

**DRAFT ENVIRONMENTAL ASSESSMENT**  
**Shoreline Stabilization and Historic Properties Management**  
**Priest River – 10-BR-94**  
**Carr Creek – 10-BR-111**  
**Hornby Creek – 10-BR-14**  
**BONNER COUNTY, IDAHO**



US ARMY CORPS OF ENGINEERS  
SEATTLE DISTRICT

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**US Army Corps  
of Engineers.**  
Seattle District

**Pend Oreille River Shoreline Stabilization and Historic Properties Management  
Draft Environmental Assessment  
October 2006**

**Responsible Agency:** The responsible agency for this shoreline stabilization project is the U.S. Army Corps of Engineers, Seattle District.

**Abstract:**

This Environmental Assessment (EA) evaluates the environmental effects of the proposed shoreline stabilization along the Pend Oreille River upstream from Albeni Falls Dam, near Priest River, Idaho. Scattered tracts of federal land located along the Pend Oreille River were licensed to the Idaho Department of Fish and Game (IDFG) for management due to the valuable fish and wildlife habitat they encompass. Erosion from wave action has caused incremental bank failure along the north shore of the Pend Oreille River within the boundaries of three archaeological sites, which are also part of the IDFG wildlife management areas. Operation of the Albeni Falls Dam project is having an adverse effect on the National Register-eligible sites, as the operation is causing shoreline erosion that results in loss of important archaeological data for understanding the prehistory of the area and the cultural history of several Native American tribes. The erosion and bank failure have progressed within approximately 500 lineal feet of the Burlington Northern Santa Fe railroad. This has led to the potential interruption of a mainline railroad if the erosion is not stopped at its current location. Other reaches of the river shoreline under Corps responsibility have been stabilized using riprap in similar fashion through construction contracts or other agreements dating back to 1964.

The proposed project will not constitute a major federal action significantly affecting the quality of the human environment.

This document is also available online at: <http://www.nws.usace.army.mil/ers/envirdocs.html>

Please send questions and requests for additional information to:

Ms. Nancy C. Gleason  
Environmental Resources Section  
U.S. Army Corps of Engineers  
P.O. Box 3755  
Seattle, Washington 98124-3755  
Nancy.C.Gleason@usace.army.mil  
206-764-6577

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## 1.0 INTRODUCTION

This Environmental Assessment (EA) evaluates the impacts of a Pend Oreille River Shoreline Stabilization project. The Corps of Engineers is proposing bank stabilization work in three locations along the Pend Oreille River. The locations of the proposed projects are upstream from the Albeni Falls Dam near the town of Sandpoint in northern Idaho (Figure 1). Scattered tracts of federal land located along the Pend Oreille River were licensed to the Idaho Department of Fish and Game for management due to the valuable fish and wildlife habitat they encompass (Figure 2). These areas are often characterized by irregular shorelines and a diverse mix of mudflats, emergent and scrub-shrub wetlands, wet meadow, and upland coniferous and deciduous forest. The licensed lands support a myriad of species including bald eagles, Canada geese, osprey, great blue herons, many waterfowl species, shorebirds, and a variety of other resident and migrant birds. Mammals present on these lands include white-tailed deer, beaver, many species of small mammals, an array of bats, and occasionally moose and black bear. Unfortunately, much of this important habitat is eroding, and will continue to be lost unless effective erosion control is implemented. Soils in this area are subjected to inundation during full pool elevation (2,062+/-) of the reservoir and are subjected to high winds and large waves during that period. During winter draw down (2,051 +/-), the soils have a tendency to slough off or erode as the soil is saturated; water pressure holds the soil in place (at high pool) and then when removed the tendency is to erode or slough off onto the shallow areas vacated by the receding shoreline. Vegetation is lacking in the fluctuation zone and establishment is inhibited by undercutting of the banks.

Erosion from wave action has caused incremental bank failure along the north shore of the Pend Oreille River within the boundaries of three archaeological sites. These sites are Priest River 10-BR-94, Carr Creek 10-BR-111, and Hornby Creek 10-BR-14. Operation of the Albeni Falls Dam project is having an adverse effect on the Register-eligible sites, as the operation is causing shoreline erosion that results in loss of important archaeological data for understanding the prehistory of the area and the cultural history of several Native American tribes. The mainline tracks of the Burlington Northern Santa Fe Railroad (BNSFRR) and Pend Oreille Valley Railroad (POVRR) run adjacent to the north shore of Pend Oreille River. The erosion and bank failure have progressed within approximately 500 lineal feet of the railroad. This has led to the potential interruption of a mainline railroad if the erosion is not stopped at its current location. Reaches of the river shoreline to the east of this project site have been stabilized in similar fashion through construction contracts or other agreements dating back to 1964.

### 1.1 Background

The Priest River site is located within the boundaries of the Priest River Wildlife Management area; Carr and Hornby Creeks are also part of the larger Pend Oreille Wildlife Management area, which was acquired in 1953 from private owners by the Corps of Engineers as fee simple title lands in connection with the operations of Albeni Falls Dam. In 1955, under the authority of the Flood Control Act of 1950, Public Law 516, the acquired Pend Oreille lands were licensed to the Idaho Department of Fish and Game for the conservation, maintenance and management of wildlife, wildlife resources, and habitat. In 1984 the license was renegotiated and signed for a 25-year term. Although the land is under license to the Idaho Department of Fish and Game for wildlife purposes, the Corps of Engineers still owns title to the sites.

An important local track of the BNSFRR and POVRR runs adjacent to the north shore of the Priest River and Carr Creek sites and is near the northern border of the Hornby Creek site. The BNSFRR/POVRR line provides transport of cargo for local business and industry. Erosion and bank failure have progressed outside the flowage easement area and encroached approximately 50 feet into the Pend Oreille River riparian zone. If the erosion is not stopped, there is potential for eventual interruption of the rail line. In addition, the three sites have been identified as eligible for the National Register of Historic Places (Northwest Archaeological Associates 2005). Operation of the Albeni Falls Dam project is having an

adverse effect on the Register-eligible sites, as the operation is causing shoreline erosion that results in loss of important archaeological data for understanding the prehistory of the area and the cultural history of several Native American tribes. Appendix A includes photographs of the three project sites, and Appendix C shows the site layouts superimposed on aerial photographs.

## **1.2 Authority**

The Albeni Falls Dam project was authorized under the Flood Control Act of May 17, 1950 (Public Law 516, 81<sup>st</sup> Congress, 2<sup>nd</sup> Session) in accordance with Senate Document 9, 81<sup>st</sup> Congress, First Session, as part of a comprehensive plan for the development of the Columbia River System. Funds are allocated each year via Congress for Operation and Maintenance of the Albeni Falls Dam Project.

In addition to authority in Section 110 of the National Historic Preservation Act, specific construction authority for this proposed project is in Section 9 of the Flood Control Act of 1946, 33 USC 701(q):

*“When the Chief of Engineers shall find that any highway, railway, or utility has been or is being damaged or destroyed by reason of the operation of any dam or reservoir project under the control of the Department of the Army, he may utilize any funds available for the construction, maintenance or operation of the project involved for the repair, relocation, restoration or protection of such highway, railway or utility.”*

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

The proposed project is to stabilize approximately 2000 lineal feet of Pend Oreille River shoreline among three different sites, which are Corps of Engineers owned, and licensed to the Idaho Department of Fish and Game for wildlife management. The shoreline stabilization would prevent encroachment into BNSFRR/POVRR and prevent further shoreline erosion that results in loss of important archaeological data and wildlife habitat.

Three alternatives were considered for the proposed project. The no action alternative and the preferred alternative were carried through the alternatives analysis. Those two alternatives are discussed below. The third alternative, involving use of various bank stabilization methods such as root wads, gabion mats, and bioengineering, was not carried through the analysis due to the inability for shoreline excavation (due to culturally sensitive materials), and costs. Dam operations cannot be altered because this would affect the two main purposes of hydroelectric power generation and flood protection. The use of riprap on filter fabric provides adequate bank protection, is cost effective, and is permanent.

