

BOX CANYON MODEL WATERSHED PROJECT

Annual Report 1997/1998



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Box Canyon Model Watershed Project

Annual Report 1997/98

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Executive Summary

In 1997, the Kalispel Natural Resource Department (KNRD) initiated the Box Canyon Watershed Project. This project will concentrate on watershed protection and enhancement from an upland perspective and will complement current instream restoration efforts implemented through the Kalispel Resident Fish Project. Primary focus of this project is the Cee Cee Ah Creek watershed due to its proximity to the Reservation, importance as a traditional fishery, and potential for bull trout and west-slope cutthroat trout recovery. The current Kalispel Resident Fish Project is focused mainly on instream assessment and improvements. Implementing upland watershed protection and enhancement through the Box Canyon Watershed Project will seek to reduce the negative impacts of certain upland management strategies and compliment the enhancement and restoration efforts of the Kalispel Resident Fish Project. Tasks completed during 1997/98 included; 1) data collected on the watershed, 2) data that needs to be collected, 3) establishment of working relations with watershed landowners, and 4) completion of several on-the-ground projects. The goal of this project is to compliment and assist the activities implemented under the Kalispel Resident Fish Project by using this project to leverage funding to complete upland protection and enhancement projects that are currently identified by the watershed landowners and managers as negatively impacting stream conditions.

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Introduction

The Box Canyon Watershed Project (BCWP) (NWPPC program measure 10.8B.15) was initiated by the Kalispel Natural Resource Department (KNRD) to assist in meeting biological objectives of the Kalispel Resident Fish Project (project #9500100). The Box Canyon Watershed Project is an ongoing coordination, assessment, implementation project that incorporates all landowners and managers. These include the Kalispel Tribe, Washington Department of Natural Resources, Natural Resource Conservation Service, U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, Crown Pacific Timber Company, and Stimson Lumber Company. The BCWP is intended to compliment the Kalispel Resident Fish Project by providing protection and enhancement of watersheds within the Box Canyon Reach. The BCWP is intended to broaden the scope of KNRD involvement in local resource management by providing opportunities to assist state, federal, and private landowners involved in upland resource management. Primary focus of the project is Cee Cee Ah Creek due to its proximity to the reservation, importance as a traditional fishery, and it's selection by KNRD fishery biologists as a priority stream for enhancement based on its high potential for enhancement. The Pend Oreille Watershed Coordinating Committee (POWCC) based on the diversity of landowners, potential for cost sharing, and ongoing fisheries work also chose Cee Cee Ah Creek Watershed as a pilot watershed project.

The land ownership within Cee Cee Ah watershed is a key component for the implementation of this project. The project relies on cost-share opportunities with state, federal, and private landowners, as well as non-profit government organizations (e.g. Trout Unlimited and Rocky Mountain Elk Foundation). These cost-share opportunities are an important aspect in which landscape level or watershed management can be effective in meeting fish population recovery goals such as those identified in the Kalispel Resident Fish Project. Coordination with the multiple landowners and resource managers is facilitated through the POWCC for the identification of potential projects throughout the Pend Oreille River Basin. All projects identified within the Cee Cee Ah Creek watershed will be prioritized based upon threat and ability to complete the project. Once identified, projects will be implemented through KNRD coordination of multiple agencies, landowners, and interested parties toward project completion. It is our goal to maximize the cost-share aspect of the project by reducing ratepayer funding toward implementation of protection and enhancement projects.

The ongoing Kalispel Resident Fish Project is focused mainly on instream assessment and improvements. Active watershed or landscape level restoration projects such as road removal or modification, stabilization of sediment sources, riparian and upland re-vegetation, and drainage hydrology improvements (i.e. culvert replacement) will be utilized by the BCWP, based on assessment recommendations Lockwood and others (1995). Monitoring and evaluation methods will be consistent with methods outlined in Lockwood and others (1996) and additional methods will be developed as necessary. Implementing upland watershed protection and enhancement through the BCWP will reduce the negative impacts of upland management and land use practices, and compliment protection and enhancement efforts of the ongoing Kalispel Resident Fish Project. Adequate monitoring and evaluation will be necessary to track project

effectiveness and implement adaptive management principles for future projects and management actions.

