

WENATCHEE RIVER SUBBASIN

ProjectID: 200000200

Final Phase of the Chumstick Culvert Replacement and Habitat Restoration Enhancement

Sponsor: CCCD

Subbasin: Wenatchee

FY03 Request: \$326,750

5YR Estimate: \$488,700

Short Description: Restore salmon and steelhead passage in Chumstick Creek.

Response Needed? Yes

ISRP Preliminary Recommendation and Comments:

A response is needed. It is commendable that the Chelan County Conservation District has taken the lead among a number of entities, particularly the Chumstick Community Watershed Alliance, Trout Unlimited and several governmental agencies, involved in this attempt to rehabilitate a degraded stream and its surroundings. The drainage area of Chumstick Creek is said to be 78 square miles. Flows in August and September are about 2 cfs, according to the proposal. The proposal focuses on 23 culverts that block upstream migration of salmon and steelhead. The 2 cfs of flow is apparently measured at RM 0.3 where the first of the culverts is present. *This is not accurate. Flows at RM 0.3 have been measured at 3.35 cfs and 4.52 cfs (during low flow months of August and September 2000) and 4.55 cfs and 4.24 cfs (during low flow months of September and October 1995).* That culvert has been replaced, as the ISRP saw during our site visit in October. Seven other culverts were replaced during phase 1 of the project, which was funded by BPA to the extent of \$176,000 (page 14 of the proposal). As a result, 2.7 miles of Chumstick Creek were opened up to salmon and steelhead. The proposal identifies an additional 12 barriers to be removed in the next phase.

The low numbers of fish likely to benefit from this project make its priority low. *The project may benefit a low number of individual fish, however those individuals are Endangered steelhead and Endangered Chinook. This project will benefit ESA listed fish. More ESA listed individuals are expected to benefit from the project as the progeny of spawning adults in Chumstick Creek return to spawn themselves. We believe that the numbers of Endangered fish that benefit from this project will increase as the returning adults utilize more areas of Chumstick Creek. The second most supported way of recovering salmon populations, just behind purchasing pristine habitat areas, is removing fish passage barriers. There are many supporting documents on this, Upper Columbia River HCP, WA state Limiting Factors Analysis, Governors Salmon Recovery Plan, all the Regional Technical Teams work, etc. More details should be provided on the specific benefits to fish that might be expected from removal of these culverts. How far upstream might chinook migrate, for example? Chinook could reasonably be expected to migrate approximately 14 RM from the mouth (12.3 RM upstream from the end of Phase 1 of this project. The stream flow in Chumstick Creek certainly becomes inadequate for salmon at some point upstream. How far upstream is that with respect to the culverts that might be removed? The idea that stream flow in Chumstick Creek becomes inadequate to support salmon in the upper reaches is not exactly correct. Its not a flow issue, rather it's a timing issue. Chumstick Creek is like all streams in this area. Low flows occur in the late summer and early fall. Endangered Spring Chinook spawn in late spring and Endangered steelhead spawn in early*

spring when high flows are occurring. Low flows may affect juvenile rearing conditions in August and September, however if unimpeded fish passage is possible within the drainage then juveniles can avoid the temporary and localized adverse conditions caused by low flows. Low flows in Chumstick Creek do not make the creek unsuitable for salmon recovery. It's a normal condition of all creeks and rivers, big or small, in this area. What are the ecosystem effects of removing these blocks? Some of the culverts in Chumstick Creek proposed for replacement are not just fish passage barriers, but are also too small to carry high flows and were placed in the creek incorrectly causing streambank damage at high flows. Replacing these culverts will increase the overall stability of the creek and improves stream habitat, and improve streambank conditions. In addition, increased nutrients to the stream from salmon carcasses and potential food for other animals are another possible effect. Improved migration corridor for mammals and birds will result from the improved riparian habitat established. The proposal should include a description of a plan for monitoring and evaluating the effects of culvert replacement – at least to the extent of outlining a plan for determining whether fish successfully pass, and what species do pass. The Chelan County PUD currently conducts spawning surveys in the area and has agreed to train Conservation District personnel how to perform these surveys. Once trained, CD staff will perform surveys in Chumstick Creek to determine if Spring Chinook or steelhead are able to pass upstream of culvert replacement sites during times of expected presence.

The proposal lists some anadromous fish species that supposedly will benefit. However, no source of the information is provided. *Historically, Spring Chinook, steelhead, and bull trout used Chumstick Creek. Currently, Spring Chinook rearing occurs in lower Chumstick Creek (Andonaegui, 2001). Additionally, the Douglas County PUD documented adult steelhead utilizing up to RM 5.7 in Chumstick Creek and 1.0 RM in Eagle Creek with the use of radio-telemetry techniques (English et al. 2001). While, the species do occur in the Wenatchee River and supposedly would benefit to some degree, the proposal should discuss the extent to which each species might benefit. Steelhead/rainbow trout production has a high potential in the watershed, with spawning and rearing supported by habitat in Chumstick Creek and rearing potential throughout the watershed where hydrology exists and barriers do not stop upstream fish passage (Andonaegui, 2001). See proposal 29010 as an example, wherein estimates of additional spawning area and rearing area are provided. The type of survey necessary for an estimate of additional spawning and rearing area provided in Chumstick Creek from this project has not been conducted so we were unable to provide the amount of square meters per rearing and spawning habitat provided by removing the identified barriers.*

Natural questions are: Where are these culverts located? *See enclosed map of culvert locations (Chumstick culverts). Is there sufficient flow to support salmonids at the uppermost culvert? Yes, there is sufficient flow at the upper most culvert replacement site to support salmonids. The flow has been recorded at 0.75 cfs during August 1995 and 1.1 cfs during August 2000 and 0.8 cfs during September 1995 and 0.8 cfs during September 2000 (the low flow months) at Merry Canyon (RM 10). These flows will support salmonids and the recordings were done approximately 0.5 RM upstream of the upper culvert replacement site. As long as passage is unimpeded, salmonids will be free to move within (or downstream to areas of more flow) the system and seek out areas of preferred habitat.*

The response should address the option to not to replace culverts upstream of the point where stream flow is no longer sufficient to support reasonable numbers of anadromous salmonids. (1 cfs?). *We believe that sufficient water flow exists for salmon at the upper culvert replacement site. However, if a criterion of 1 cfs of flow is used as a limit below which a stream cannot support salmon, then that point occurs someplace between culvert replacement sites 6 and 7. However, a flow of 1 cfs is only experienced in upper and middle Chumstick Creek during late summer and early fall during which time only juveniles would be in the stream. If passage is unimpeded, juveniles will be free to move within the system to areas of preferred habitat.*

Literature Cited

Andonaegui, C. 2001. Salmon, Steelhead, and Bull Trout Limiting Factors For the Wenatchee Subbasin (Water Resource Inventory Area 45) and Portions of WRIA 40 within Chelan County (Squilchuck, Stemilt and Colockum drainages). Washington Conservation Commission. Olympia, WA

English, K.K., C. Sliwinski, B. Nass and J.R. Stevenson. 2001. Assessment of Adult Steelhead Migration Through the Mid-Columbia River using Radio-Telemetry Techniques, 1999-2000. Report prepared by LGL Limited, Sydney, BC for Public Utility District No. 1 of Douglas County. 45 p. + appendices.