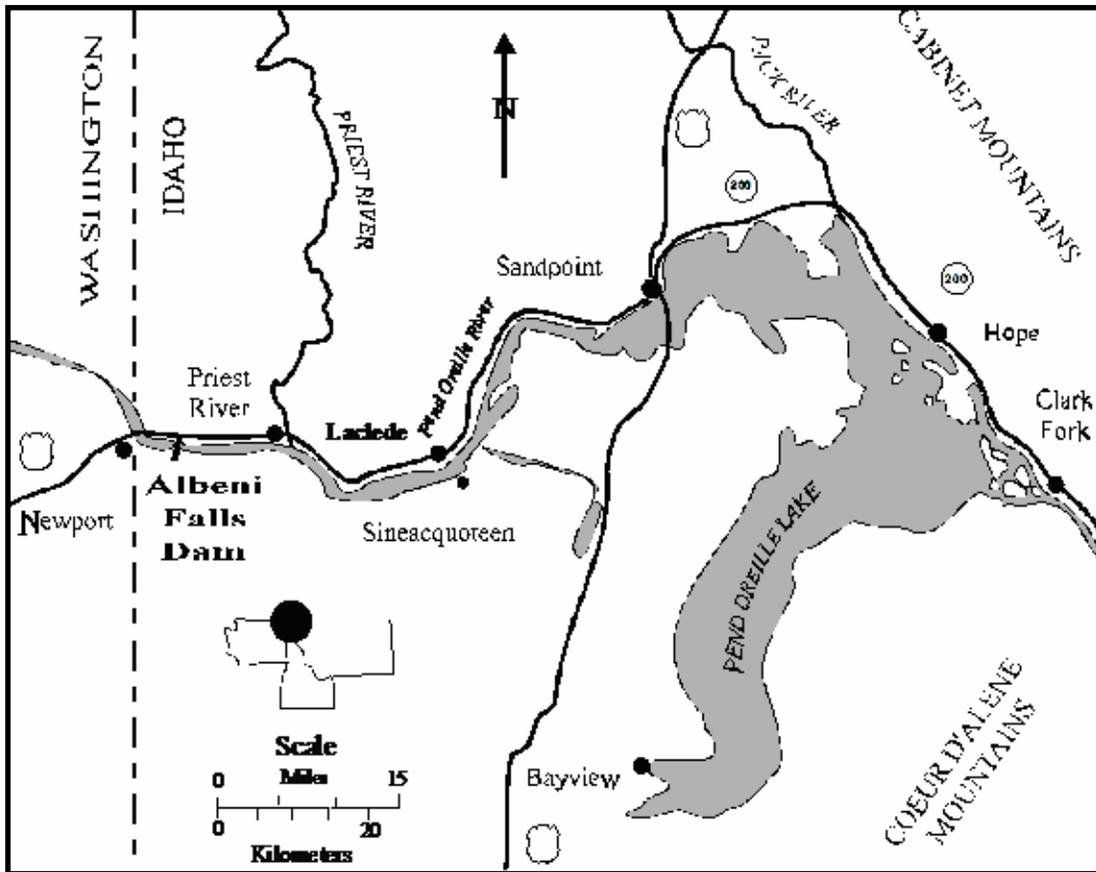


Figure 1. Albeni Falls Dam on Pend Oreille River near Sandpoint, Idaho.

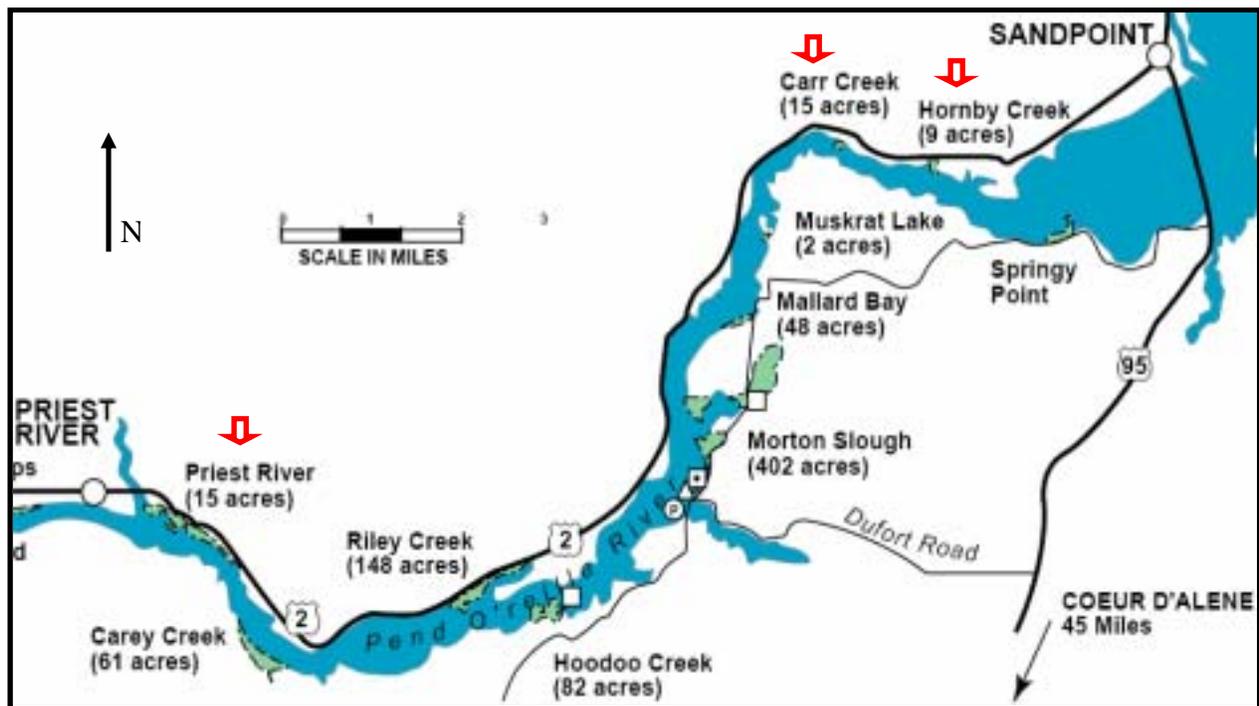


Figure 2. Project sites on north shore of Pend Oreille River.

## 2.1 No Action

Under the no action alternative the shoreline would continue to erode and would place the BNSFRR and POVRR in jeopardy. This action could also lead to the immediate loss of important archaeological data for understanding the prehistory of the area and the cultural history of several Native American tribes. Furthermore, no action at the proposed project sites would result in loss of important wildlife habitat currently managed by Idaho Department of Fish and Game. An estimated 30 acres of wetlands are lost to unstable bank erosion each year due to operation of the Albeni Falls Dam (Martin et al. 1988).

## 2.2 Preferred Alternative

Bank stabilization was chosen at the proposed project site to prevent erosion and encroachment onto BNSFRR properties, Wildlife Management Areas, and National Register eligible archaeological sites. This alternative was also chosen to comply with Section 9 of the Flood Control Act of 1946, 33 USC 701(q): for any highway, railway, or utility that has been or is being damaged or destroyed by reason of the operation of any dam or reservoir project, the Corps may repair, relocate, restore or protect such highway, railway, or utility.

Design diagrams of the following construction projects are contained in Appendices B and C of this report. The diagrams specify the amount of material and machinery used, and provide cross sections of the stabilization structure. The following is a general description of the construction procedure: Filter fabric would be placed along the contour of the shoreline to provide support and to prevent fine sediment from entering the river. Filter fabric would be covered with a pit-run crushed rock material to establish a 2:1 slope. Once the slope is established, Class IV riprap or smaller diameter spall rock would be placed approximately three feet deep. This would stabilize approximately 750 lineal feet of the shoreline at Priest River, 300 lineal feet at Carr Creek, and 1000 lineal feet at Hornby Creek. Construction would begin in January 2006 and take around 26 days for all three sites depending on weather. Upon completion, all materials used for haul road construction would be removed. Any incidental native vegetation cleared for construction would be replanted with the same or similar plant species.

