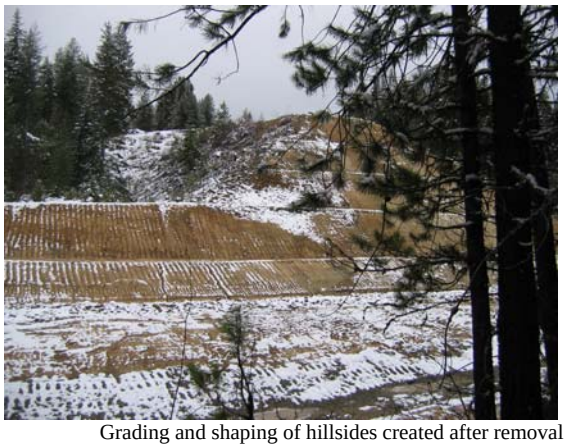
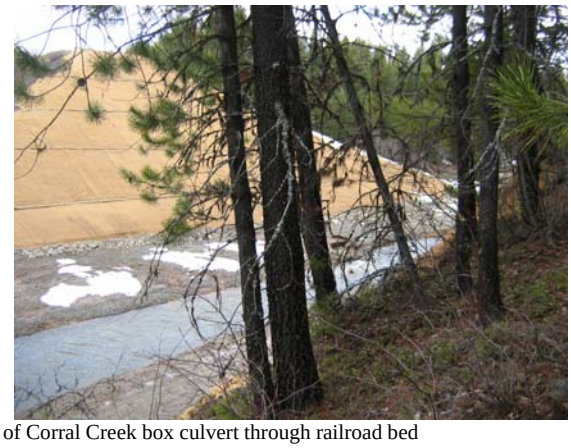
2.) Objectives, Work Elements, and Methods (section F)

Tee Meadows site is an upstream reach from the extensive work already performed by Latah SWCD on Corral Creek. The additional work elements, requested by Latah SWCD to be added to the existing BPA contract, have previously been performed by Latah SWCD on the Corral Creek site utilizing funding sources outside BPA. The removal of a significant fish passage barrier in Corral Creek has been well documented and heralded for its quality of construction and function. In its first spring, smolts were identified in the stream reach above the location of the former barrier for the first time in many decades.

Interior view of former box culvert fish barrier on Corral Creek

Southern outlet of former Corral Creek culvert

Northern entrance to former Corral Creek box culvert

Grading and shaping of hillsides created after removal of Corral Creek box culvert through railroad bed


Post construction revegetation of Corral Creek where railroad bed box culvert once existed as a fish migration velocity barrier

Therefore, in an attempt to continue the restoration process and to open even more miles of stream habitat for steelhead, Latah SWCD seeks BPA authorization to progress upward in the watershed. WE's 29; 30; 33; and181 are needed in order to bring another estimated 14 miles of stream habitat up to suitability for steelhead migration, spawning and survival in and around the Tee Meadows site. WE's 29; 30; 181; would be used in support of the work already accomplished on the Corral Creek site, and further utilized to compliment the sites neighboring it, known as the Avulsion Reach and Round Meadow. WE's 27; 84; 184 and 186 would be applied to the Pine Creek bridge site where the current bridge acts as both a fish out-migration passage barrier, as well as an under-sized structure that creates significant sediment delivery during high flow events. WE's 27; 84; and 186 would be utilized in the drainage of East Fork Potlatch River where multiple locations of culvert barriers exist on logging roads. WE 184 would be employed to assist with the removal of an abandoned dam in the town of Troy, Idaho. Much work has

already been initiated on this project over the past few years by Latah SWCD; NRCS; IDFG and the City of Troy. Initial engineering surveys and cultural resources surveys have been completed. Funding of the structure's removal is delaying the opening of 6-8 miles of stream habitat for anadromous fish. WE 30 would be used, as it has been successfully in the past by Latah SWCD, to redirect flows from manipulated, channelized stream sections back to the original, naturally meandering stream segments. Latah SWCD has successfully accomplished this in the Potlatch system at its Corral Creek site.

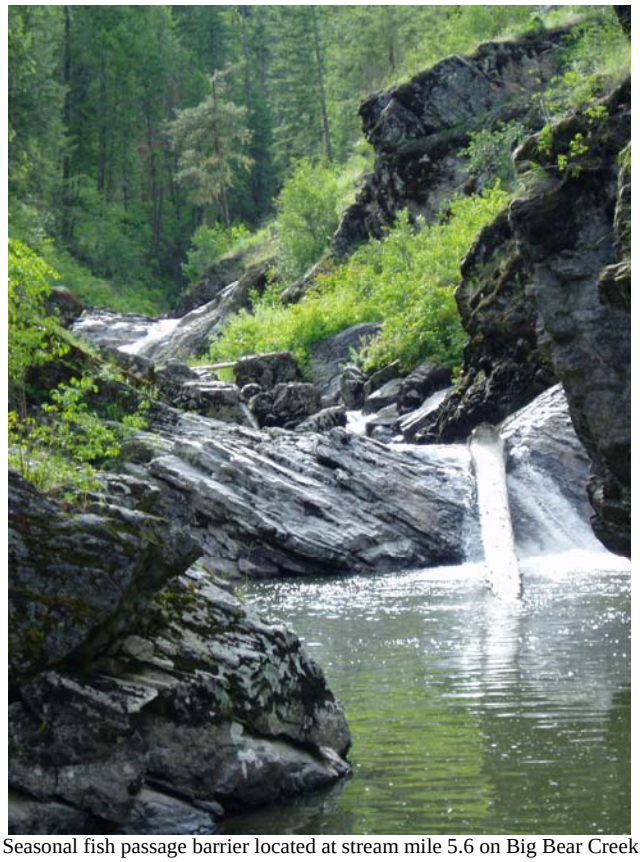
WE 27 is to be utilized as it has been by Latah SWCD on numerous other projects funded via sources other than BPA. It is used only in very specific, limited, point locations where debris has accumulated so as to deflect stream flows such that inordinate amounts of bank erosion occurs resulting in deleterious amounts of sedimentation to the stream. One exception of note would be the Pine Creek bridge site where a significant amount of man-made debris has accumulated from abandoned outbuildings and ill-advised dozer excavation by private individuals.


Inappropriate bulldozing of stream has created channelization, lack of pools, and excess large cobble bed load (photos taken just upstream from Pine Creek bridge)

All WE's are designed to continue the amelioration and enhancement of the entire watershed for all limiting factors as defined by the Potlatch River Watershed Management Plan, and the multitude of state and federal agencies whom have studied, monitored, and continue to monitor the health of the Potlatch River. Specific lat/long locations for all of the above sites have already been provided.


Examples of healthy pool habitat within the Potlatch River watershed. The goal of the Latah SWCD, is the recreation of such habitat on degraded stream segments within the Potlatch River system.

Regarding the “natural passage barrier at stream mile 5.6” on Big Bear Creek: It should be noted that the passage is actually a seasonal passage barrier. Refer to the IDFG Potlatch River Basin-Fisheries Inventory of Latah, Clearwater, and Nez Perce Counties, 2003 – 2004 (p.11). Senior Technician Brett Bowersox, and Regional Fisheries Biologist, Nathan Bindza, have stated that steelhead have been documented above the seasonal barrier, however, at a lower number than below it. This is not unprecedented or even uncommon in certain streams. The publication listed above, actually has a photo on its cover of the barrier in question. The barrier can best be described as a sharp cascade with a 5-6’ drop at the bottom. The barrier has been surveyed by IDFG, and longitudinal and lateral profiles of the site are available through them.



