

ProjectID: 200000100

Improvement of Anadromous Fish Habitat and Passage in Omak Creek

Sponsor: CCT

Subbasin: Okanogan

FY03 Request: 122,717

5YR Estimate: \$542,717

Short Description: This project is the following

How many returning fish could this restoration project expect to attain?

Recorded accounts of returning anadromous salmonids to Omak Creek do not exist, so comparisons between past run size and estimated current run size are not possible. However, Omak Creek, particularly in the area of Mission Falls, was an important fishing area of Tribal members. Photos taken in the early 1900's show salmon drying racks and catch nets near Mission Falls. Affidavits from Tribal elders, indicated large salmonids were observed and occasionally collected upstream of Mission Falls.

Within the Omak Creek Watershed Plan/Environmental Assessment (NRCS 1995) estimates of available habitat were determined by habitat surveys conducted during 1992 (CCT, Timber Fish & Wildlife, unpublished data). Also, electro-fishing was conducted to estimate trout densities. If passage for anadromous salmonids is provided through Mission Falls there would be spawning habitat available for 1,545 returning steelhead (NRCS 1995). If passage is not provided at Mission Falls, there would be spawning habitat available for 164 steelhead (NRCS 1995).

If the aforementioned estimate of returning adults is based upon smolt production in the watershed and smolt production was based upon trout densities then it is assumed these estimates are likely inflated since Omak Creek has been supplemented with rainbow and brook trout since the 1950's. This stocking effort has been discontinued during the mid 1980's.

Surveys are scheduled during this field season to estimate quality and quantity of spawning habitat upstream and downstream of Mission Falls. Also, snorkel surveys may be conducted in the lower reach to estimate fry production.

How does this potential stack up against other restoration efforts/proposals, such as Salmon Creek, Okanogan River, etc.?

The expected outcome of this project would provide access for anadromous salmonids to approximately 27 miles of habitat in Omak Creek. The current quality of habitat in Omak Creek, particularly in some upstream reaches, is marginal. However, it is the goal of this project to continue to improve instream habitat conditions by identifying the causes that have or continue to, adversely impact the quality of instream habitat and correct them. In comparison, Salmon Creek has approximately 12 to 13 miles of habitat, with approximately 11 miles of this habitat being of high quality.

So therefore, although the amount of accessible habitat is different between the two tributaries (27 miles, Omak Creek; 13 miles, Salmon Creek), due to differences in the quality of habitat, (marginal to good, Omak Creek; good, Salmon Creek), steelhead smolt production may be similar. Of course, as habitat conditions improve (increase bank stability, reestablish riparian vegetation) and land management techniques continue to become implemented (livestock management, road decommissioning, etc.) anadromous fish production in Omak Creek is expected to increase.

Based upon the current available habitat in the Okanogan River, the Washington Department of Fish and Wildlife (WDFW) estimate current escapement levels for steelhead (naturally-produced) within the U.S. portion of the Okanogan River is between 300 and 500 fish. Therefore, the estimated production for steelhead in Omak Creek would contribute a substantial proportion to the Okanogan River and provide resiliency to the naturally-produced steelhead population in this basin.

There is a large increase in budget compared to projections in 2002, primarily to accommodate additional attention to road decommissioning. We do not question the need for the roadwork, but suggest that the matter be given attention for fiscal reasons.

During August 2000, V-star (volumetric measurements of fine sediment), were conducted along Omak Creek. In the upper reach of Omak Creek large volumes of fine sediment (mean depth 1.4 feet) were measured. The opinion of area hydrologists educated in the field of sediment transport suggest the source of this large amount of fine sediment is either numerous sites of mass wasting or from high road densities. Ground and aerial surveys were conducted during 2000. No mass wasting was observed during these surveys. Road densities exceeding 6.4 miles/mile² exist within the Omak Creek watershed. Therefore, the likely source of fine sediment is from the high road density, poor road construction, and proximity of sections of road to surface waterways. Once fish passage is provided through Mission Falls, marginal spawning habitat, particularly in the upper reach of Omak Creek will be the factor limiting steelhead production.