Construction material would consist of biodegradable filter fabric, Class IV riprap, 4-inch Spalls, 3-inch minus crushed stone, and granular fill. All rock material would be obtained from a state-permitted source. Machinery includes a D-4 Dozer with 6-way blade and 3-prong ripper or equivalent, a 200 Series excavator with thumb or equivalent, and dump trucks. A temporary haul road was constructed for access for previous work at the Priest River site. Staging for work at Priest River would occur at the terminus of the access road near the top of bank where an existing clearing in vegetation occurs. Similar access routes and staging areas would be established along existing access roads for the Carr and Hornby Creek sites. In order to reduce clearing of riparian vegetation, rock placement would be accomplished from the shoreline instead of from the top of the bank. A temporary haul road would be accessed from the staging area and be aligned near the toe of slope within the exposed shoreline at each project site. Construction would avoid any excavation into the bank to avoid any disturbance to embedded culturally sensitive material.

Habitat features incorporated into the design include willow plantings and other riparian plantings. Willow plantings would be placed at the summer high pool elevation (2,062.5+/- ft). Willow cuttings would be placed horizontally on 6 inches of dirt with approximately 25% of the cutting exposed. Following willow placement, 6 additional inches of dirt would cover the plantings to maintain soil-willow contact. Smaller diameter rock would aid in soil retention by reducing interstitial spaces created by larger diameter riprap. Native conifer and deciduous trees would be planted at the top of bank. Planting would occur within a 15-foot wide zone with black cottonwood (*Populus balsamifera*) and Ponderosa pine (*Pinus ponderosa*) placed randomly in a rough linear formation. Planting would occur in autumn to enable the plants to acclimate before winter. The bare-root plant material would benefit from spring precipitation as irrigation is not feasible on this site. Planting methods would utilize a hand-pick to

minimize disturbance if culturally sensitive materials are encountered. Installation would also be overseen by an archaeologist and a biologist experienced in native plant installation techniques.

In order to minimize quantity of rock, Large Woody Debris (LWD) has been omitted from this project. LWD would require more rock to stabilize the structure, resulting in further rock encroachment into the shoreline. In addition, the culturally sensitive nature of this project prohibits the excavation required for placement of LWD into the bank.

#### ***Priest River Wildlife Management Area Project Site***

At the Priest River site, the objective of the proposed work is to stabilize approximately 640 lineal feet of low bank shoreline immediately adjacent and east of this site, and another 100 lineal feet of low bank shoreline on the western end. Placement of fill for bank protection at this site would require a small amount of in-water work involving placement of riprap below the pool level at elevation 2055. The proposed time frame for construction is winter 2006-07. The duration of construction is estimated at approximately 12 days assuming typical weather conditions.

A temporary haul road, constructed for access for Phase 1 work, follows the alignment of the existing access trail leading from Highway 2 to the eastern terminus of the project area. The road is approximately 500 lineal feet with a 14-foot width. Two turnouts of 10-feet wide by 30-feet long were also constructed. A temporary easement was obtained from POVRR for access across the railroad grade. No additional permits or approvals are necessary. Access would involve placement of a temporary construction platform over the tracks. The platform would sit approximately one foot higher than the existing railroad grade. Wetland boundaries would be delineated and construction fencing installed to prevent any road encroachment in the wetland area. Staging would occur at the terminus of the access road near the top of bank where an existing clearing in vegetation occurs. In order to reduce clearing of riparian vegetation, rock placement would be accomplished from the shoreline instead of top of bank. A temporary haul road would be accessed from the staging area and be aligned near the toe of slope within the exposed shoreline. Construction would avoid any excavation into the bank to avoid any disturbance of embedded culturally sensitive material. The Corps (Emergency Management Office) would monitor construction.

#### ***Carr Creek Project Site***

The objective for the proposed work at the Carr Creek site is to place 300 lineal feet of riprap on mudflats to protect an area of habitat in the historical site that is vulnerable to wave and wake erosion during high water. Access to the site can be achieved most of the way via an existing private road. A total of 200 lineal feet of access road would need to be constructed including a railroad crossing. All work would be achieved from the bank above the high water mark. A total of 1500 cubic yards of riprap would be placed along the shoreline. No excavation is allowed at this culturally sensitive site. The duration of work for this project is expected to be five days. After project completion, no further access to this site would be required for maintenance due to the low slope of the bank creating low risk of shifting of the riprap. The riprap would not be in danger of failure through slumping.

#### ***Hornby Creek Project Site***

The proposed work at the Hornby Creek site would involve placing 1,000 lineal feet of riprap on mudflats to protect three areas of habitat in this historic site that are vulnerable to wave and wake erosion during high water. Access using existing graveled roads in an undeveloped area will need to be negotiated with an adjacent landowner. Approximately 125 lineal feet of beach access road would need to be constructed, and later removed when construction is complete. All work would be achieved from the bank above the high water mark. This site would require a total of 4000 cubic yards of riprap to accomplish the shoreline stabilization. Riprap will be placed on the mudflat while the pool is drawn down, and will prevent further erosion of the wetland. The duration of construction is estimated at approximately nine days assuming

typical weather conditions. As with the Carr Creek project, no further access to this site would be required for maintenance.

### **3.0 EXISTING ENVIRONMENT**

#### **3.1 Hydrology and Geology**

The Pend Oreille River at Albeni Falls Dam has a watershed of 24,200 square miles, which supplies a mean discharge of 25,930 cubic feet per second. Lake Pend Oreille is one of the deepest and largest lakes in the western United States. The Clark Fork River is Lake Pend Oreille's largest tributary and contributes around 90 percent of the total flow and most of the suspended sediment load. The segment of the Clark Fork River draining Lake Pend Oreille is now designated the Pend Oreille River. Conditions in Lake Pend Oreille, such as the stage of the lake and timing of the inflow, are influenced not only by Albeni Falls dam, but also by the operation of upstream projects and basin hydrologic factors.

The shoreline is characterized by shallow water at summer pool and is exposed and dry during most of the drawdown period. As the water level of Lake Pend Oreille fluctuates between summer elevations at 2,062.5 feet above mean sea level (MSL) and winter elevations at 2,051 feet above MSL, soils that are normally not subjected to long-duration flooding are being inundated for many weeks. The soils in this area have low cohesion and are easily eroded. Saturation weakens soil structure and kills vegetation that would help stabilize the bank. Bare banks during the lengthy high summer elevation are attacked directly by wake- and wind-generated waves, and by undercutting the sediment column with subsequent collapse of the overlying strata (see Appendix A – Photos). Site soils are also affected by erosion within pipes created by burrowing animals. Both overland flow and hydraulic overpressure from wave action at the pipe entrance in the pool are leading to fairly rapid sediment loss.

#### **3.2 Ecology**

The Lake Pend Oreille region enjoys an abundance of wildlife in both population numbers and diversity. At least 23 species of waterfowl inhabit the lake area, mostly as migrants or winter residents. Permanent and summer resident waterfowl nest in marshes and adjacent riparian or upland habitats. Vegetated shoreline habitats are important for rearing and food sources. A variety of raptors, including overwintering bald eagles, utilize the riparian areas and nearby forests. Other avian species that inhabit the area surrounding the lake and river include wading birds, shore birds, gulls, passerines, and upland game birds. Small mammals reportedly using project lands include coyote, fox, badger, beaver, marmot, river otter, and mink (USACE 1981). The Lake Pend Oreille system supports kokanee, as well as several trout species, largemouth bass, and crappie. Some of the native non-game fish species include bull trout, mountain whitefish, dace, peamouth chub, northern pike minnow, sculpin, and sucker (USACE 2005). The Pend Oreille Wildlife Management area also supports healthy populations of reptiles and amphibians (IDFG 2006).

The three project areas proposed for FY07 bank stabilization are all on the north shore of the Pend Oreille River, downstream from Lake Pend Oreille. The sites are part of the larger complex of the Pend Oreille River Wildlife Management Area (Figure 2). This is also a historically important and culturally sensitive area for the tribes of northern Idaho and each site is eligible for the National Register of Historic Places.