Seasonal fish passage barrier located at stream mile 5.6 on Big Bear Creek

Each tributary of the Potlatch system is critical in so much as, in recent years, the steelhead population in the Potlatch River has been found to be genetically distinct from other local populations (Byrne 2005). In the 2007 annual report of the Potlatch River Steelhead Monitoring and Evaluation, high summer temperatures, lack of riparian habitat, high sediment loads, and low densities of in-stream structure were identified as the limiting factors for steelhead. However, despite these limiting factors, it does currently still support a population of wild steelhead. General distribution and abundance data has been gathered by various sources such as Schriever and Nelson in 1999; and, Bowersox and Brindza in 2005. Information is more limited on levels of productivity, production, and life history strategies for the Potlatch River steelhead population. However, that

situation should change significantly with the major expansion of the study and monitoring program (PRSME) by IDF&G.

3.) M & E (sections G and F)

The new IDFG steelhead population study and monitoring plan currently utilizes the following methods:

- Mark-recap adult estimation using Maximum Likelihood Bailey bootstrap method for adult escapement above 4 weirs.
- Mark-recap juvenile out migration estimation at two screw trap locations below weirs.
- Assign age class to juvenile out migration in order to establish juvenile production by brood year, and then assign a productivity estimate of recruits/spawner for brood years
- Mark-recap juvenile out migration estimate using maximum likelihood/Gauss software.
- Survival to LWG and throughout Columbia estimated through SURPH program.
- Juvenile instream densities estimated through mark-resight snorkeling.
- All survey sites chosen through EMAP protocol
- Habitat surveys following Harrelson et al survey design

The work conducted by the new IDFG study is peer reviewed by the Clearwater Technical Team, Core Review Team, Pacific Coastal Salmon Recovery Board of Idaho, and NOAA Fisheries Intensively Monitored Watershed Program. The study and the information it yields are measured against the goals set by USFWS for steelhead populations in the Potlatch, and the recovery plans documented in the Technical Recovery Team (TRT). There are two annual reports generated by IDFG on the lower Potlatch River work, which are currently in final draft. They should be available soon, followed by the 2008 annual report that contains upper Potlatch information which is still being written.

The importance of the continued restoration work in the Potlatch River system cannot be underestimated. Neither can it viewed as lacking support when the bibliography of agencies currently studying and/or monitoring the water quality, habitat, and fishery is considered. More importantly, however, is the dedication and interest by the local, private landowners in seeing the Potlatch River system restored to its greatest possible natural condition. The desire for a stable, robust and thriving steelhead population is very highly sought after by the citizens of Latah County.

4.) Overall Comments – benefit to F & W (all proposal)

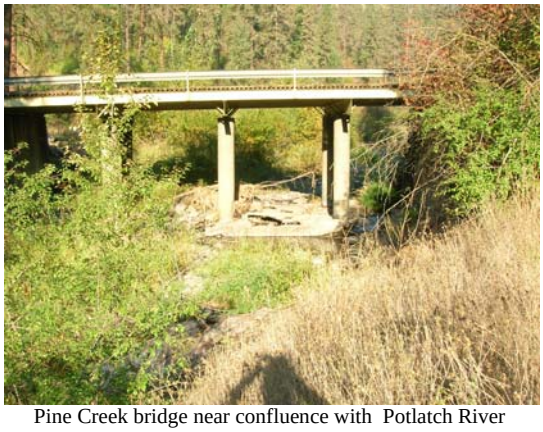
WE 27: Location(s): Pine Creek 46.85 N, -116.64 W and various specific locations TBD in the East Fork Potlatch River drainage where culverts have become malfunctioning.

Justification: Out-migration barrier currently entraps steelhead due to man-made obstructions on and around Pine Creek bridge. Improperly installed and/or sized culverts on logging roads create blockages in the East Fork Potlatch River drainage.

Expected Benefits: Open out-migration barrier for steelhead in Pine Creek, and enhanced migration and expanded spawning areas for steelhead in the East Fork Potlatch River.

Monitoring: IDFG, IDEQ, Latah SWCD, USGS, IASCD

Seasonal out-migration barrier at Pine Creek bridge



Pine Creek bridge near confluence with Potlatch River

WE 29: Location(s): Corral Creek 46.81N, -116.48W; Avulsion Reach and Round Meadow 46.82N, -116.48W

Justification: Potlatch River Watershed Management Plan has shown this area needs increased habitat complexity. Especially lacking in this area is riparian vegetation; stream meanders and pools, LOD/LWD, cattle exclusion and reduction of sediments and nutrients to the stream.

Expected Benefits: Overall betterment of stream and riparian parameters for fish habitat, and to increase watershed spawning territory above recently removed barrier.

Monitoring: IDFG, IDEQ, Latah SWCD, IASCD

Typically eroding channel entering Corral Creek


Similar formally eroding channel after restoration by Latah SWCD

WE 30: Location(s): Tee Meadows 46.84N, -116.48W; Corral Creek 46.81N, -116.48W; Avulsion Reach and Round Meadow 46.82N, -116.48W

Justification: Stream reach has been channelized. Current straightened reach follows abandoned road/railroad bed and is undergoing substantial bank erosion and sloughing. Stream needs to be reconnected to its original natural meandering channel as was accomplished lower in the watershed.

Expected Benefits: Overall enhancement of the stream and riparian habitat for steelhead, and a more naturally functioning system with reduction of sediment delivery and lowering of water temperatures.

Monitoring: IDFG, Latah SWCD


Degraded stream segment delivering excess sediment


Excess sediment delivery halted after restoration

WE 33: Location(s): Tee Meadows 46.84N, -116.48W; Round Meadow 46.82N, -116.48W

Justification: Abandoned road/railroad bed allows stream to run in channelized fashion along side. Road needs to be placed away from riparian zone, and natural channel needs to be engaged to produce stream meanders and vegetation, as well as reducing sediment detachment and transport from existing road.

Expected Benefits: Less sediment delivery to stream; more naturally functioning stream system with meanders, pools, and shading.

Monitoring: IDFG, Latah SWCD,IASCD

Channelized stream segments along improperly placed road and abandoned railroad bed.

WE 84: Location(s): East Fork Potlatch River (TBD); Pine Creek bridge 46.85N, -116.64W

Justification: Many culverts currently exist in the East Fork Potlatch River drainage that are improperly installed with berms or other obstructions that have formed. As such, those culverts pose fish barriers in many cases, and also create sediment load to the streams. Potlatch Corporation has pledged to survey and select the most crucial ones for replacement with assistance from Latah SWCD. All new installation will be done according to "fish friendly" culvert designs and construction. Pine Creek was inappropriately bulldozed during the floods of 1996 by an uninformed landowner. Large cobble deposits remain, as do sizeable dikes of boulders and cobbles. These deposits divert flows to areas that are now causing erosion, create a source of excess bedload, misdirect the natural stream flow, and are creating a lack of defined channel integrity.

Expected Benefits: Less sediment delivery to streams and greater watershed access for steelhead, and more naturally functioning stream channel systems.

Monitoring: IDFG, Latah SWCD, IASCD, IDEQ


Defective culverts in the East Fork Potlatch River watershed

WE 181: Location(s): Tee Meadows 46.84N, -116.48W; Corral Creek 46.81N, -116.48W; Avulsion Reach and Round Meadow 46.82N, -116.48W

Justification: Eroded banks and straightened channel which increase sediment delivery and lower water table in surrounding meadow. Meanders, pool habitat, cattle exclusion, riparian plantings, root wads or other LOD are needed components to assist with restoration of this site.