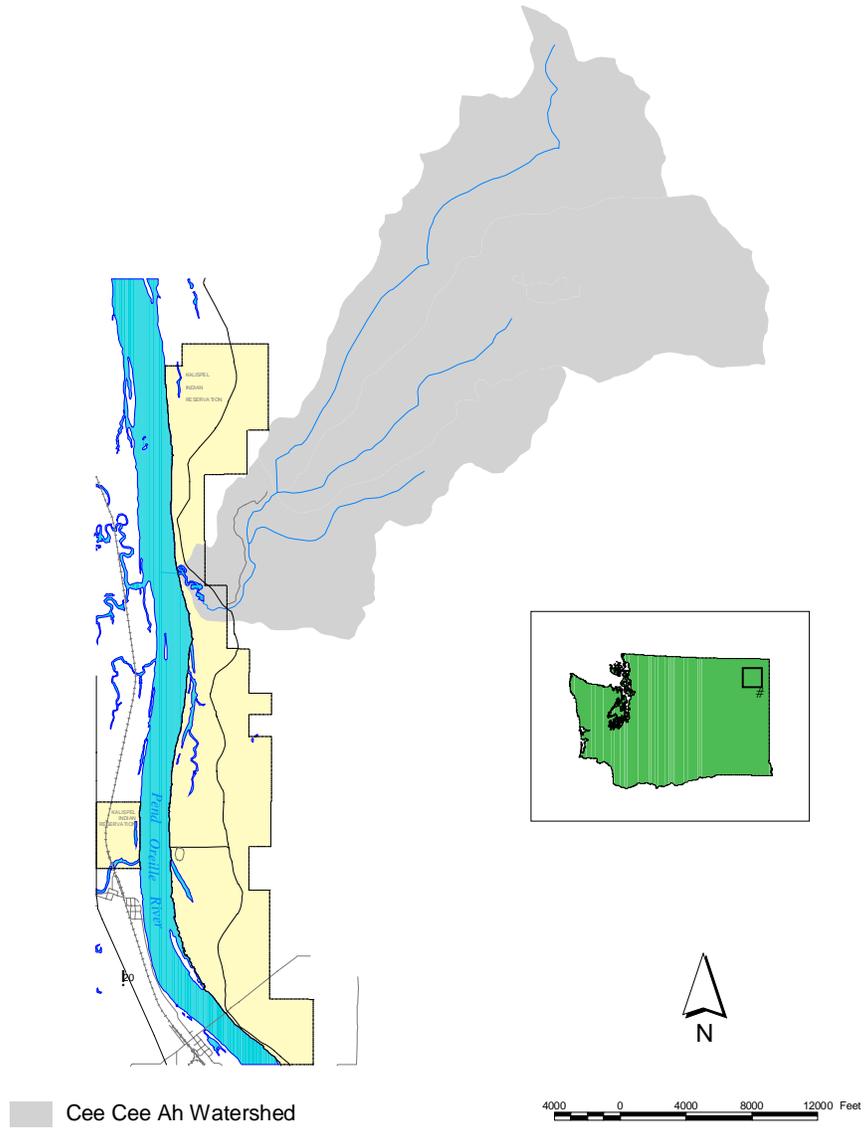


Figure 1. Cee Cee Ah Creek watershed and its relationship to the Reservation in northeastern Washington.