The project area for Priest River Wildlife Management Area, site 10-BR-94, is located in Township 56N, Range 4W, Section 30. The project site is on the right bank of the Pend Oreille River at River Mile (RM) 96, within the federal fee land in tract C-317-2 (Figure 3). This wildlife management area is one-half mile east of the town of Priest River, Idaho. The action area consists of a riparian shoreline located within the Priest River Wildlife Management Area upstream of the Albeni Falls dam. This area contains scattered Ponderosa pine (*Pinus ponderosa*) trees with dense undergrowth comprised of black hawthorn

(*Crataegus douglasii*), serviceberry (*Amelanchier alnifolia*), and snowberry (*Symphoricarpos albus*). The Pend Oreille River borders the southern side, and the northern portion is bordered by the tracks of the BNSFRR and POVRR. A palustrine emergent wetland dominated by cattails (*Typha latifolia*) borders the east side of the project area, and an isolated sandbar occurs waterward of the shoreline. The site is used by nesting and molting waterfowl, primarily mallards, widgeons, and Canada geese, as well as by migrating and wintering waterfowl (USACE 1981).

The project area for Carr Creek, site 10-BR-111, is located in Township 57N, Range 3W, Section 26. The project site is approximately five miles west of the city of Sandpoint, Idaho, on the north shore of the Pend Oreille River. Interstate Highway 2 and the POVRR and BNSFRR are nearby. Access is by a short dirt road from Highway 2. The flood-plain area of the Carr Creek site is vegetated by hawthorn shrubland and short grasses with a small area of reed canary grass (USACE 1981). The site is a low terrace with seasonally inundated areas that range from mudflats and sandy beach to dense grass fields. Extensive mudflats are exposed at low pool. Other vegetation includes alder and ponderosa pine trees. This site provides waterfowl habitat for feeding migratory birds.

The project area for Hornby Creek, site 10-BR-14, is located in Township 57N, Range 2W, Section 31. This project site is approximately three miles west of the city of Sandpoint, Idaho, on the north shore of the Pend Oreille River. The Hornby Creek site is dominated by wet meadows and has a small grove of alder and hawthorn (USACE 1981). This site also supports waterfowl habitat. As with the Priest River and Carr Creek sites, the Hornby Creek site exhibits lack of stabilizing vegetation in the pool level fluctuation zone of approximately 11 feet.

### 3.3 Water Quality

The Pend Oreille River is part of the Pend Oreille/Clark Fork Watershed. The Clark Fork and its tributaries drain the Rocky Mountains in Western Montana and Northern Idaho. The Clark Fork empties into Lake Pend Oreille and the Pend Oreille River begins at the outlet of the lake. Albeni Falls dam occurs along the Pend Oreille River at RM 90 approximately 25 miles downstream from the lake.

The Pend Oreille River is listed for temperature on Idaho's 1998 303(d) list of impaired waters (WDOE 2004). Water quality data from the Pend Oreille River shows that water temperatures exceed the site-specific criterion of 20°C from the state water quality standards. In addition to Idaho, the entire Pend Oreille River in Washington is also considered impaired for temperature. High water temperatures limit bull trout distribution in general, and spawning and rearing are extremely limited due to high summer temperatures above the thermal tolerance for bull trout. However, bull trout from the Priest River use it as a migration corridor in the fall and spring to migrate to and from Lake Pend Oreille (USACE 2005, Terra-Burns 2005).

Sediment flow is another pollutant of concern in the upper Pend Oreille basin. Localized turbidity during summer pool levels is evident between Lake Pend Oreille and Albeni Falls Dam. The three proposed project areas contribute to localized turbidity due to wave erosion and sloughing of unconsolidated shoreline materials.

### 3.4 Vegetation

Most of the area that comprises the approximately 2000 lineal feet of shoreline and associated riparian corridor among the three project sites consists of scattered Ponderosa pine (*Pinus ponderosa*) trees with dense undergrowth comprised of black hawthorn (*Crataegus douglasii*), serviceberry (*Amelanchier alnifolia*), and snowberry (*Symphoricarpos albus*). Ground cover is comprised of common upland grasses and forbs including an invasive species, spotted knapweed (*Centaurea maculosa*).

A palustrine emergent wetland contiguous with the Pend Oreille River occurs adjacent to the project area at the Priest River project site. The wetland is dominated by cattail (*Typha latifolia*) with sub-dominant native sedges (*Carex* spp., *Scirpus* spp.) and rushes (*Juncus* spp.). The perimeter of the wetland is dominated by willows (*Salix* spp.) and red-osier dogwood (*Cornus sericia*). Access to the site would be designed to avoid any impacts or disturbance to the wetland. Work during Phase 1 stabilized the bank while preserving the waterward edge of the wetland vegetation.

### 3.5 Fish

Lake Pend Oreille and Pend Oreille River are home to a variety of native and non-native fish. Cold-water species tend to occupy the deeper waters of the lake while the warm water species are more prevalent in the near-shore areas and the river between Sandpoint and the Dam. Prevalent species include kokanee, bull trout, rainbow trout, lake trout, cutthroat trout, bass, whitefish, perch, and sunfish. The significant sport fishery targets trout, however, the kokanee fishery has been closed due to declining populations. The decline of the kokanee run is thought to be due to regulation of water levels by Albeni Falls dam, which has decreased the total amount of spawning habitat available. The winter water level is now held higher than in the past for kokanee.

### 3.6 Wildlife

The upper Pend Oreille area supports a variety of wildlife species that contribute to recreational opportunities including viewing, hunting, and trapping. The most sought-after game species include white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), black bear (*Ursus americanus*), and mountain lion (*Felis concolor*).

In the vicinity of the proposed project sites, state and federal agencies intensively monitor waterfowl for their importance to hunting as a recreational activity. The number of ducks can range from 47,500 to as high as 142,600 in the Pend Oreille Lake and River basin. While most of the 23 species of waterfowl recorded are migrants or winter residents, several resident species of ducks and Canada geese nest and rear their young around the shorelines of the lake and river. Mallards, three species of teal, wigeons, coots, and pied-billed grebes are among the many species reported to nest along the shoreline and/or in adjacent marshes.

Birds of prey such as hawks, owls, and bald eagles are associated with the Pend Oreille riparian areas. Bald eagles have been nesting in this area for as long as recorded history goes back. Ospreys (*Pandion haliaetus*) are found in the area from mid-March through October. The osprey population of northern Idaho and northeastern Washington constitute the largest nesting concentration in the western states and perhaps the entire country.

### 3.7 Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed and proposed threatened or endangered species. Several species listed as either threatened or endangered are potentially found near the project areas (see Table 1).

**Table 1. Threatened & Endangered Species of the Lake Pend Oreille & Albeni Falls Dam.**

Scientific Name	Common Name	Listing Status
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Threatened
<i>Salvelinus confluentus</i>	Bull trout	Threatened
<i>Spiranthes diluvialis</i>	Ute ladies' tresses	Threatened

<i>Canis lupus</i>	Gray Wolf	Endangered
<i>Lynx canadensis</i>	Lynx	Threatened

Bald eagles and bull trout are known to occur in the vicinity of the project. The gray wolf, Ute ladies' tresses, and lynx do not have sufficient habitat to occur within the project vicinity.

Information on known occurrences of endangered and threatened species in the project vicinity, and the potential impacts of the proposed projects on these species are addressed in a separate Biological Evaluation.

### **3.8 Cultural and Native American Concerns**

The proposed project area is within the lands ceded by the Kalispel Tribe of Indians; the Kootenai Tribe of Idaho, Coeur d'Alene Tribe, Confederated Salish and Kootenai Tribes of the Flathead Reservation, and the Spokane Tribe of Indians also have cultural interests in the area. The site has been recommended as eligible for the National Register of Historic Places based on Criterion D – sites that have yielded, or may be likely to yield, information important in prehistory or history.