Expected Benefits: Improved steelhead spawning and rearing habitat, and restored meadow hydrology contributing to longer, cooler flows and subsequent improved pool habitat.

Monitoring: IDFG, Latah SWCD

Typical scour and gully erosion along segment of stream needing cattle exclusion, revegetation of riparian area, etc.

Planting materials ready for a day of riparian restoration

Scour erosion treatment and protection for new riparian tree and shrub plantings.

Revegetation in a former scour area

WE 184: Location(s): Troy Dam 46.44N, -116.47W

Justification: Remnants of an old reservoir dam have been blocking fish passage for many years. Much interest exists for correcting this site. Considerable time, effort and resources have already been invested in consideration of this site. Efforts remain ongoing. Planning, designs, and cost estimates need to be completed prior to actual construction.

Expected Benefits: Removal of the barrier should open up to 6 miles of viable steelhead habitat.

Monitoring: City of Troy; IDFG, IDEQ, Latah SWCD, IASCD

Fish passage barrier created by the remnants of old Troy reservoir dam on West Fork Little Bear Creek

WE 186: Location(s): East Fork Potlatch River (TBD); Pine Creek bridge 46.85N, -116.64W; Corral Creek 46.81N, -116.48W

Justification: It is important to maintain exclusion fencing, riparian plantings, and inspect for any new erosion sources. Without follow up and maintenance, the integrity of the practices put in place and the funding allocated for them can be at risk.

Expected Benefits: Protection of the stream system via due vigilance of the practices installed, and thereby, legitimizing both the funding and the functionality of the practices.

Monitoring: Latah SWCD, IDFG, IASCD

Photo monitoring by Latah SWCD of cattle exclusion fencing on Pig Creek tributary to Little Boulder Creek

Pig Creek segment protected by cattle exclusion fencing

Bibliography

Bowersox, Brett and Brindza, Nathan: Potlatch River Basin—Fisheries Inventory. Latah, Clearwater, and Nez Perce Counties, Idaho 2003 – 2004.

Bowersox, Brett: Potlatch River Steelhead Monitoring and Evaluation—Annual Report 2007. Pacific Coast Salmon Recovery Funds, Contract # 05 052 CW

Rich, Bruce A. and Petrosky, Charles E.: Fisheries Research Section, Project Number 9 1-73. February 1994.

Potlatch River Watershed Management Plan. Sponsored by: Latah Soil and Water Conservation District. Prepared by: Resource Planning Unlimited, Inc. October 2007

April 10, 2009

Tony Grover
Fish and Wildlife Division Director
Northwest Power and Conservation Council
851 SW 6th Avenue, Suite 100
Portland, Oregon 97204

RE: Response to ISRP Memorandum 2009-8 (March 27, 2009)

Dear Mr. Grover:

Attached is supplemental information for your consideration. The attachment is a response to the Independent Scientific Review Panel's Memorandum 2009-8 of March 27, 2009. This information should be considered complementary information to the site-specific information we provide on February 18, 2009.

If you need additional information, please contact me at your earliest convenience.

With regards,

Kenneth Stinson
District Manager
kstinson@latahsoil.org
208.882.4960 x118

Enclosures:
- Latah SWCD Response to ISRP Memorandum 2009-8 – April 10, 2009
- NOAA Memorandum from Bob Reis – April 8, 2009
- ISRP Memorandum 2009-8 – March 27, 2009
- Latah SWCD Response to ISRP's Request for Additional Information – February 18, 2009
- ISRP Memorandum – December 29, 2008

Copies:
- Mark Fritch, NWPCC
- Jeff Allen, NWPCC

Latah Soil and Water Conservation District
Response to ISRP Memorandum 2009-8 (March 27, 2009)

Background and Rationale for Request of Additional Work Elements

The Latah Soil and Water Conservation District (Latah SWCD) was funded by the Bonneville Power Administration (BPA) for project #200206100. The project is titled: *Restore Potlatch River Watershed.*

As stated in the short description included with the project proposal, the purpose of this project is to implement the Potlatch River Watershed Management Plan with a focus on restoration of A-run steelhead spawning and rearing habitat through the implementation of best management practices on private agricultural, forest and range lands.[1]

Within the Potlatch River Watershed Management Plan, streams were prioritized for restoration practices.[2] The prioritization process was based on a fisheries inventory and associated modeling undertaken by the Idaho Department of Fish and Game (IDFG).[3]

Within each priority watershed within the Potlatch River system, three land types were identified (canyon, agricultural uplands, and forest). Within each land type, five general categories of restoration strategies were identified. These restoration strategies included:

- Restore Riparian/Floodplain Areas
- Restore Meadow/Wetland Systems
- Restore Upland Ecosystem Functions
- Eliminate Migration Barriers
- Develop Artificial Water Retention Facilities

Within each restoration strategy category, five issues were considered by a technical review team with respect to determining the level of investment public agencies should make with regard to implementing the restoration strategy.[4] The first issue outlined for consideration by watershed/land type/restoration strategy was the issue entitled: *Steelhead Production Response Potential*.

As an example, the technical review team considered the steelhead response potential if riparian/floodplain areas were restored within the forest land type of Corral Creek. The technical review team would rank the response on a scale of 1 (low), 3, or 5 (high). Deference for determining steelhead response potential was given to the fish biologists on the technical review team. These fish biologists are from National Oceanic and Atmospheric Administration (NOAA) Fisheries, USDA Natural Resources Conservation

[1] See http://www.cbfwa.org/solicitation/components/forms/Proposal.cfm?PropID=650#sect10
[2] See Chapter 7/Page 7 of the Potlatch River Watershed Management Plan located at http://www.latahsoil.org/id50.html
[3] The IDFG inventory is located at https://research.idfg.idaho.gov/Fisheries%20Research%20Reports/Volume%20151_Article%2002.pdf
[4] See Appendix F of the Potlatch River Watershed Management Plan.

Service (NRCS), and IDFG. Each of the fish biologists associated with the technical review team has direct experience working within the Potlatch River drainage. The technical review team also included project planners, foresters, engineers and project managers.

Once this process was completed, the defined restoration priorities per watershed/land type determined where the Latah SWCD and other state and federal collaborating conservation agencies should focus their individual and/or collective habitat restoration activities, including riparian restoration practices. This peer evaluation process is the cornerstone of the Potlatch River Watershed Management Plan. This process for evaluating restoration priorities is repeated as new information becomes available to the technical review team. The most recent peer evaluation process took place in early 2009.

In summary, the additional work elements requested by the Latah SWCD are needed to fully implement the peer-reviewed priorities within the Potlatch River Watershed Management Plan. This peer evaluation process has identified the areas for additional riparian restoration work as detailed in Latah SWCD's February 18, 2009 response to the Independent Scientific Review Panel's (ISRP) December 29, 2008, request for detailed site information.

Latah SWCD believes the ISRP is supportive of the project evaluation processes outlined in the Potlatch River Watershed Management Plan. The original FY07/09 proposal submitted by Latah SWCD received a "fundable" recommendation from the ISRP with the following comments related to project assessments and priorities:

> "The ISRP is pleased to see stronger ties to fish and aquatic habitat here than in most SWCD proposals; this still works to implement Best Management Practices, but the authors have done an assessment and prioritized the tributaries with an understanding of what needs to be worked on first. This is a very strong point of this proposal. They used information from their assessment to actually inform their current understanding; i.e., some of the assessment data changed their minds. There is also a strong working connection, not just lip service, to IDFG steelhead studies on the Potlatch system."[5]

The original FY07/09 project proposal focused best management practices (BMPs) on riparian and upland practices that included[6]:

- Riparian plantings using native grasses, shrubs and tree species (Objective A, page 19)[7]
- Continuous direct seeding systems (Objective A, page 19)
- Erosion/sediment control structures (Objective A, page 19)

[5] See http://www.nwcouncil.org/fw/budget/2007/reviews_detail.asp?id=650.
[6] See http://www.cbfwa.org/solicitation/components/forms/Proposal.cfm?PropID=650 for a copy of the Section 10 Narrative.
[7] The page numbers relate to the Section 10 Narrative of the FY07/09 proposal located at http://www.cbfwa.org/solicitation/components/forms/Proposal.cfm?PropID=650.