Description of Project Area

The Box Canyon Reach of the Pend Oreille River consists of 90 kilometers of river impounded by Box Canyon Dam to the north, and Albeni Falls Dam to the south. The reach has 47 tributaries; Cee Cee Ah Creek is one of two creeks that flow through the Reservation and the only free-flowing tributary on the Reservation (Figure 1). Cee Cee Ah Creek watershed drains approximately 8,700 acres (3,480 hectares) and consists of about 27 linear miles (43.2 km) of stream. The two major tributaries (Browns and Half Moon creeks) consist of about 4.5 linear miles (7.2 km) and about 3.9 linear miles (6.2 km) of stream, respectively. Figure 2 shows land ownership as a mix of Reservation (9%), State (DNR, 7%), Federal (USFS, 51%), and private (Stimpson, 26%, Crown Pacific 6%, and other 2%). Soils and slope information indicates varying degrees of hazards. One of the most notable is the highly unstable nature of soils within the watershed. Nearly 44% of the watershed is considered to be in this status (Figure 3). The heavily roaded nature of this drainage (67.6 linear miles or nearly 5 miles/mile²) lends to a highly altered hydrologic condition (Figure 4). This network of potential sediment sources and drainage patterns leads to increased in-stream stress and poor habitat condition.

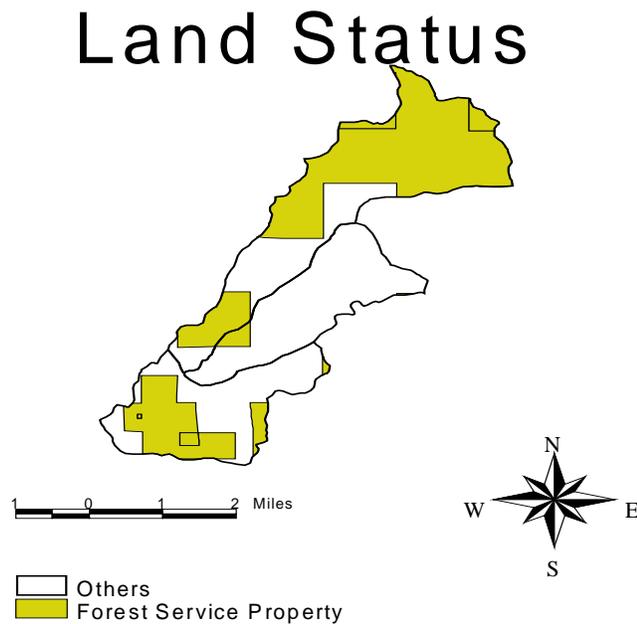


Figure 2. Land ownership status of the Cee Cee Ah Creek watershed.