### **3.9 Land Use**

Idaho Department of Fish and Wildlife manages the three project sites, as well as others around Pend Oreille River, for conservation, maintenance and management of wildlife, wildlife resources, and habitat. The public uses the area for recreational activities including fishing, camping, and hunting.

### **3.10 Utilities and Public Service**

There is an easement for a buried waterline for an adjacent property owner on the eastern end of the subject property at the Priest River site. The utility, however, is well beyond the construction zone. There are no known additional utilities at the proposed project sites. The rail line would remain active during construction. Coordination with POVRR would help to minimize impacts to their operations.

### **3.11 Air Quality and Noise**

Sandpoint, Idaho is currently listed as a non-attainment area for particulate matter (PM-10) for the air quality standards set forth by the Idaho Department of Environmental Quality (IDEQ 2005); however, the levels were not severe enough to violate the national standards. Air pollution from coarse particulate matter in PM-10 typically comes from windblown dust, re-entrained road dust, smoke (residential, agricultural, and forest fires), industrial emissions, and motor vehicle emissions (IDEQ 2005). No known noise problems exist in the area.

### **3.12 Transportation**

Trucks hauling material for this project would utilize public highways and secondary roads as necessary to travel to and from the quarry or materials pit. The number of trucks, and the time between loads would allow the haul to proceed with little or no impact on normal traffic during the winter season. Temporary access roads would be constructed at the beginning of the project. The temporary haul road at the Priest River site would be closed to the public and blocked when not in use by the Corps contractors. Temporary roads placed on the railroad right-of-way would be restored or removed to satisfy the requirements of POVRR. Temporary crossings would be removed by the railroad to prevent unauthorized access.

### **3.13 Socio-Economic**

The Priest River project site is located near the town of Priest River, Bonner County, Idaho. The immediate area is located within the Priest River Wildlife Management Area, which is used recreationally for hunting and fishing. The Carr Creek and Hornby Creek project sites are located near the town of

Sandpoint, also in Bonner County, Idaho. The two major sectors of the economy for these towns are tourism and recreation. Bonner County's population is estimated at 40,908 with 97% white persons, and approximately 13% of the population is below the federal poverty level (US Census Bureau 2006). Sandpoint's population is 6835 with 96% white persons; Priest River is much smaller at 1754 with 95% white persons. American Indians make up the largest non-white segment of the population.

### **3.14 Recreation**

Recreation is an important industry for the local and county governments. Fishing, boating, skiing, hunting, camping, and bird watching are common recreational activities in Bonner County. Pend Oreille Lake and River host many water activities such as swimming and water skiing. West Bonner County Park is located east of Priest River on the north shore of the Pend Oreille River and provides a boat ramp for access to the lake and river system. The public uses the shoreline area that is being protected by the bank stabilization project for recreation, hunting, and bird watching. The Priest River Recreation area is adjacent to the Wildlife Management Area where Phase 2 bank stabilization is proposed.

### **3.15 Aesthetics**

The hillsides all around Pend Oreille River are forested with evergreens. Small pockets of residential development as well as a highway and railroad line are visible near the shoreline of the river. Approximately 10% of the shoreline has riprap for bank stabilization. The proposed project area has the appearance of a shoreline without development but one that is in a state of constant erosion. Trees and other vegetation are continually sloughing off, and turbidity is nearly constant at high pool. The remaining upland riparian area is threatened if erosion is not curtailed.

## **4.0 ENVIRONMENTAL EFFECTS**

### **4.1 Geology and Hydrology**

Under the No-Action alternative, the annual rise and fall of the reservoir water level is expected to continue to erode significant portions of the shoreline contributing to excessive sedimentation in Pend Oreille River.

With the proposed action, the banks at the project sites would be stabilized with Class IV riprap or smaller diameter spall rock to a depth of about three feet. All work for the proposed project would be conducted in the dry at the Carr Creek and Hornby Creek sites. A small amount of riprap would be placed in the water at the Priest River site due to the pool level going no lower than 2055 during the construction period. As waves and wind work the area after construction, the sediment in the shallow area may disperse into the reservoir, thus deepening the area immediately in front of the stabilized bank. The sediment would disperse rapidly in the current and should pose no problem with the hydrology or geology of these locations.

Some of the hydrologic effects associated with use of riprap for bank stabilization include restriction of natural channel movement, reduction of channel complexity, decreased sinuosity, and increased velocity. This topic is further discussed in section 6.0 Cumulative Impacts.

### **4.2 Ecology**

With the No-Action alternative, the Pend Oreille Wildlife Management area would continue to experience loss of important waterfowl and wildlife management habitat; however, there would be no increase of riprap, which can have some negative effects on fish habitat.

For the proposed action, there would be a loss of approximately 0.77 acre of mud flat when the project is completed. However, at the rate of three tenths of an acre each year, the result would be a 3 to 4 acre loss of existing habitat within 10 years. When completed, the project would prevent further loss of a National Register eligible archaeological site, as well as save the existing riparian, wetlands, and under-story habitat from eroding into the river. Preventing erosion of the Wildlife Management Areas will preserve many acres of waterfowl nesting and foraging habitat.

#### **4.3 Water Quality**

Under the No-Action alternative, no changes are expected to occur for water quality in the Pend Oreille River.

Since only minimal in-water work would occur for 100 feet of rock placement, no significant water quality impacts are expected from the proposed construction activities. No long-term effects to water quality are expected to result from the proposed action. A 401 certification is being coordinated with Idaho Department of Environmental Quality (IDEQ). The following management actions would be implemented during construction activities. These conditions are included in the project *Construction Management Plan*; a Corps inspector would be on-site to ensure that contractors abide by these requirements.

1. All grading work will be accomplished in the dry, with minimal rock placement below the low-pool water level;
2. Petroleum products and other toxic material will be stored in a staging area above summer pool elevation, and will be prevented from entering surface waters. Refueling of equipment will be restricted to areas at least 100 feet from the lakebed.
3. If the contractor observes distressed or dead fish, or any obvious sign of contamination such as oil sheen or odor, all work will cease and the inspector shall be notified;
4. A spill response plan will be prepared as required by the Corps, and the contractor(s) working on placement of rock will be required to have spill kits and trained employees on site at all times during active construction.
5. The Corps will hang turbidity curtains at the Priest River site to minimize turbidity during in-water rock placement.

#### **4.4 Vegetation**

Under the No-Action alternative, continued erosion of the shoreline will result in loss of wetlands and vegetation along the banks as they undercut with each year's drawdown.

For the proposed action, care would be taken to minimize impacts to vegetation along haul routes, and along the shoreline where the riprap would be placed on the mudflat during low pool. Disturbed areas associated with the temporary access roads would be replanted with native woody vegetation to re-establish cover and prevent erosion. Because construction will be in January, the majority of the vegetation will be in its dormant state, in frozen ground, and likely under snow. Re-planting will occur the following autumn to allow the plants to acclimate before winter.

#### **4.5 Fish**

For the No-Action alternative, erosion of the shoreline will continue to cause sedimentation of important kokanee spawning habitat. The significant decline in the Pend Oreille kokanee population is regarded as an effect of operation of Albeni Falls Dam. Recovery efforts are underway, but excessive sedimentation will continue if the banks are not stabilized.

Potential impacts to fishery resources were considered during the design of the proposed work, and steps have been taken to minimize construction impacts. The only in-water work that would occur during construction is at the downstream end of the Priest River Wildlife Management Area site. Approximately 100 feet of shoreline would have riprap placed within the first three feet of shoreline below the low-pool water level of 2055. The other project sites comprise a total of about 1900 feet of shoreline that would have riprap placed above the low-pool water level. Bank stabilization will reduce sediment input from the specific shorelines of the project areas. This will in turn reduce the sedimentation of important kokanee spawning habitat.

#### 4.6 Wildlife

With the No-Action alternative, the Pend Oreille Wildlife Management Area would continue to experience loss of important waterfowl and wildlife management habitat.