- Livestock exclusion fencing (Objective B, page 23)
- Livestock off-site watering facilities (Objective B, page 23)
- Riparian plantings and/or channel restoration on pasture and rangelands (Objective B, page 23)
- Coordinate project plans to eliminate passage barriers (Objective D, page 24)

The following work elements related to best management practices are currently under contract (#35708) with BPA:

- WE 55 – Upland Erosion and Sedimentation Control
- WE 47 – Plant Vegetation
- WE 40 – Install Fence
- WE 34 – Develop Alternative Water Source
- WE 22 – Maintain Vegetation
- WE 38 – Improve Road

The Latah SWCD continues to implement best management practices related to the six work elements listed above.

The following work elements related to site-specific project planning are currently under contract with BPA:

- WE 122 – Provide Technical Review (passage barriers)
- WE 114 – Identify and Select Projects (review individual restoration sites)
- WE 174 – Produce Plan (revise Potlatch River Watershed Restoration Plan)

Latah SWCD uses multiple funding sources to restore wild steelhead habitat throughout the Potlatch River. Latah SWCD has undertaken extensive in-stream channel work with non-BPA funds (e.g., NOAA Pacific Coast Salmon Recovery Fund (PCSRF)). Examples of these past efforts are highlighted in Latah SWCD's letter of February 18, 2009.

Within the February 18 letter, passage barrier removal is highlighted in figures 6-9 (p.4), channel reconstruction is shown in figures 27-28 (p. 13) and livestock exclusion fencing is noted in figure 30 (p.14). These restoration efforts have been reviewed and endorsed by IDFG and NOAA Fisheries fish biologists. The projects are planned and engineered by a contract engineering firm and have gone through consultation and ESA compliance review. The engineer/project manager with the engineering firm is a registered professional engineer with 16 years of stream restoration experience and has extensive experience with fish passage and habitat rehabilitation projects.

While undertaking restoration work throughout the Potlatch River drainage, and as Latah SWCD implemented the three site-specific project planning work elements noted above, it became clear to Latah SWCD staff, participating fish biologists, project engineers and private landowners that additional riparian and upland restoration work will be needed to address the limiting factors within the Potlatch River drainage related to spawning and rearing habitat for wild steelhead.

As noted in Chapter 7/page 8, of the Potlatch River Watershed Management Plan, primary limiting factors to steelhead rearing and spawning within the Potlatch River include: high water temperature, high flashy stream flows, low summer base flows, lack of complexity in stream composition, migration barriers and sedimentation.[8]

However, when Latah SWCD sought to initiate the early stages of project planning related to various riparian sites that warranted additional restoration work beyond the previously contracted work elements (e.g., WE 47 – Plant Vegetation), BPA contract management staff were of the opinion that Latah SWCD could not undertake detailed project planning work using BPA contract funds until related work elements were added to the existing Latah SWCD contract.

Due to this contract restriction, Latah SWCD initiated the process outlined by BPA to request the addition of several work elements to the existing contract in order to allow Latah SWCD to initiate site planning and engineering under the current contract, and allow for possible implementation of riparian BMPs in current and future contract periods. In collaboration with BPA staff, Latah SWCD requested the addition of the following work elements in order to effectively combine critical riparian and instream restoration actions with existing upland BMPs already under contract:

- WE 27 – Remove Debris
- WE 29 – Increase In-stream Habitat Complexity
- WE 30 – Realign, Connect, and/or Create Channel
- WE 33 – Decommission Road/Relocate Road
- WE 84 – Remove/Install Diversion
- WE 181 – Create, Restore, and/or Enhance Wetland
- WE 184 – Install Fish Passage Structure
- WE 186 – Operate and Maintain Habitat/Passage/Structure

On June 25, 2008, the Latah SWCD made a request to the Budget Oversight Group (BOG) for consideration of these additional work elements. On July 9, 2008, the BOG considered this request. The BOG suggested the Latah SWCD request would need to define connections to the Idaho Accords[9] and undergo an ISRP review.

[8] A copy of the Potlatch River Watershed Management Plan is located at http://www.latahsoil.org/sitebuildercontent/sitebuilderfiles/PotlatchRiverManagementPlanChp7Oct2007.pdf .

[9] The Memorandum of Agreement between the State of Idaho and the Bonneville Power Administration can be found at http://www.salmonrecovery.gov/Biological_opinions/FCRPS/2008_biop/docs/ID_MOA_Final.pdf . Project #7 within the Accord is entitled: *Lower Clearwater/Potlatch River Watershed Management Plan Implementation.* Accord Project #7 would include riparian and floodplain restoration and enhancement, riparian and floodplain conservation easements, acquisitions, reconnecting tributaries, removing migration barriers, instream habitat enhancement, summer streamflow improvement. See Attachment B of the Accord.

On November 20, 2008, the Northwest Power and Conservation Council (Council) recommended the requested change in scope proposed by Latah SWCD be reviewed by the ISRP and noted the proposed actions would be related to actions "addressed in the recently signed Memorandum of Agreement between the State of Idaho and the FCRPS action agencies".

On December 29, 2008, the ISRP responded to the information related to Latah SWCD's request for additional work elements. In the concluding remarks of the review, the ISRP memorandum states:

> "The ISRP believes this project is on the right track and should produce real benefits to A-run steelhead, especially when upland treatments already underway are combined with riparian and instream restoration actions. Addition of more details (and photos, if available) about the work being contemplated, including explicit location, justification, expected benefits, and a more detailed monitoring plan, will enable us to evaluate the scientific merits of the proposal".

As noted previously, the request for these additional contractual work elements is necessary in order to allow the Latah SWCD to use BPA funds to initiate project site planning, engineering, consultation, and permitting. The project areas have been identified and the specific and restoration and management practices have been proposed based on Latah SWCD, NOAA Fisheries, IDFG and other conservation agencies previous BPA and PCSRF funded work in these areas. BMPs associated with the requested work elements have been endorsed by affected landowners, Latah SWCD staff and policy representatives, support agency fish biologists, and project engineers. An April 8, 2009, supporting memorandum from NOAA is attached.

On February 18, 2009, Latah SWCD responded to ISRP's request for additional information. The response highlighted the proposed project areas, and included photographs of similar projects Latah SWCD had completed to highlight the types of work being contemplated in specific watersheds that would be accomplished with future BPA funding, upon approval of the proposed work elements.

On March 27, 2009, the ISRP responded to the additional information provided by Latah SWCD.[10] The following concluding statement is made within the ISRP response:

> "In December, we stated that the project is on the right track and should produce real benefits to A-run steelhead, especially when upland treatments already underway are combined with riparian and instream restoration actions. The additional information provided was only partially sufficient to justify the proposed actions" (p. 5).

The March 27 memorandum also made the following statements with respect to each of the proposed work elements:

[10] See http://www.nwcouncil.org/library/isrp/isrp2009-8.htm .