Soils

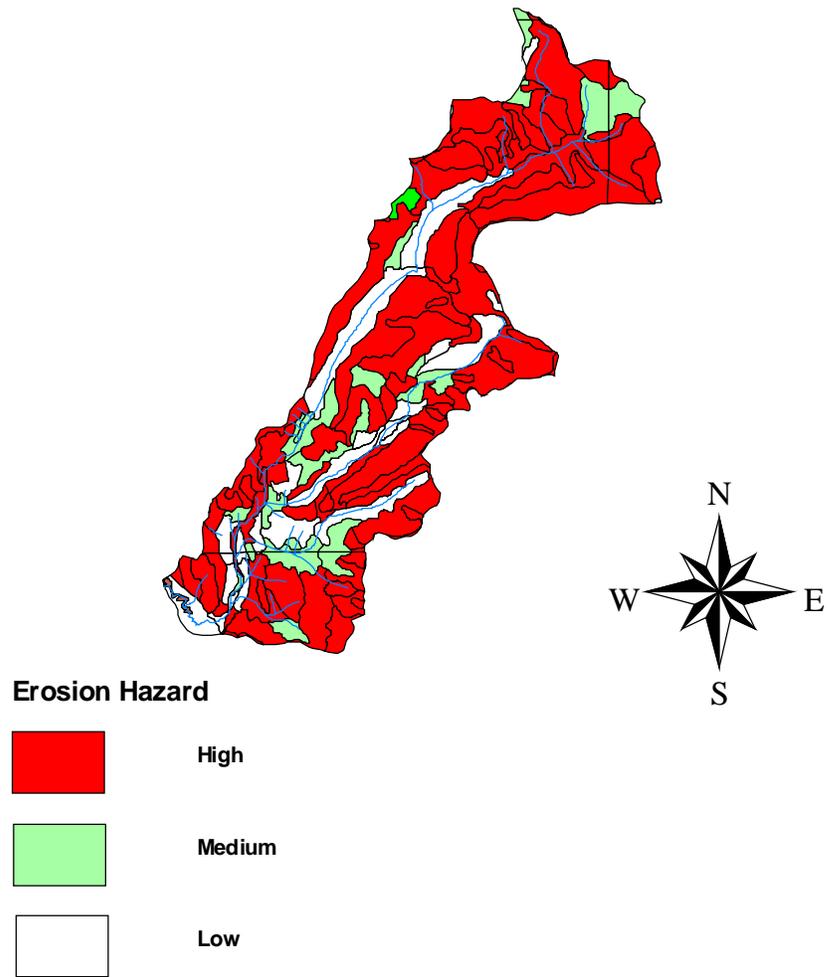


Figure 3. Erosion hazards for soil types found within the Cee Cee Ah Creek watershed.

Transportation

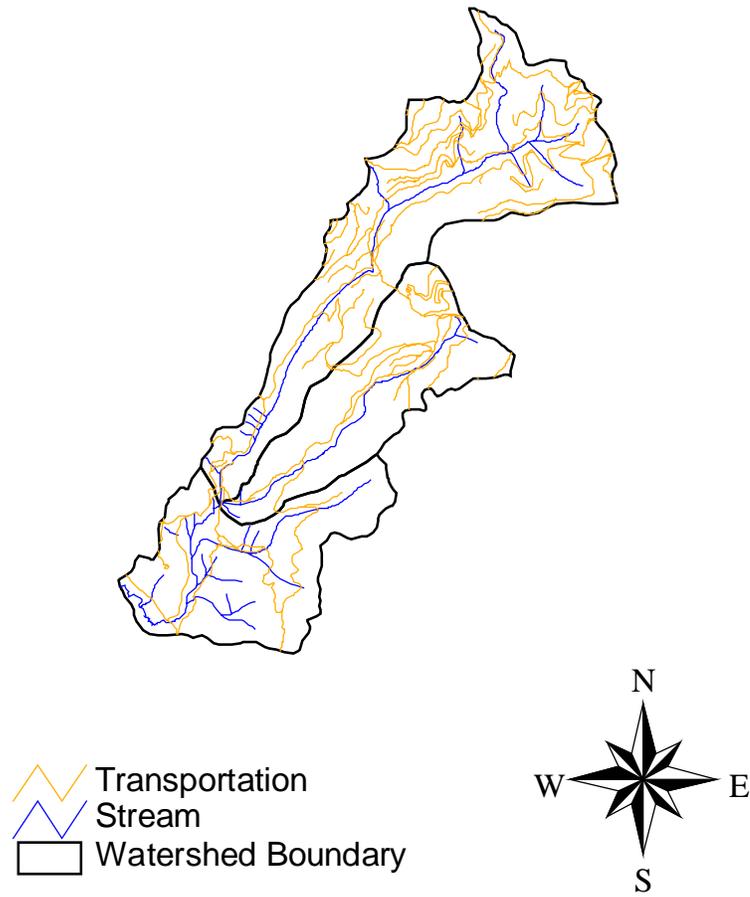


Figure 4. Road densities within the Cee Cee Ah watershed and their association with the streams.

