

COLLAWASH RIVER FALLS FISH PASSAGE PROJECT

1988 ANNUAL REPORT

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Prepared for

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INTRODUCTION

The Collawash Falls Fish Passage Project began in August of 1987, and resulted in completion of Phase I of the construction of the fish passage facility. A core team of Forest Service personnel, led by fish passage specialists from R-10, Alaska, excavated a trench in the bedrock face of the falls that is approximately 95 feet long, 8 feet deep and 10 feet wide.

Implementation of Phase II of the project was put on hold in July of 1988, when 50 yards of rock from the adjacent headwall sloughed into the trench. During September and October of 1988 the larger rocks were reduced in size by blasting. High water flows in November moved the blasted rock from the trench.

The project is being done by the Mt. Hood National Forest with funds supplied by the Bonneville Power Administration (BPA) under the NWPPC's Fish and Wildlife Program, Measure 703(c). Action Item 4.2, in consultation with the Oregon Department of Fish and Wildlife (ODF&W). Successful modification of the Collawash Falls will allow anadromous fish full access to over 10 miles of acknowledged high quality spawning and rearing habitat. The total anadromous fish production benefits gained from utilization of this habitat, assuming a 10 year project life with a 4% discount factor is \$1,690,019.00.

In 1974, several partial barriers to anadromous fish in the form of small falls and cataracts located immediately above the trench, were modified for full passage by blasting. This work conducted by the Forest Service was fully successful in allowing fish passage through all but the main barrier in Collawash Falls.

Other Collawash River fisheries projects include the 1984 construction of a fish liberation access site above the falls for the PGE/ODFW spring chinook trap and haul program. Funding for the project came from revenues generated by an adjacent Forest Service timber sale. In summer of 1985, 30,000 spring chinook presmolts were stocked at this liberation site. In spring of 1987, 10,000 coho pre-smolts were stocked above the falls in the first of a three-year program to increase the runs of native winter run coho to the Collawash River system.

DESCRIPTION OF THE PROJECT AREA

The Collawash River is the largest tributary of the upper Clackamas River, with a mainstem length of 11.6 miles and a basin area of 150 square miles. The stream provides one-third of the low flow volume of the Clackamas River. The entire Collawash River drainage is on National Forest System lands. About 35% of the watershed is in fully protected status as wilderness. Approximately 20% more is under protected riparian area status or is unsuitable for timber harvest. Overall fish habitat is rated good to excellent, with good holding and rearing habitat present throughout the system.

Depending upon flows during migration, a 12-15 foot falls at RM 7.4 is a partial to complete barrier to spring chinook, coho salmon, and steelhead. The falls restrict access to approximately 10 miles of highly suitable upstream anadromous fish habitat, including an estimated 10,000-12,000 square yards of high quality spawning gravels. Native cutthroat and rainbow trout populations are present above the falls. Summer steelhead have been observed to pass the falls at an estimated 10-20% success rate.

The falls are located in a deeply incised gorge. Access and working conditions at the site are difficult, and earlier work (1974) on the falls was terminated due to safety concerns over stability and condition of the steep headwall adjacent to the project area. The project feasibility report of January 1986 by Ott Water Engineering identified four passage alternatives that could safely be implemented to meet the project objective of improving fish passage.

The Collawash Falls Project Environmental Assessment (EA) selecting the preferred action alternative was developed by the Forest Service and formally signed in May of 1986. The selected alternative (No. II) was pool excavation. Other alternatives considered included placement of gabion weirs, placement of a vertical slotted fishway, and blasting of the falls. Only the vertical slotted fishway alternative offered comparable long-term success, but estimated costs for it were three times as high.

In June of 1986, a Forest Service fisheries engineer and passage facility specialist, Dale Kanen, was detailed to the Mt Hood NF from the Chatham Area of the Tongass NF (Region 10) to produce preliminary jump pool designs and construction recommendations. Mr. Kanen developed designs for a passage structure facility to be placed in a trench blasted in bedrock at the falls, with a training wall and six concrete weirs and pools. He visited the site again in October of 1988 and still felt that the pool design was feasible once debris removal was complete.

Management emphasis in the Collawash River drainage is to increase wild runs of anadromous fish. The current goal is to provide returning adult fish year-round access past the migration barrier to the extensive upstream spawning and rearing habitat. Native run winter steelhead, and coho and chinook salmon are the primary benefitting and target species.

METHODS AND MATERIALS

Gregg Overturf, a fish passage structure and blasting specialist from Region 10 (Sitka), was assigned as project work supervisor and lead blaster. The project work crew consisted of four district personnel. They worked in teams of two and alternated between rock drilling and work on another stream enhancement project. All drilling equipment needed was shipped from Alaska. Other supplies and transportation were provided by the Clackamas Ranger District.

A pre-implementation meeting was held in September and all desired accomplishments were reviewed. Final project responsibilities were assigned to all personnel involved. Safety measures to be applied during construction were reviewed and approved. These measures included: Safety fencing, posted watchers, and reduced blasting loads to minimize vibration impact to the gorge sidewalls and previously blasted passageway trench.

Drilling and blasting was completed in late October. All equipment was removed from the site or returned to the bluffs for use during Phase II implementation.

Before Gregg's departure a meeting was held to discuss what was accomplished and what needed to be done to allow Phase II Implementation. Mobilization and implementation needs (including equipment and materials procurement, transport, contract preparations, plus final site design work) were covered. Tentative arrangements were made for Gregg's return next summer to supervise Phase II construction. This winter he will develop requisitions for supplies and labor and mail them to the district. The district fisheries biologist will be responsible for these acquisitions.

RESULTS AND DISCUSSION

Under Phase I, a trench approximately 95 feet long, 8 feet deep and 10 feet wide was excavated into the bedrock face of the falls. A minor amount of back-break occurred along the trench edge. but basically the trench was shot as specified. This year careful blasting was needed to maintain the integrity of the trench while still breaking up undesired rocks.

The work crew required three weeks to complete the drilling and blasting of slide rocks. Project mobilization, set-up, break down, and demobilization, as well as work site and trail cleanup, required another week.

The expertise of the R-10 fish passage structure specialist Overturf was substantiated again this year. All work was completed on time, with a perfect safety record, in an area considered "hazardous". Taking into account the background of the work crew. the site conditions, and nature of the project, all who worked on it are to be commended.

In the winter of 1988 a Statement of Work for the Collawash Falls project was prepared, detailing all work assignments and items (materials. equipment, contracts) requiring funding to complete Phase II. Monitoring and maintenance plans are included in the Work Statement. Phase II is now scheduled for implementation in the 1989 BPA project year.

SUMMARY AND CONCLUSIONS

The trench and construction site for the passage structure weirs and training wall at Collawash River Falls, prepared in 1987, are in a project area once abandoned due to safety concerns. The July 1988 rock slide proved these concerns were valid. Fortunately, the slide occurred while the worksite was vacant. The slide filled the trench with rock too large to be moved by normal stream flows, and careful blasting was required to reduce rock size while not damaging the trench or bringing down more material from the sidewall.

Sufficient flows did occur in November of 1988 to remove the reduced rocks in the trench. Barring further sidewall failure, Phase II of the Collawash Falls Fish Passage Project can take place as planned in late summer of 1989.