> "Several of the work elements appear reasonably justified, including WE 27, WE 33, WE 186, and probably WE 84 (although the benefits expected from replacing old culverts with 'fish friendly' culverts were not adequately justified). The other work elements – Big Bear Creek cascade fish passage improvement, WE 29, WE 30, WE 181, and WE 184 – were not described in such a way that the ISRP could fully appreciate and support the ecological justification for the bioengineering approach that has been or will be employed" (p.2).

The following information is presented to the ISRP, Council, and BPA for additional consideration of the proposed work elements that may need additional clarification as noted in the ISRP memorandum of March 27. The information provided here is related specifically to the following work elements:

- WE 29 – Increase In-stream Habitat Complexity
- WE 30 – Realign, Connect, and/or Create Channel
- WE 181 – Create, Restore, and/or Enhance Wetland
- WE 184 – Install Fish Passage Structure

Once again, Latah SWCD is requesting the addition of these work elements so site-specific project planning, engineering, permitting, and consultation can be initiated within the current and future contract periods. Without the addition of these work elements, BPA has argued it will not allow Latah SWCD to use BPA contract funds to undertake site reviews, project planning with affected landowners, design work, permitting and consultation.

The remainder of this response highlights specific ISRP comments within the March 29 memorandum. For each ISRP comment, a response is developed in an effort to provide enough additional information to ISRP, Council, and BPA to facilitate full consideration of Latah SWCD's request to add these four work elements. The highlighted comments and responses are related to work elements 29, 30, 181, and 184.

Based on the March 27 memorandum, Latah SWCD assumes the ISRP, Council, and BPA will be able to support the addition of work elements 27, 33, 186, and 84 and, therefore, no additional responses are provided by Latah SWCD regarding those work elements.

Finally, it should be noted that Latah SWCD is simply seeking BPA's authorization to allow for the option of planning, designing and implementing, when appropriate, additional critical riparian BMPs within the Potlatch River system that effectively and efficiently address known limiting factors related to wild steelhead spawning and rearing habitat. The Latah SWCD response of February 18 identified project areas where Latah SWCD would like to focus planning, design and implementation efforts once the needed work elements are supported by ISRP, Council, and BPA.

Responses to ISRP Comments within Memorandum 2009-8 (March 27, 2009)

1. Technical Justification, Program Significance and Consistency, and Project Relationships (sections B-D)

ISRP Comment #1 - The response does not present direct evidence that pools in the lower Potlatch tributaries are cooler than in other habitat types… based on information in the response, the argument that pool creation would mitigate high stream temperatures rests on theoretical assumptions. (paragraph 1, p. 3)

> **Latah SWCD Response # 1** - Pool temperatures in the Potlatch River Drainage are empirical and not based on theoretical assumptions. Multiple habitat and fish population inventories conducted in the past several years throughout the Potlatch River Drainage have found that a large number of tributaries where steelhead are abundant have intermittent flows in summer and early fall. In seasons of no or low flows, juvenile steelhead are found almost exclusively in pools, but not all pools contain fish.
>
> The IDFG 2003-2004 fish survey[11] made the following statement:
>
> > "Maintaining existing pool habitats and allowing for the formation of additional pools within the stream channel is likely important to maintaining rainbow/steelhead trout production in the later portions of the summer and fall in indicated by the Schriever and Nelson (1999)[12] observation". (p.21)
>
> When flows become intermittent, pools stratify into two types: backwater pools created by flow obstructions, and scour pools that are deeper than base flow elevations. Waters in the backwater pools are generally stagnant or nearly so, and reach high temperatures that are often above 23°C for extended periods. Temperatures in backwater pools are driven primarily by air temperature, solar insolation, pool depth, and geographic aspect. Waters in the scour pools are fed entirely or predominantly by subsurface water with cooler temperatures that primarily vary in direct proportion to the amount of discharge, and secondarily with the same factors affecting backwater pools. Water temperature differences as large as 10°C to 15°C can often be observed in deep scour pools and other portions of the streams. These scour pools, most of which occur in the unaltered portions of stream systems, are also often well-shaded by native woody shrubs, with as much as 100 percent canopy cover, which further enhances cool temperatures.

[11] See https://research.idfg.idaho.gov/Fisheries%20Research%20Reports/Volume%20151_Article%2002.pdf

[12] Schriever E. and D. Nelson. 1999. Potlatch River basin fisheries inventory; Latah, Clearwater, and Nez Perce Counties, Idaho. Idaho Department of Fish and Game Technical Report 160 p.

Fish surveys in summer (cited above) consistently find steelhead concentrated in a small number of pools where there is abundant subsurface discharge. Under today's climate, it appears unlikely that steelhead populations would persist in most of the Lower Clearwater River Drainage if not for thermal refugia created by deep scour pools. It is important to keep in mind that the steelhead habitat in the inland reaches of Idaho differs greatly from the coastal habitats. Geography, hydrology, and climate function in a dramatically distinct way from the more commonly intuitive perceptions of the coastal areas. Further, stream flows in the Potlatch River drainage have been altered substantially by agricultural practices and roadbed construction, and by a gradual shift in the hydrologic regimes over the past 40 years, from systems driven largely by snow-melt to present-day regimes driven by rain or a mixture of rain and snow. Available USGS gage data shows a distinct trend toward earlier peak flows of decreasing magnitude and a tendency for streams to go dry in summer.[13] Weather stations in the region show a trend toward warmer winters and lower snow packs.

A significant portion of the Potlatch River drainage was historically managed for commercial timber using railroad logging. Streams were often used as skid trails, or if they could not be used as a skid trails, the streams were sometimes deliberately rerouted into drainage ditches, or avulsed into borrow ditches. These legacy effects have left numerous streams devoid of natural meanders and woody debris that would have created scour pools. With these types of alterations, the most effective means of rehabilitation is to reestablish processes that create pools through scour and deposition associated with meander formation and woody debris. Debris placement provides a short-term function until more natural riparian vegetation is reestablished. In some instances, it is necessary to use intense bioengineering on small tributaries and/or drainage ditches to reduce excessive sediment load delivery to the larger, spawning streams. Examples of this were shown in photos #18 and 20 of the Latah SWCD response to ISRP, dated February 18, 2009. All such treatment designs include revegetation with appropriate native riparian plants.

ISRP Comment #2 - ". . .to what extent [will] the proposed investments on streams flowing through private lands will be protected (by easements, changes in livestock management, etc.) in the future. The response did not address this question". (paragraph 2, p.3)

Latah SWCD Response #2 - This element varies on different properties and is managed on a site-specific basis. Many times, the fencing or pasture management projects are funded separately from riparian or channel restoration actions, so the protective measures may not be apparent. Latah SWCD does not seek easements unless a third party has authority to monitor compliance. When possible, Latah SWCD works with agencies such as the Natural Resources Conservation Service

[13] BPA funds are used to maintain the USGS gauge at the mouth of the Potlatch River. See http://waterdata.usgs.gov/id/nwis/uv?dd_cd=01&dd_cd=02&format=gif&period=7&site_no=13341570

(NRCS) and the Idaho Department of Idaho Fish and Game (IDFG), which can retain oversight of easements, but this type of opportunity is rare, and many important restoration opportunities would be lost if this were an overarching constraint. All conservation plans and contractual agreements, however, between Latah SWCD and landowners, explicitly require the installation work to be maintained by the landowner for the life of the practice(s) listed in the plan and contract.

There is a long-established working relationship with many landowners in the area, and Latah SWCD focuses efforts on landowners with an established history of sound stewardship. Latah SWCD seeks opportunities where improved pasture or forest management offers an economic incentive to the landowner, while at the same time, protects riparian areas from overgrazing. This provides a high level of assurance that restoration projects will be valued and maintained. Some restoration projects have been turned down by Latah SWCD in circumstances where the landowner is reluctant to take steps to assure that restoration projects will be protected.