Methodology

Stream segments where information is lacking will be surveyed using the stream survey methodology currently being used by the KNRD. This methodology is similar to that developed by Espinosa (1988) and further revised by Murphy and Huntington (1995) (KNRD internal doc. 9-97). These surveys will also identify fish passage barriers (e.g.

perched culverts) and areas of sediment input. The BCWP will continue to use existing information from various management agencies to identify current or past management practices that affect upland contributions to instream fish habitat impacts within the Cee Cee Ah creek watershed. Information from USDA Natural Resource Conservation Service soil maps was used to determine areas in the watershed that pose slight, moderate, and severe erosion hazards.

Site specific projects can also be recommended for implementation based upon present circumstances and immediate needs. Project focus is intended to 1) reduce sediment influxes into tributaries and associated impacts by implementing site specific projects or altering land use management, 2) increase habitat effectiveness and its contributions to water quality/quantity issues such as temperature and invertebrate density and diversity. Watershed data suggests that sedimentation and riparian degradation are key components of stream degradation within tributaries to Box Canyon Reach (Lockwood et al. 1995, 1996, and 1997).

In order to implement proposed enhancements and fulfill project objectives it was necessary to establish working relations and use project funds to leverage cost-share opportunities and provide partnerships with landowners/managers. The nature of these relationships will prove to be the force behind implementing individual enhancements and ultimately in meeting this and the Kalispel Resident Fish Project biological objectives for Cee Cee Ah Creek and eventually others within the Box Canyon Reach.

Through the POWCC, the Tribe recognizes the need to provide public information and education opportunities to facilitate long term support of past, present and future projects.

Results

The Kalispel Tribe and Washington Department of Fish and Wildlife completed stream assessments in 1995 and 1996 on Cee Cee Ah Creek from headwaters to the falls and Browns Creek. These surveys inventoried the habitat and also determined fish distribution and abundance. In addition to these surveys, the U.S. Forest Service (Newport Ranger District) conducted Hankin and Reeves surveys and a watershed assessment in 1996. This information has been compiled and will be an integral part in the implementation of this project. However, data gaps still exist and additional information will need to be collected.

In addition to collecting information regarding Cee Cee Ah watershed, the BCWP implemented several initial projects within this and other priority watersheds. In 1997 and 1998, with the Washington State Department of Natural Resources (DNR) and U.S. Forest Service, the Kalispel Tribe implemented a road closure and erosion hazard slope and hydrology stabilization project (Plates 1, 2, and 3). This road closure project, completed on DNR land during fall of 1997, closed, water-barred, and seeded approximately 3 miles of road. In addition, the upper main road's ditch and culvert system was improved to facilitate adequate and efficient drainage of surface runoff through the project site. The project site was water-barred, seeded with Idaho fescue (*Festuca idahoensis*), mulched, and planted with rocky mountain maple (*Acer glabrum*), Scouler willow (*Salix scouleriana*), and red-osier dogwood (*Cornus stolonifera*). The site was planted again spring 1998 with rooted stock Oregon Boxwood (*Pachistima*

myrsinites) donated by the U.S. Forest Service. Subsequent monitoring of the site indicated a 60-80% survival of fall 1997 planting and a well-established grass cover on the previously eroded sites. Significant additional erosion was not observed, but this may have been due to a relatively dry spring as compared with the spring of 1997. Another project was aimed at securing funding to improve a wet crossing on Browns Creek to a culvert designed to improve fish passage as well as reduce stream crossing impacts (Plate 4). The BCW project coordinated this effort resulting in multiple benefits with reduced BPA costs. This project also improved upland habitat through a series of projects including some funded by the rocky Mountain Elk Foundation, Kalispel Tribe, and the USFS. These improvements included burning, hardwood stand improvements, aspen release, seeding, re-vegetation, and spring developments. Several habitat improvement projects on lower Cee Cee Ah Creek within the Reservation were completed by the KNRD. These projects included decadent beaver dam removal (Plate 5), instream structure placement (plate 6) and a future interpretive site encompassing restoration and water quality monitoring efforts.