Under the proposed action, bank stabilization will prevent the loss of many acres of wildlife habitat. Many waterfowl species are either residents or migrants among the local bird population in the vicinity of the project sites. However, the bank stabilization activities should not have a significant effect on the local bird population. No nesting or roosting habitat would be physically altered. Prey availability in any foraging habitat in the project area would only temporarily be affected, if at all.

#### 4.7 Threatened and Endangered Species

The No-Action alternative will have no effect on any endangered species.

Potential impacts of the proposed project to threatened and endangered species are addressed in a separate Biological Evaluation (BE). This BE provides the Corps' rationale for the effect determinations briefly described below and summarized in Table 2.

Bald eagles are known to winter over and feed in the area near the project site. No nest site is located within a 1.5-mile radius. Due to the concern for impacts on wintering bald eagles, the area near the construction work would be monitored on a daily basis for wintering eagles; no work would be conducted if it appears there would be a disturbance to eagles. Work would be monitored during construction from January 1<sup>st</sup> through March 1<sup>st</sup>, or until project completion, whichever comes first. The project will not likely adversely affect bald eagles. Ute ladies' tresses, gray wolf, and lynx are not known to inhabit the area where the project is located; the project would have no effect on these species. There would be no in-water work at the Carr and Hornby Creek sites, and only minimal in-water rock placement at the Priest River site, so the project would not likely adversely affect bull trout.

**Table 2. Effect Determination Summary.**

Scientific Name	Common Name	Effect Determination
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Not likely to adversely affect
<i>Salvelinus confluentus</i>	Bull Trout	Not likely to adversely affect
<i>Canis lupus</i>	Gray Wolf	No effect
<i>Spiranthes diluvialis</i>	Ute Ladies' tresses	No effect
<i>Lynx Canadensis</i>	Lynx	No effect

#### 4.8 Historic Properties (Cultural Resources) and Native American Tribal Concerns

The No-Action alternative will have a detrimental effect on three sites eligible for the National Register of Historic Places. These sites are important cultural areas to the local Native American Tribes and hold many artifacts buried within the soils that are being lost to the river with each pool drawdown. The continued bank erosion will result in loss of important archaeological data for understanding the

prehistory of the area and the cultural history of several Native American tribes.

Federal, State, and Tribal archaeologists have reviewed the proposed work and have concluded that construction has potential to affect the three proposed project sites, which are recommended as eligible for the National Register of Historic Places. The Corps has conducted archaeological investigations in all construction impact areas to identify whether the planned work actually would affect the three project sites, and if so, in what ways. The Corps has determined that earth disturbances associated with the proposed construction would not affect the historical sites in any way that would degrade the qualities that make them eligible for the National Register. The current design for the project causes no direct losses of undisturbed parts of the archaeological site, and construction of the project in fact would protect the site from further losses now being caused by bank erosion and slope failure. It also would help conceal the remaining part of the site and reduce risk of vandalism along the bank.

The Corps has determined that the proposed federal action falls within the scope of the 1991 Federal Columbia River Power System Hydroelectric Operations Programmatic Agreement attached to an environmental impact analysis of the Intertie Development and Use Program (IDUPA). In accordance with the provisions of that agreement, specifically Stipulation 3, Interim Management, the Corps would follow the procedures of 36 CFR Part 800 in effect in 1991 when the IDUPA was signed, in addition to other provisions of the IDUPA that may apply. The Corps has discussed the cultural and historic aspects of the proposed action with the Albeni Falls Dam cultural resource management Cooperating Group, a technical-level panel of federal, tribal, state, and local subject-matter experts, and is communicating about the three project sites separately with Indian tribal governments. The Corps has recommended that the proposed work proceed with a "no adverse effect" finding. To assure that the proposed work adheres to the conditions for "no adverse effect," the Corps would continue to monitor the design and construction. However, should any previously undiscovered historic properties or human remains inadvertently be encountered during construction, all work in the affected area would cease. The Corps promptly would notify the Idaho State Historic Preservation Officer and local Native American Tribes and would work with them to develop and coordinate a plan for treating the properties or remains. The Corps is in consultation with the Tribes and is waiting for their responses regarding the work proposed for this project.

#### **4.9 Land Use**

Neither of the two considered alternatives would change the land use designations on the property. The property would remain within Corps ownership and remain within the complex of Pend Oreille Wildlife Management Areas. Idaho Department of Fish and Wildlife will continue to manage the areas for conservation, maintenance and management of wildlife, wildlife resources, and habitat.

#### **4.10 Utilities and Public Service**

Neither of the two considered alternatives would have an effect on telephone, cable, or electric utilities as none are present in the project vicinity. The existing waterline is beyond the construction area and would be entirely avoided.

#### **4.11 Air Quality and Noise**

No effects to air quality or noise are expected to occur as a result of the No-Action alternative.

Air quality meets the standards as set forth by the Idaho Department of Environmental Quality and would not be affected by the construction of the bank stabilization structure. During construction, there would be a temporary and localized reduction in air quality due to emissions from equipment operation during hauling, access road development, and general construction of the bank stabilization. Noise would be intermittent along the haul route and would vary at the work site depending on the type of equipment

operating during construction. However, these noise and air quality effects would be temporary and localized, and would occur only during daylight hours. All noise factors have been addressed for their effect on threatened and endangered species.

#### **4.12 Transportation**

No changes in local road traffic or transportation patterns are expected to occur as a result of the No-Action alternative. The erosion and bank failure have progressed within approximately 500 lineal feet of mainline railroad tracks. This has led to the potential interruption of the BNSFRR and POVRR if the erosion is not stopped at its current location.

Under the proposed action, construction vehicles may interrupt local traffic when entering or leaving the construction area and while on the city truck route. Interruptions are expected to be minimal. Any damages that may occur to the truck route (Highway 2) would be repaired at Corps expense. Repairs and restoration would be to a condition as good as that which was present prior to the start of the Corps work on this project.

#### **4.13 Socio-Economic**

Under the No-Action alternative, no effects to the socio-economic status of individuals or the county economy are expected to occur.

Construction activities associated with this project would not adversely impact the two major sectors of the economy, which are tourism and recreation. Wintertime tourism and recreation are generally associated with skiing and other snow sports that are not in the immediate area of Pend Oreille River. The placement of riprap would not impact the area of Pend Oreille River shoreline that is typically used for recreation. The proposed project sites hold no other significant socio-economic impact to the area. The proposed work should have a positive economic effect in that contract equipment would be hired to perform the work, materials would be purchased from local quarries and other suppliers, and services and facilities in the greater Priest River/Ponderay/ Kootenai/Sandpoint area would be utilized in support of the effort. The work would be done in the winter months, normally a slow period in the construction industry. Another positive effect would be that the railway would continue to operate without interruption allowing POVRR to pursue their economic goals.

#### **4.14 Recreation**

The No-Action alternative is not expected to affect the recreational uses of the shoreline. The mud-flat characteristic will be maintained, but overall land base area available will continue to decrease as the shoreline of the Wildlife Management Areas sloughs off into the river.

There would be no negative impact on Pend Oreille River recreational activities primarily due to the season of the year – winter – and the fact that the work would be done during annual reservoir drawdown. A stabilized shoreline and improved access for foot traffic along the maintenance trail at the Priest River site may provide economic benefits to the local community by providing access to the Pend Oreille River shoreline, subject to restrictions imposed by the Corps and Idaho Department of Fish and Game. General recreation along the shoreline may benefit from the project somewhat due to elimination of sediment entering the water and stabilization of the shoreline.

#### **4.15 Aesthetics**

Under the No-Action Alternative, the aesthetic characteristics of the Pend Oreille River would remain the same.

During construction, there would be some disturbance from heavy equipment. Such disturbance is not expected to be significant. After construction is complete, the site would look different immediately near the shoreline with a riprap bank stabilization structure in place of the eroding bank. However, this structure would prevent further loss of shoreline and would maintain the remaining habitat and cultural resources in place. The appearance would change from a muddy sloughing shoreline, to a rocky shoreline.