In some locations, cattle are excluded by fencing, steep topography, shrub thickets that prevent access to streams, or dense tree stands that provide no food source. In other locations, existing cattle management could detract from or entirely thwart restoration efforts. Latah SWCD works with landowners to adjust grazing problems where they conflict with restoration actions. Adjustments to grazing practices are most often made through exclusion from riparian areas by fencing or pasture rotations that restrict the timing and duration of grazing to levels that allow natural vegetation to persist, flourish, or be reestablished, as needed. Continuation of management adjustments and practices, and maintenance of restoration work are required through long-term conservation plans and contracts with the Latah SWCD. If conservation easement protection is feasible, the appropriate management and maintenance requirements would be detailed in the easement document.

* * *

2. Objectives, Work Elements, and Methods (section F)

ISRP Comment #3 - "The response did not directly answer the question about what was meant by increasing riparian habitat complexity". (paragraph 4, p.3)

Latah SWCD Response #3 - The title used by BPA to describe this work element is a little vague. A better description is *rehabilitation of natural processes that form riffles, pools and other habitat features used by steelhead, that have been lost via legacy impacts.* In these particular meadow systems,

natural geomorphic processes are driven largely by the characteristics of riparian vegetation, which provides numerous functions such as roots for bank stability, shade, cover, and most importantly, variation in hydraulic roughness that is needed to reinitiate scouring, deposition, and meander formation. Many Potlatch River tributaries in meadow systems have severe legacy impacts. A common problem is loss of the shrub or tree component, coupled with streambank instability caused by cattle or past operation of machinery. In many places, meadows were also drained by ditches that eventually captured the entire stream, and even the largest floods are not capable of breaching the levees.

Past examples of both passive and active restoration of riparian vegetation have demonstrated the effectiveness of this activity in restoring channels and channel-forming processes. Cattle exclusion monitoring on US Forest Service land demonstrates that these meadow systems have a remarkable ability to heal themselves once riparian vegetation becomes reestablished. After roughly 15 years, where the protected channel leaves the exclusion, the channel elevation is typically a foot higher in elevation than it is in the downstream degraded channel, while the width-to-depth ratio is nearly the inverse of the degraded channel. The rehabilitated channel typically maintains perennial surface flows at times when the unprotected and degraded downstream channel is intermittent.

ISRP Comment #4 - "Many of the site restoration efforts involved intensive bio-engineering, as opposed to passive restoration, and the need for continued maintenance (if necessary) was not discussed". (paragraph 4, p.3)

Latah SWCD Response #4 - As mentioned previously in this document, legacy impacts in some locations are particularly severe. Active restoration is used in limited circumstances where the present channel is unable to make natural adjustment due to confinement by roads or abandoned railroad prisms, or where streams have been rerouted into drainage ditches. These projects incorporate the minimum of bioengineering work needed to repair eroding banks or return flows to existing high quality channel reaches, and always include revegetation. Where feasible, abandoned degraded channels are designed to function as off-channel wetlands to enhance infiltration and improve meadow hydrology. In addition, designs are developed so as to require minimal future maintenance by promoting natural functions that take over within a year or two after the project is completed.

As stated previously, intensive bioengineering is often utilized in eroding minor tributaries of a spawning stream, or to install a channel plug to divert flows out of straight, wide, sparsely-vegetated ditches and back into the sinuous, narrower, well-vegetated unaltered, longer stream channel. The bioengineering structures are designed to be as "soft" as possible, and incorporate sedge mats, willow poles and herbaceous riparian plants. The structures limited to strategic locations that can accomplish the intended objectives and are not installed with the intention of converting that specific location into spawning or rearing habitat. Rather these

structures are installed as a means of controlling erosion and excessive sediment delivery to the key stream areas or to divert flow from wide, straight, downcut ditches back into suitable spawning and rearing areas of unaltered channel reaches.

Another main objective is to restore meadow hydrology to reduce the quick outflow of water from the system through the straight ditches; restoring flows to the sinuous, well-vegetated reaches will reduce escapement, increase storage, and yield prolonged base flows for cooler temperatures in pools. Also, as previously stated, maintenance of all installation work is mandated by contractual agreement with the landowner for the duration of the life of the practice(s).

ISRP Comment #5 - "Although we agreed with actions calling for artificial migration barrier removals, we wondered whether the Conservation District planned to provide adult migration at a natural passage barrier (which the ISRP generally does not support) at stream mile 5.6 of Big Bear Creek – the top priority subwatershed." (paragraph 5, p. 3-4) "The response does not state whether Latah SWCD still wishes to improve fish passage around this natural stream feature". (paragraph 2, p.4)

Latah SWCD Response #5 – There is no plan to address the seasonal passage barrier at stream mile 5.6 of Big Bear Creek. It is a natural barrier; however, it has been proven to be passable by at least some of the anadromous fish that encounter it. Given that anadromous fish have been identified above the barrier, there is no need to disturb or alter it this landform.

The response in the Latah SWCD February 19 letter was simply in response to the question ISRP presented in their December 29 memorandum which noted ISRP's concerns over the mention of the natural barrier in the "…Potlatch Management Plan." The seasonal passage barrier is to remain in its natural state.

ISRP Comment #6 - "The channel shown in Figure 20, however, appears suitable for neither steelhead spawning nor rearing as it is incised and seems to be lacking in suitable substrate and cover (also see Figure 18 for another example of a heavily bioengineered but deeply incised channel)". (paragraph 4, p.4)

Latah SWCD Response #6 – To expand further on this previously addressed issue, the reader should bear in mind that often these areas are reconstructed to enhance the larger stream system rather than done with the idea that salmon would spawn/rear in that exact spot. Reduction of sediment delivery, retention of flows, enhancement of hydrology, cooling of water temperatures, improvement of instream habitat complexity, reestablishment of vegetation for shading and woody debris recruitment, long range restoration of the watershed, the overall environment—both present and future, and a host of other factors are considered with respect to each particular location on the ground. Once again, this type of

work is necessary due to the specific site conditions, such as an actively eroding section, the past extreme alterations of the stream system, the soils and nature of the habitat in this region, and its vastly differing nature from, say, a coastal stream that receives consistent rainfall and subsequently has year round stream flows.

Tributaries to the Potlatch River pass though several distinct landforms, including the Palouse soil formation which is shown in the photos referenced by ISRP. The Palouse formation consists of fine-textured loess deposits that are 10s of meters in thickness. Stream channels in these thick deposits are highly erodible, composed of fine-textured materials, and they carry a massive volume of bedload. Upstream from the formation is Moscow Mountain, where excellent steelhead habitat is found. Streams cutting through the Palouse formation are used primarily as migration corridors, although there are occasional pools that are suitable for rearing. The streams upstream from the Palouse formation were historically used by steelhead, and adult steelhead are still commonly observed in some of these channels where the channels are still passable and have sufficient flows.

Degraded channels crossing the Palouse formation are a significant impediment to steelhead migration to headwater areas. Channels in this formation are highly responsive to floodplain alterations and presence or absence natural riparian vegetation. Past experience demonstrates that these streams can rapidly recover their natural morphology when floodplains and riparian shrubs or trees are reestablished. The natural channel form is a much narrower channel that has deeper water than present and much more vegetative cover. Steelhead are found far up into the headwaters of Moscow Mountain in drainages where these channel types have been restored or have not been substantially altered, and steelhead are generally absent in the headwaters upstream of severely altered channels.