One other project completed outside the Cee Cee Ah watershed was the Skookum Creek habitat project. This project recognized the opportunity to use the BCWP to coordinate the effort to fence and re-vegetate nearly one mile of the stream on private land. As a result this coordination effort resulted in the project site receiving the “Wildlife Farm of the Year” award for the Local Conservation District and for all of Washington State.

Discussion

The BCWP is intended to complement the Kalispel Resident Fish Project by providing protection and enhancement to upland features contributing to in-stream habitat degradation. This project will broaden the scope of KNRD involvement in local resource management by providing opportunities to work with state, federal, and private landowners involved in upland resource management.

The BCWP will rely on cost-share opportunities with state, federal, and private landowners to implement protection and enhancement projects within the Cee Cee Ah creek and other priority watersheds. Active upland restoration projects such as, road removal or modification, stabilization of sediment sources, riparian planting, and culvert replacements (Doppelt et al. 1993; Williams et al., in press) have been and will be major components of the project. Cost-share partners at this time are the U.S. Forest Service, Washington State Department of Natural Resources, and USDA Natural Resource Conservation Service. Once established, the project will continue to provide avenues toward the facilitation of protection and enhancement efforts in other watersheds within the Box Canyon Reach. As an example of this effort, the Kalispel Tribe is assisting the USFS, through the POWCC, to relocate approximately two miles of road along East Branch LeClerc Creek that presently contributes about 90% of the sediment to the stream’s bed load. This project is utilizing the BCWP to assist in the completion of all process related objectives, the completion of the rehabilitation plan for the old road, and in securing funding to implement the rehabilitation plan. This effort will result in a major reduction of sediment to this stream while limiting BPA funding toward project

completion (majority of funding will be USFS, county, PUD, Tribal, and various grants and/or contracts to rehabilitate the old road).

Milestones for 1999 will include the development and implementation of a Watershed Implementation/Management Plan by the stakeholders through the POWCC. Once completed, the plan will enable responsible management of upland resources that will ultimately benefit the Kalsipel Resident Fish Project's goals for Cee Cee Ah and other tributaries to the Pend Oreille River.

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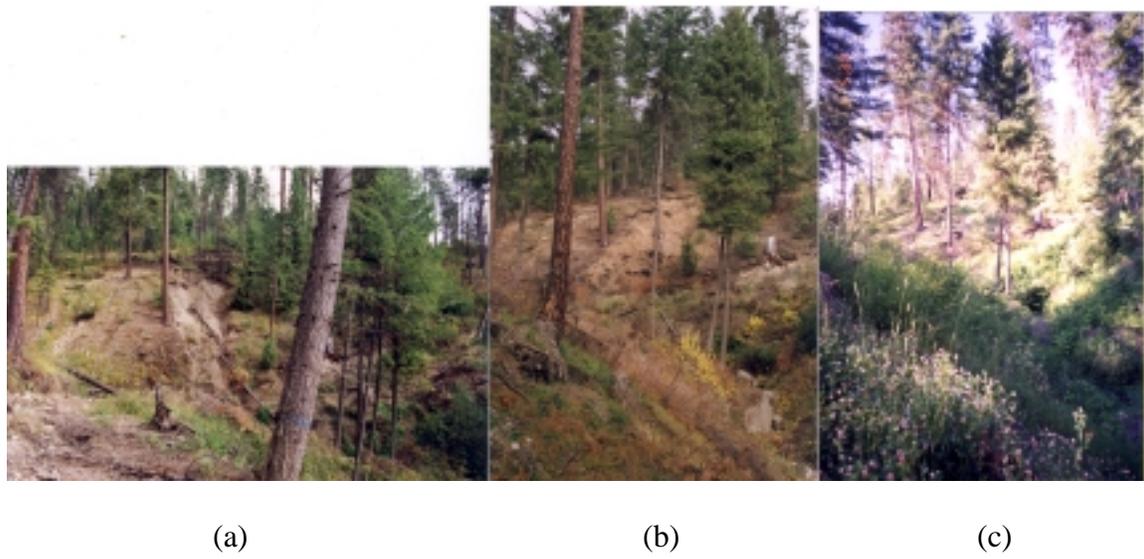


Plate 1. Cee Cee Ah Creek falls project site showing before (a), during (b), and after (c) implementation of project actions. Re-vegetation, seeding, and hydrologic restoration were among the actions taken to rehabilitate this site.