## **5.0 UNAVOIDABLE ADVERSE EFFECTS**

Unavoidable adverse effects of the proposed projects include: 1) the disruption of local and tourist traffic by construction vehicles; 2) disruption to local birds in the area due to noise of construction activities; and 3) the loss of 0.77 acre of mudflat habitat. Birds are the most prevalent species group on site. Some small mammals may also be disturbed. For reasons discussed in this document, the Corps has determined that these effects are not significant.

## **6.0 CUMULATIVE IMPACTS**

Riprap along shorelines has several negative ecological effects associated with it. The Pend Oreille River has approximately 115 miles of shoreline (USACE 1981). About 10% of the river's shoreline consists of boulders and riprap (IDEQ 2001). The Corps placed riprap along 800 feet of shoreline at Priest River Wildlife Management Area in April 2006, and has plans to stabilize two more historic sites to protect wildlife habitat and historic properties. The two projects in the foreseeable future are Hoodoo Creek (site 10-BR-20), and Priest River (site 10-BR-95). Hoodoo Creek requires approximately 558 feet of riprap for bank protection. The plan for the Priest River site involves approximately 3,675 feet of a combination of riprap and biological erosion control methods including plantings and biologs. The current proposed projects and the two future projects amount to approximately 1% of the total shoreline along the Pend Oreille River and Lake.

Cumulative hydrological impacts of using riprap for bank protection along the Pend Oreille River could include the following: (1) scour and transporting of bank material cannot occur naturally in the areas of riprap, (2) lateral channel migration will be inhibited, (3) habitat complexity will decrease along armored banks, and (4) increased velocity past riprap can cause scour elsewhere as stream energy is transferred downstream (Crandall et al. 1984). Riprap also affects biological community assemblages. At least one study found that smaller size classes of salmonids decrease in number in riprap habitat, but yearling and larger sizes increase in number (Knudsen and Dillely 1987); however, the authors stated that the effects are much more pronounced in small streams than in large rivers. Schmetterling et al. (2001) acknowledge the paradox of trying to maintain natural fluvial processes at the same time as protecting public and private infrastructure from those same processes.

Other cumulative impacts of this maintenance project would include the loss of 0.77-acre of shallow water mud flat habitat. The impact area largely includes high ground recently exposed by bank erosion. Although not in-kind, compensation would be provided by enhancing the shallow water habitat by establishing overhanging riparian vegetation and trees at the top of the bank. Cumulative impacts of this maintenance project would be highly localized, and would not significantly affect the quality of the natural or built environments. In both cases, the inconvenience of minor short-term disruptions is outweighed by long-term potential benefits from bank stabilization and protection of cultural resources.

Some of the short-term disruptions are increased vehicular traffic, increased noise during construction hours, and change of appearance of the immediate area. The long-term potential benefits are maintenance of habitat used by avian species, protection of cultural resources, and maintenance of the riparian habitat that currently exists at the project sites with additional riparian plantings of native vegetation.

Based on Corps ownership and current management of this area within the greater Pend Oreille River Wildlife Management Area (managed by Idaho Department of Fish & Wildlife), future development in this area is not anticipated and highly unlikely.

## **7.0 COORDINATION**

The following agencies and entities have been involved with the environmental coordination of the proposed project:

- U.S. Fish and Wildlife Service (USFWS)
- Idaho Department of Fish and Game (IDFG)
- Idaho Department of Lands (IDL)
- Idaho Department of Environmental Quality (IDEQ)
- Idaho State Historical Preservation Officer
- Kalispel Tribe
- Confederated Salish and Kootenai Tribes of the Flathead Reservation, Historic Preservation Officer
- Kootenai Tribe of Idaho
- Coeur d'Alene Tribe

The issue of concern was the timing window of construction. Construction must occur during the winter months when the water level has drawn down and the ground is frozen to provide access. Based on the USFWS concern for wintering eagles, monitoring would occur daily during construction prior to the start of the day for eagles that may be within ¼ mile of the project area. It was also noted that there is one eagle nest approximately two miles from the Priest River project site.

## **8.0 ENVIRONMENTAL COMPLIANCE**

### **8.1 National Environmental Policy Act**

This Draft Environmental Assessment, prepared October 2006, is a compilation of environmental information on the project related to Pend Oreille River 10-BR-94, 10-BR-14, and 10-BR-111 Shoreline Stabilization. The BE was coordinated with state and federal agencies. This document is available for public review and comments will be accepted during the open comment period.

### **8.2 Endangered Species Act Section 7 Consultation**

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or endangered species. A Biological Evaluation was submitted to USFWS on September 12, 2006 for their concurrence with the Corps' findings. The Corps is waiting for a response from USFWS.

### **8.3 Clean Water Act Compliance**

A 404(b)(1) evaluation, which demonstrates compliance with the substantive requirements of the CWA, is required for work involving discharge of fill material into the waters of the United States. Because of the in-water work at the Priest River site, and because a portion of the bank stabilization structures would become wet during full pool, a 404(b)(1) evaluation was prepared for this project. The requirement for a 401 Water Quality Certification is being coordinated with Idaho Department of Environmental Quality. The contractor would be required to develop an erosion control plan, which would be put into action prior to the beginning of construction.

## **8.4 Hydraulic Permit Approval**

No HPA is required.

## **8.5 Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (16 USC 470) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects. This goal is accomplished through Corps funding of U.S. Fish and Wildlife Service habitat surveys evaluating the likely impacts of proposed actions, which provide the basis for recommendations for avoiding or minimizing such impacts. A Fish and Wildlife Coordination Act Report is not required for maintenance work.

## **8.6 National Historic Preservation Act**

The National Historic Preservation Act (16 USC 470) requires that the effects of proposed undertakings or actions on properties (such as archaeological sites, buildings, structures, or objects) included or eligible for the National Register of Historic Places must be considered. Affected State and/or Tribal Historic Preservation Officers (SHPO) and the Advisory Council on Historic Preservation (ACHP) must be afforded an opportunity to comment on the undertaking, and the agency also must consult with affected Indian tribes. The proposed undertaking falls within classes of activity covered by the 1991 Intertie Development and Use Environmental Impact Statement Programmatic Agreement. Following procedures set up by that PA, the proposed undertaking as described in this EA was reviewed by archaeologists and cultural specialists of the Corps, the Kalispel Tribe of Indians, the Confederated Salish and Kootenai Tribes of the Flathead Reservation, Kootenai Tribe of Idaho and Coeur d'Alene Tribe. The review findings have been taken into account to develop a treatment program of archaeological investigations and management measures that will prevent adverse effects of construction on the National Register-eligible sites. The treatment program has been coordinated with the above parties. The Corps is waiting for a response from the Idaho State Historic Preservation Officer.

## **8.7 Executive Order 12898, Environmental Justice**

Executive Order 12898 directs every federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations.

The potentially affected community is not characterized as a minority or low-income population. A query of the US Census Quickfacts (US Census Bureau 2006) indicated that Bonner County contained a 97% Caucasian population, and less than 16% of the County's population had income below the poverty level.

The project does not involve the siting of a facility that would discharge pollutants or contaminants, so no human health effects would occur. Maintenance of the proposed erosion control structures would not negatively affect property values in the area, or socially stigmatize local residents or businesses in any way. No interference with local Native American Nations' treaty rights would result from the proposed projects; construction activities would not physically interfere with fishing, or impact fishery resources.

Since no adverse health or other detrimental effects are anticipated to result from the project, the Corps has determined that no disproportional impacts would occur.

## **9.0 CONCLUSION**

Based on the above analysis, this project is not a major federal action significantly affecting the quality of the human environment, and therefore does not require preparation of an environmental impact statement.