Some listed accomplishments are incomplete (e.g., number of miles of fencing installed).

To date the following rehabilitation efforts have been incorporated in the Omak Creek watershed:

One fish passage barrier (1,600' of corrugated metal pipe) has been removed
A second fish passage barrier has been partially corrected. Based upon recent survey, conducted by CCT-Fish and Wildlife and NRCS personnel, four impediments were identified within this reach. Several reasonable options were suggested to provide access around each obstacle. It is expected that fish passage for steelhead at Mission Falls will be ensured by 2004.

Reduction of impacts by livestock have included the construction of approximately 10.5 miles of fence that either exclude livestock from the riparian area or create pastures to allow better utilization of forage via grazing strategies (rest, rest/rotation, etc.). In addition, 25 spring developments have been constructed to provide water for livestock and relieve the threat of livestock seeking water at surface waterways.

Roads have been identified as contributing fine sediment to waterways in the Omak Creek watershed. To reduce the amount of fine sediment delivered to stream channels, nearly 40 miles of forest roads have been decommissioned. The decommissioned roadbeds were ripped to a depth of 18" to allow infiltration and a high density of grass seed was applied. The root system of the grass maintained porosity of the ripped roadbed.

During field surveys bank instability and streambank erosion have been identified along Omak Creek and connected tributaries. At these sites the causative mechanism have been recognized and corrected. Typically the cause of the unstable bank conditions have been concentrated livestock use or past timber harvest practices. Forty-one instream structures have been installed in Omak Creek and Stapaloop Creek. The structures are placed to provide short-term integrity (~ 15 to 20 years) until woody riparian vegetation becomes reestablished. Over 5,000 woody plants have been planted in the riparian areas of Omak Creek and connected tributaries.

The degree to which past work need to be redone, and the lessons learned from this bad experience with a contractor are not fully explained (although the presentation helped) and seem relevant to estimating future success.

One problem identified within the Omak Creek Watershed Plan/Environmental Assessment (NRCS 1995) was man-made, anadromous fish passage barriers. One of two barriers was a reach that routed Omak Creek beneath a timber mill site through approximately 1,600 feet of corrugated metal pipe (cmp). During the spring of 1992 approximately 40 adult steelhead were observed downstream of outlet of this culvert attempting to spawn (G. Marco, CCT, personal communications). During the spring of 1998 several sections of the cmp collapsed, putting at risk aquatic resources and structures at the mill site. During the summer of 1998, a private environmental engineering firm was hired by the new owners, Quality Veneer and Lumber, Inc. The firm was responsible to design and oversee construction of an open channel located away from the mill site. Agency personnel of the Colville Confederated Tribes, Natural Resource Conservation Service and Washington Department of Fish and Wildlife raised issues and concerns regarding the design of the open stream channel. Several meetings were held informing the consultants of the shortcomings of their design. Modifications to the design were strongly encouraged by agency personnel to ensure success. Although input was well received, few modifications were implemented by the engineering firm. When the open channel was exposed to below average peak flows severe bank erosion occurred which resulted in "washing away" nearly all instream structures resulting in lateral channel migration nearing 100 feet. If this stream reach is not rectified prior to the

next high flow event, the creek channel is likely to threaten a nearby county road, lumber mill structures and possibly create passage barriers to anadromous salmonids.

During the spring of 2001, 19-adult, summer steelhead were observed along this reach. Four redds were also observed, of which two were capped. Successful natural reproduction of summer steelhead was confirmed on the capped redds. However, until this channel is reconstructed and stabilized large amounts of sediment will continue to be delivered, severely reducing spawning success.

Currently, an environmental engineering firm, selected through a competitive-bid process, is working with NRCS on an alignment and stream channel design for this 0.5-mile reach of Omak Creek. The redesigned channel is expected to be constructed by March 1, 2003.