

HANAN-DETWILER PASSAGE IMPROVEMENTS

PROJECT ID: 29026

**WASHINGTON DEPARTMENT OF FISH & WILDLIFE
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The following represent YSS's response to concerns identified in the ISRP "Preliminary Review of Fiscal Year 2003 Proposals for the ... Columbia Cascade Provinces", ISRP 2002-2, March 1, 2002.

CONCERN 1: THE OBJECTIVES, TASKS AND METHODS SECTION IS TOO BRIEF.

RESPONSE: The following represents a more complete description:

Objective: Provide 100 percent protection from mortality and/or injury for all species and life stages of anadromous and resident salmonids, including spring chinook, steelhead, and bull trout within a side channel of the Entiat River (river mile 5) by the end of FY 2005. In addition, provide year round flow control within the channel that will enhance over winter rearing and eliminate channel dewatering during certain times of the year. In order to meet these objectives, two specific approaches will be accomplished: (1) complete fish passage improvements on the Hanan-Detwiler irrigation diversion that were initiated in 1998; and (2) assess the effectiveness of the fish passage improvements by conducting yearly redd and fish density surveys.

Fiscal Year 2003

Task 1: Complete fish passage improvements on the Hanan-Detwiler irrigation diversion that were initiated in 1998. The Hanan-Detwiler irrigation diversion is located on the Entiat River at approximate river mile 5. This diversion is the one of larger irrigation diversions in the lower sections of the Entiat River basin. A new fish screen and fish passage improvements were constructed in 1998. However, due to funding constraints, the planned passage improvements were not completed.

The WDFW, YSS proposes to finalize the passage improvements by:

1. Providing a new permanent grade control structure or wing dam at the point of diversion. Historically, it has been necessary for the diversion owner to yearly take equipment into the Entiat River to construct a temporary wing dam that diverts water into the side channel. The construction of a permanent diversions structure will eliminate the need for yearly construction activities in the river.

2. Placement of several new log weirs within the channel. The weirs are necessary due to the gradient of the side channel immediately downstream of the spillway. Placement of the weirs will provide an acceptable transition for fish migrating upstream to the spillway and beyond.
3. Replace an antiquated wooden spillway with a state of the art concrete structure. The existing spillway is considered to be a passage barrier and must be replaced.
4. Replace the head gate. The intent of the headgate is to allow fish rearing within the channel year round by keeping the channel watered up, allow the irrigators year round use of the channel for their needs, and to provide flood protection.
5. A WDFW passage engineer will make an evaluation of the improvements.

An independent consultant will perform a redd and fish density survey of the side channel during upstream movement of adults, providing baseline biological information.

Fiscal Year 2004

Task 2: Assess the effectiveness of the fish passage improvements by conducting yearly redd and fish density surveys. An independent consultant will perform subsequent redd and fish density surveys of the side channel during upstream movement of adults for two consecutive years (FY 2004-2005). These surveys will confirm movement and spawning activity, and be compared to the baseline survey conducted in FY2003 for effectiveness of the passage improvements.

Methodology

Task 1: Complete fish passage improvements on the Hanan-Detwiler irrigation diversion that were initiated in 1998. The specificity of the work necessary to accomplish this first objective includes:

1. Project scoping and permitting – a project team comprised of the project manager, area habitat biologist, area fish biologist, design engineer, engineering aide, and construction manager will conduct an onsite evaluation of the channel and existing structures. This team will identify data needed for an initial survey and discuss design options.
2. Site survey, conceptual design, design review, permit drawings, and final design – based on the onsite evaluation, an initial survey will be

- conducted. Enough site data will be collected to support the conceptual design option selected by the team. Using survey data, a conceptual design will be drafted. Once reviewed and accepted, permit drawings will be drafted, followed by preliminary design and final design drawings.
3. Solicit project permits – the project manager will solicit project permits by initiating SEPA (and NEPA) review, and initiating the JARPA process. The project manager will be in contact with all permitting authorities to alleviate any questions or concerns throughout the permitting process.
 4. Fabrication of miscellaneous metal work – utilizing design drawings, miscellaneous metal work will be fabricated.
 5. Removal of the old spillway, head gate, and grade control structure – with necessary permits and authorizations in hand, the construction manager and crew will be dispatched to the site for removal of the existing spillway, rock weir, head gate, and temporary grade control structure. All work will be accomplished within the agreed upon work window, precluding unnecessary disturbance of fishery resources. All removed material will be transported offsite to a demolition debris landfill.
 6. Excavation and construction of the new log weirs, spillway, head gate structure, and grade control structure – once removal of the existing structures has occurred, the construction crew will commence construction of the new facility components. The head gate will be placed and armored. The work on this structure is necessary first so that flow down the channel can be terminated, allowing work on the other downstream structures. Two new log weirs will be placed and anchored. Forms for the spillway will be built and concrete poured. The new permanent grade control structure will be constructed.
 7. Site clean up and re-vegetation – once all construction activities are complete, site clean up will commence. Disturbed soil will be re-vegetated with native plants and seed mixtures.
 8. Drafting of as built prints and operational and maintenance procedures – once all construction activities are complete, as built prints will be developed. In addition, operation and maintenance procedures will be drafted, reviewed, and finalized. These procedures will be delivered to the diversion owner for implementation.

A WDFW passage engineer will conduct a hydraulic evaluation of the passage improvements following construction. This passage expert will examine passage structures and evaluate their operation using a 2-step approach. They will determine if the structures are properly equipped to provide safe, efficient fish movement by reviewing design drawings, operating procedures, and components

installed and in use at the structures. They will monitor flows, pool depths, and structural integrity to determine if the structures meet fish passage criteria. Problems discovered during their monitoring will be reported immediately for correction.

Task 2: Assess the effectiveness of the fish passage improvements by conducting yearly fish density and redd surveys.

The study reach will be that area upstream of the passage improvements within the side channel to the Entiat River. Trained observers will periodically walk upstream on the stream banks adjacent to the channel, search for newly constructed redds, and record their locations. Observers will take precautions to avoid disturbing spawning fish; redd locations will be recorded from the bank by attaching engineers flagging to streamside vegetation. The date and redd number will be recorded on the flagging, and the location identified with GPS coordinates. In addition, the number of fish observed will be recorded.

CONCERN 2: MORE DETAIL IS REQUIRED IN THE M&E SECTION. REQUIREMENTS OF THE CONSULTANT AND METHODS TO BE USED SHOULD BE PROVIDED IN DETAIL.

RESPONSE: As noted above, trained observers will periodically walk upstream on the stream banks adjacent to the channel, search for newly constructed redds, and record their locations. Observers will take precautions to avoid disturbing spawning fish; redd locations will be recorded from the bank by attaching engineers flagging to streamside vegetation. The date and redd number will be recorded on the flagging, and the location identified with GPS coordinates. In addition, the number of fish observed will be recorded.