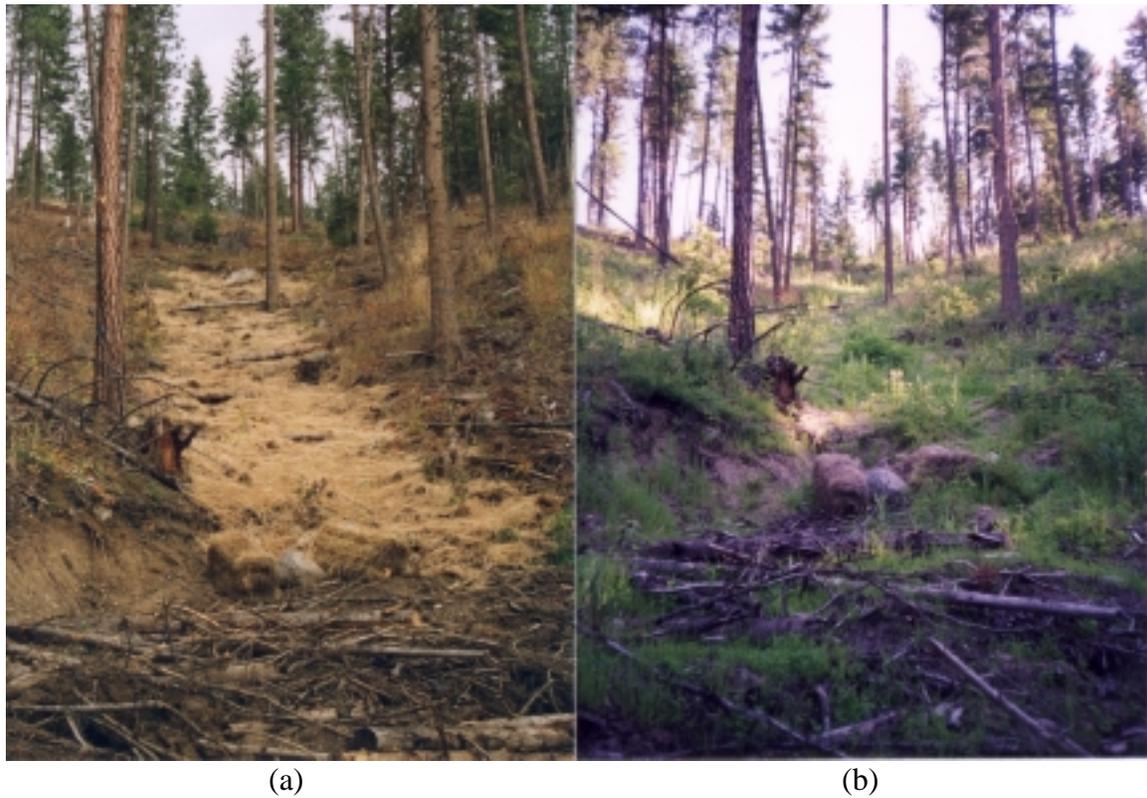


Plate 2. More pictures of the Cee Cee Ah falls project site showing before (a) and after (b) implementation views.



Plate 3. Additional views of restoration efforts on the Cee Cee Ah falls project before (a) and after (b) implementation.



Plate 4. Picture of the Browns Creek wet crossing which is now outfitted with a six-foot diameter squashed culvert buried into the stream channel for improved fish passage.



(a)



(b)



(c)



(d)

Plate 5. Chronological view of the decadent beaver dam removal and subsequent habitat availability.



Plate 6. View of Department in-stream structure placement within beaver dam removal area.