ISRP Comment #7 - "The response does not indicate specifically how the WE 30 reaches will be restored and managed to retain conditions that will benefit this species. In particular, how are they expected to respond to natural disturbances such as floods? Will livestock be excluded from all such restored reaches?" (paragraph 4, p.4)

Latah SWCD Response #7 - There are multiple reaches that would be restored via work element 30, under a variety of different circumstances. All of the sites under this work element are low- to moderate-gradient meadows or valleys with considerable floodplain width, except for several locations where road or railroad embankments constrict the floodplain. Engineering designs are developed to improve access to the floodplain and take advantage of flood flows and restored hydrology. Flood flows are easily accommodated by the floodplains with little negative effect on stream channels that exhibit more natural characteristics. In places where the channels or floodplains have been substantially altered, the channels are prone to avulsion during high flow events. This avulsion risk would be addressed directly through site-specific features designed to dissipate stream

energy and shear stress for a sufficient amount of time to allow vegetation to become established and take over this role.

ISRP expressed concerns about future livestock management, which contributes to continuing exacerbation of the problems in situ. Livestock will be managed to reduce bank trampling, subsequent sediment delivery, nitrate contaminants; and denudation of the riparian vegetation. Livestock exclusion is a component of all riparian plans and contracts between Latah SWCD and landowners.

* * *

3. M&E (sections G and F)

ISRP Comment #8 - "In our December 2008 review, we noted that the Conservation District's November submittal referred to the FY2007-09 project description for details about the M&E plan; however, we had already stated that not enough information was given in that document. There was also mention of a new IDFG steelhead population study to include the Potlatch subbasin, but no further information was provided, including whether the IDFG monitoring would include the five target subwatersheds in this proposal." (paragraph 6, p.4)

Latah SWCD Response #8 – IDFG monitoring results are published in annual reports available online, and the agency provides Latah SWCD draft reports as soon as they are available. The Idaho Department of Fish and Game completed the 2007 Annual Report, Potlatch River Steelhead Monitoring and Evaluation in December 2008.[14] However, the final version was not available until it was posted to the IDFG research website on February 26, 2009. Therefore, the Latah SWCD was not able to include a link to the M&E report at the time of the February 18, 2009 response to ISRP. The report is linked in the footnote associated with this paragraph.

The study area of this report included the following watersheds: WF Little Bear Creek, Little Bear Creek, Big Bear Creek, Pine Creek, Corral Creek and Cedar Creek (See Figure 1, p.3).

ISRP Comment #9 - "The response did not give the impression that the Latah SWCD monitoring plan had been thoroughly thought out. For example, the response states that temperature loggers will be installed in select tributaries and a set of formal photo points will be placed in restoration sites, but no details of any kind were given (e.g., how many

[14] See IDFG Potlatch River Steelhead Monitoring and Evaluation 2007 Annual Report at https://research.idfg.idaho.gov/Fisheries%20Research%20Reports/08-139.pdf

loggers would be deployed, and where; how would the photo points be selected, and how frequently would they be re-visited?)." (paragraph 7, p. 4-5)

Latah SWCD Response #9 –

Over the past several years the Latah SWCD has conducted an on-the-ground enhanced stream assessment throughout many of the tributaries of the Potlatch Watershed. Results of the stream assessment were considered, along with instream habitat data and steelhead population data collected by IDFG, along with fish biologists' determination of potential for improvement, to prioritize streams and practices for restoration work. In addition, the results of the stream assessment form a baseline condition for those sites where riparian restoration work will be done. Several years following the restoration work the Latah SWCD will repeat the stream assessment.

The Latah SWCD adopted the NRCS Stream Visual Assessment Protocol (SVAP)[15], but enhanced it by collecting additional data, including channel type and morphology characteristics[16], substrate, bank and bed erosion, macroinvertebrate species and abundance, and composition and trend of riparian plant community.

The Latah SWCD has established approximately 40 active photo monitoring points established in pertinent watershed locations throughout the county. Another 35 to 45 photo point monitoring locations are scheduled to be added during the 2009 and 2010 seasons. Photo monitoring points are established for several reasons. Short-term (one to two year duration) photo point monitoring is used to document construction activities associated with bioengineering work or removal of passage barriers. For short-term photo-monitoring points, the photos are taken at a fixed, marked location, with the same camera, with the aperture set at a specific height, and taken at the same azimuth. Photos are repeated every few days during construction season and are designed to document site pre-construction, during construction, and following construction. Following completion of construction work selected points are converted to long-term photo point monitoring sites to capture ongoing changes that occur more slowly.

Long-term photo-monitoring points are established before construction work or within the first following year of a planting, for example, and are repeated over several years to capture changes that are harder to detect. This would include documentation of growth of plants in riparian plantings or stability and ongoing function of bioengineering structures such as ditch plugs installed to divert flow back into stream channels. For the long-term photo-monitoring points, the Latah

[15] See Stream Visual Assessment Protocol at http://www.nrcs.usda.gov/technical/ecs/aquatic/svapfnl.pdf

[16] Rosgen, D. 1996. Applied River Morphology. Wildland Hydrology.

SWCD follows the US Forest Service's Photo Point Monitoring Handbook protocol[17]. Since staffing capacity limits the number of photo points that can be repeated annually, the Latah SWCD selects representative planting sites and adds only a few new sites each year so that repeat visits can be staggered over several years. Planned revisits to planting photo points are the first, second or third, fifth or sixth, and 10th years following the planting work.

Stream channel restoration work photo points would include both short-term (during construction) and long-term photo points and are monitored on a similar schedule, but more intensively: first, second, third, fourth, fifth, eighth, and 10th years. Photos are used not only to detect changes but also are used to provide documentation for reports and to demonstrate restoration activities to the public through presentations, newsletter articles, and website postings.

Latah SWCD bioengineering planning includes the requirement of repeat visits by the design engineer during the first and second years, especially following the high flows in the first and second years' runoff seasons. The purpose of the repeat visits is to inspect stability and functioning of structures, and to determine whether any repairs or enhancements are needed.

Latah SWCD conducts plant survival surveys in conjunction with IDFG. Plants are tubed or marked with flags so they can be relocated in subsequent years, and survival data is collected by species and location on floodplain so that future planting decisions can improve species selection, survival, and use of time and funding.

One of the major challenges is restoring the hydrology of the system to ensure more, and cooler, water remains in the system for steelhead rearing habitat. The Latah SWCD is working at meadow locations in the upper tributaries to restore meadow/wetland systems. Often, these sites are adjacent to and within the same watershed as federal land with similar conditions. For example, the Clearwater National Forest (CNF), Potlatch Ranger District, is interested in implementing meadow restoration actions in Corral Creek similar to those planned by the Latah SWCD. The Latah SWCD has agreed to coordinate with the CNF in a hydrology monitoring study to be undertaken on both federal and private lands following meadow restoration work.

Early in the development of the Potlatch River Watershed Management Plan baseline water quality data was collected on most of the key steelhead tributaries of the Potlatch watershed. The Latah SWCD has coordinated with the Idaho Association of Soil Conservation Districts (IASCD), the Soil Conservation Commission (ISCC), and the Idaho Department of Agriculture (ISDA) in a multi-

[17] Hall, Frederick C. 2001. Photo Point Monitoring Handbook: Parts A and B. USDA Forest Service General Technical Report PNW-526, available at: http://www.fs.fed.us/pnw/pubs/gtr526/

pronged collection of data on flow, temperature, sediment and nutrients in several tributaries that support steelhead.

The monitoring program that was incorporated into the *Potlatch River Subbasin Assessment and TMDLs* will be replicated on a regular schedule by the Idaho Department of Environmental Quality (IDEQ). [18] The Latah SWCD will use information from future monitoring by IDEQ to review watershed trends that can be attributed to BMPs implemented within affected watersheds. While the IASCD and SCC have not yet published their water quality data in reports, the water quality specialists of each agency have provided the data for consideration during development of the Potlatch River Watershed Management Plan.

Collected data has been used to provide pre-restoration baseline and to prioritize restoration sites and treatments. Furthermore, that data, particularly flow data, has been made available to the engineer during development of bioengineering designs. Past site-specific monitoring has included installation of temperature loggers pre-treatment, and upstream and downstream of treatment locations, to monitor changes that may be related to planting, exclusion fencing, and other best management practices. Watershed-level monitoring data is collected at the US Geological Service (USGS) station at the mouth of the Potlatch River, and is managed and reported by the USGS.[19]

The Idaho Department of Fish and Game fish biologists continue to collect steelhead population data, using a variety of methods. See **Response #8** above for further information.

Latah SWCD gives deference to the IDFG, IASCD, SCC, ISDA, IDEQ and USGS to collect, analyze and report their data to Latah SWCD, conservation agencies and the public. Latah SWCD will compile and report related watershed trends to conservation agencies and the public through the posting of summary reports to funding agencies and Latah SWCD's website (www.latahsoil.org).

ISRP Comment #10 - "Further, although the monitoring programs of other agencies were described, including the new, IDFG steelhead population study, there was no explanation of how data would be shared, how monitoring information would be analyzed, and how results would be reported." (paragraph 1, p.5)

Latah SWCD Response #10 –

The existing contract between Latah SWCD and BPA has work elements for such things as: Coordinate Planning Efforts with Potlatch River TMDL Efforts (N:122); Participate on the Clearwater Policy Advisory Committee (O:122);

[18] See http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/potlatch_river/potlatch_river_entire.pdf

[19] The USGS monitoring station data for the Potlatch River can be located at: http://waterdata.usgs.gov/id/nwis/uv?dd_cd=01&dd_cd=02&format=gif&period=7&site_no=13341570

Collect/Generate/Validate Field and Lab Data – Collect Water Temperature and Flow Data (P:157); Revise Potlatch River Watershed Restoration/Protection Strategies (BN:174); Watershed Coordination – Attend meetings and review documents geared toward Clearwater sub basin Goals (BJ:191).

A primary objective of the Latah SWCD's BPA contract is to "Coordinate Potlatch River steelhead habitat restoration practices with the State of Idaho's TMDL process and the Clearwater Sub Basin Management Process", and to "Maintain temperature and flow monitoring programs within the Potlatch River system. As mentioned earlier (**Response #8, 9**), various agencies are monitoring a variety of steelhead and stream parameters and Latah SWCD gives deference to the IDFG, IASCD, SCC, ISDA, IDEQ and USGS to collect, analyze and report their data to Latah SWCD, conservation agencies and the public.

As stated before, Latah SWCD will compile and report related watershed trends to conservation agencies and the public through the posting of summary reports to funding agencies and Latah SWCD's website (www.latahsoil.org).

Ongoing review and updating process of the Potlatch River Management Plan provides a forum for exchanges of information and monitoring trends amongst a host of concerned agencies. The Latah SWCD also participates in the Clearwater Technical Group, which includes a Core Review Team made up of fish biologists from several agencies, and which provides additional opportunities for information-sharing and peer review of project proposals. For example, at a recent meeting of the Clearwater Technical Group, fish biologists from the IDFG and the Nez Perce Tribe provided updated monitoring results. As monitoring results are updated, project priorities can be further refined and treatments more closely matched to priority sites and resource concerns.

ISRP Comment #11 - "For a few work elements (e.g., WE 184 – Install Fish Passage Structure at the old Troy reservoir dam), projects appear promising but planning is not yet complete. Insufficient details were given for the ISRP to evaluate the merits of the work element or the monitoring that would be needed to assess its effectiveness." (paragraph 2, p.5)

Latah SWCD Response #11 – With respect to this project site, Latah SWCD is unable to provide detailed project information due to BPA's requirement that WE 184 must first be added to the existing contract before project planning and design can be initiated. However, the conflict expressed within this ISRP comment is the inability to "evaluate the merits of the work element" without more detailed information. As stated previously, Latah SWCD is requesting the addition of the WE in order to begin the detailed planning for the project site.

To date, the site has been reviewed by a diverse team of professional biologists, engineers, hydrologists, soil scientists, and other agency and regulatory specialists, who all agree that the concept has merit, and that the upstream habitat is likely to be productive if it were made accessible to spawning steelhead. In addition, the owner of the dam has previously expressed interest in its removal or incorporation of a swimmable passage.

Inclusion of the work element in the BPA statement of work is necessary before Latah SWCD can further examine the feasibility of a potential project and, if warranted, pursue designs, permits, and consultation. Additionally, it may be premature to discuss project monitoring at this point since Latah SWCD is only asking that the work element be added to the statement of work so that evaluation and pre-implementation planning can be initiated.

* * *

4. ***Overall Comments - Benefit to F&W (all proposal)***

ISRP Comment #12 - "In December, we stated that the project is on the right track and should produce real benefits to A-run steelhead, especially when upland treatments already underway are combined with riparian and instream restoration actions. The additional information provided was only partially sufficient to justify the proposed actions." (paragraph 3, p.5)

Latah SWCD Response #12 - The projects selected by Latah SWCD focus primarily on two key habitat alterations that are limiting steelhead production which can be readily and effectively fixed: fish passage and thermal refugia. Other problems exist, such as hydrologic modifications, but some of these problems are irreversible given the relative permanence of road systems, buildings, agricultural areas, and other human developments. All of the proposed activities have demonstrated effectiveness in either the Potlatch River drainage or similar systems within the Clearwater River drainage. Habitat degradation in streams located in the Palouse soil formation has a remarkable intrinsic ability to recover when legacy impacts are ameliorated.

The Potlatch River drainage itself is identified by NOAA Fisheries as one of several drainages in the Lower Clearwater River Basin that are important for steelhead recovery (B. Ries, NOAA-Fisheries pers. comm.). The Lower Clearwater River Basin supports one of the few populations of A-run steelhead that show minimal genetic effects from hatchery fish, and in spite of sometimes severe habitat alterations, steelhead are well-distributed in streams that are accessible to adults. This population occupies one of the harshest regions occupied by Snake River steelhead, and it exhibits a high level of phenotypic

diversity, reflecting the wide range of habitat conditions where steelhead are found in this system.

The Potlatch River drainage is important because the headwaters originate in the mountains, with an abundance of streams that retain perennial flows and relatively low water temperatures. A slight majority of the Lower Clearwater tributary headwaters originate in mid-elevation prairies that do not produce sufficient water yields to support fish beyond the lowest reaches of tributary streams. Streams originating on Moscow Mountain (Potlatch River) and Craig Mountain (Lapwai Creek and Big Canyon) are core areas of production that likely sustain the Lower Clearwater River steelhead population. Although the Potlatch River Basin is a core area, it has substantial legacy impacts that are likely limiting steelhead production. Proposed actions associated with the requested work elements are designed to redress specific legacy impacts in such a way as to improve hydrologic conditions, increase migration potential by moving flows out of inhospitable ditches or clearing barriers, and expand spawning and rearing habitat by returning flows to existing high quality unaltered reaches.

[Also see this letter from NMFS; couldn't attach the PDF because of document security]

http://www.nwcouncil.org/fw/projectselection/accord/200206100nmfs.pdf