## 10.0 REFERENCES

- Crandall, D.A., R.C. Mutz and L. Lautrup. 1984. The Effects of Hydrologic Modifications on Aquatic Biota, Stream Hydrology, and Water Quality: A Literature Review. Illinois Environmental Protection Agency, Division of Water Pollution Control. Springfield, Illinois.
- Idaho Department of Environmental Quality. 2001. Clark Fork/Pend Oreille Sub-Basin Assessment and Total Maximum Daily Loads. Coeur d'Alene, ID
- Idaho Department of Environmental Quality. 2005. 2004 Air Quality Data Summary. Boise, ID
- Idaho Department of Fish and Game. 2006. Pend Oreille Wildlife Management Area: Wildlife. <http://fishandgame.idaho.gov/cms/wildlife/wma/pendoreille/wild.cfm> Accessed: July 2006
- Knudsen, E.E. and S.J. Dilley. 1987. Effects of riprap bank reinforcement on juvenile salmonids in four Western Washington streams. North American Journal of Fisheries Management 7:351-356
- Martin, R.C., H.J. Hansen and G.A. Meuleman. 1988. Albeni Falls Wildlife Protection, Mitigation, and Enhancement Plan. Prepared for Bonneville Power Administration. Contract No. DE-A179-87BP36154. Portland, OR.
- Northwest Archaeological Associates. 2005. Report of Additional National Register of Historic Places for the Albeni Falls Dam Reservoir, Bonner County, Idaho. Prepared for the US Army Corps of Engineers, Seattle District. Contract No DACW67-99-D-1014. Seattle, WA.
- Schmetterling, D.A., C.G. Clancy and T.M. Brandt. 2001. Effects of riprap bank reinforcement on stream salmonids in the western United States. Fisheries 26(7):6-13
- Terra-Burns, M. 2005. Idaho Fish & Game Environmental Biologist, Panhandle Region. Personal Communication.
- US Census Bureau. 2006. State and County Quickfacts: Bonner County, Idaho. <http://quickfacts.census.gov/qfd/states/16/16017.html> Accessed: August 2006
- US Army Corps of Engineers. 1981. Albeni Falls Project Master Plan, Pend Oreille River, Idaho. Memorandum 25. Seattle, WA
- US Army Corps of Engineers. 2005. Draft investigations of migratory bull trout (*Salvelinus confluentus*) in relation to fish passage at Albeni Falls Dam. Seattle, WA
- Washington Department of Ecology. 2004. Quality Assurance Project Plan Pend Oreille River Temperature Total Maximum Daily Load Technical Study. Publication No. 04-03-109. Olympia, WA

## Appendix A: Photographs

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**Figure A-1.** Sloughing bank following receding high pool elevations. Exposed bank material risks exposure of culturally sensitive material at Priest River site 10-BR-94.



**Figure A-2.** Sloughing bank following receding high pool elevations. Receding shoreline decreases waterfowl habitat and threatens Canada goose nesting areas.

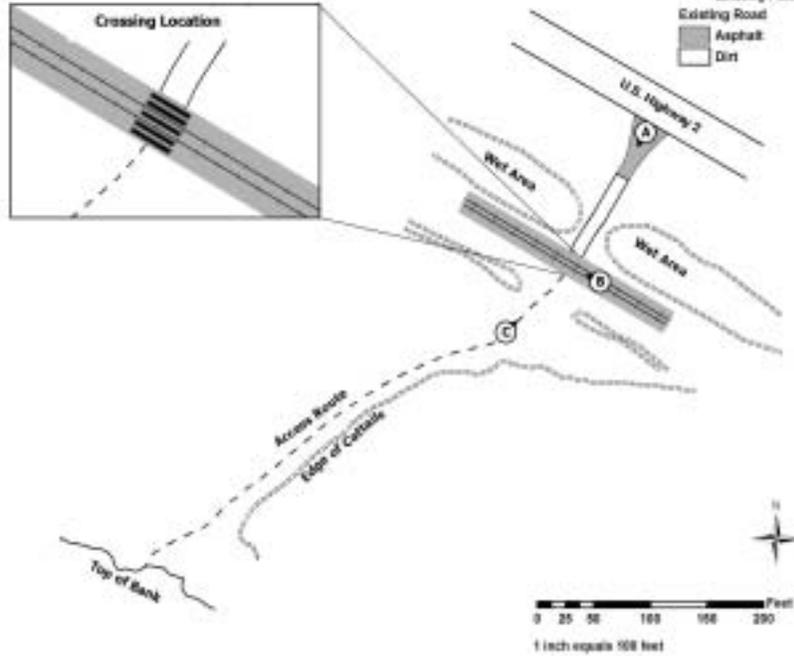


**FigureA-3.** Shown here at high pool elevation, sloughing bank takes out vegetation and causes turbidity at Hornby Creek, Bonner County, Idaho.

## Appendix B: Railroad Crossing & Access Route Profile

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Albion Falls Dam  
 Priest River Wildlife Management Area  
 10BR94 Bank Stabilization  
 Railroad Crossing, Access Route Profile



Access Route Profile



## Appendix C: Site Layouts and Design Documents

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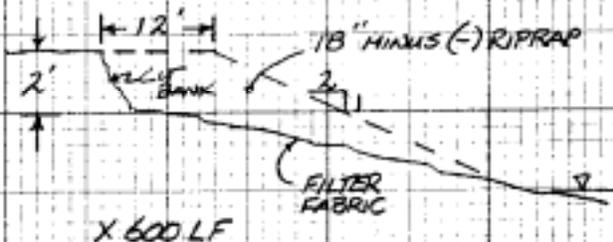
**Figure C-1.** Carr Creek (10-BR-111) Erosion Control Project Area and Layout of Construction Features.

## CARR CREEK:

1. ACCESS ACROSS R.R. TRACKS
2. CULTURALLY SENSITIVE SITE - NO EXCAVATION ALLOWED
3. ALTERNATIVES:
  - a. PLACING ROOT WADS @ CUT BANK WOULD REQUIRE EXCAVATING A KEYWAY INTO BANK TO PIN LOGS TO PREVENT FLOATING
  - b. GABION MATS ARE LABOR INTENSIVE AND EXPENSIVE.
  - c. ROCK RIPRAP ON FILTER FABRIC BANK PROTECTION IS MOST EFFECTIVE AND PERMANENT.

### 4. SELECTED ALTERNATIVE:

#### a. ROCK RIPRAP ON FILTER FABRIC



+ 200 LF OF ACCESS ROAD CONSTRUCTION @ 12' WIDE X 2' THICK OF 4" - QUARRY SPALLS.

#### b. QUANTITIES

$$\text{RIPRAP: } \left(\frac{2+4}{2} \times 12\right) + \left(\frac{4 \times 16}{2}\right) = 68 \text{ FT}^2 \times 600 \text{ LF} = 27 \frac{\text{FT}^3}{\text{CY}} = 1500 \text{ CY}$$

$$\text{SPALLS: } 2 \times 12 \times 200 \text{ LF} = 27 = 180 \text{ CY}$$

$$\text{FILTER FABRIC: } 600 \text{ LF} + 200 \text{ LF} = 800 \text{ LF}$$

#### c. EQUIPMENT

200 SERIES EXCAVATOR - 40 HRS. REG.

D4 DOZER - 40 HRS. REG.

10 CY DUMP TRUCKS (5EA) - 40 HRS. REG. = 200 HRS. REG.

#### d. COSTS:

$$\text{RIPRAP: } 1500 \text{ CY} \times \$10/\text{CY} = \$15,000$$

$$\text{SPALLS: } 180 \text{ CY} \times \$8/\text{CY} = 1,440$$

$$\text{FABRIC: } 800 \text{ LF} \times \$1/\text{FT} = 800$$

$$\text{EXCAVATOR: } 40 \text{ HRS.} \times \$125/\text{HR.} = 5,000$$

$$\text{DOZER: } 40 \text{ HRS.} \times \$75/\text{HR.} = 3,000$$

$$\text{DUMP TRUCKS: } 200 \text{ HRS.} \times \$65/\text{HR.} = 13,000$$

$$\text{MOB/DEMOS DOZER + EXCAVATOR @ \$500 EA} = 1,000$$

$$\text{CONTRACTING} = \$1,000$$

$$\text{SUPERVISION + INSPECTION (SI) 2EA. @ \$1000/DAY \times 5DAYS} = \$10,000$$

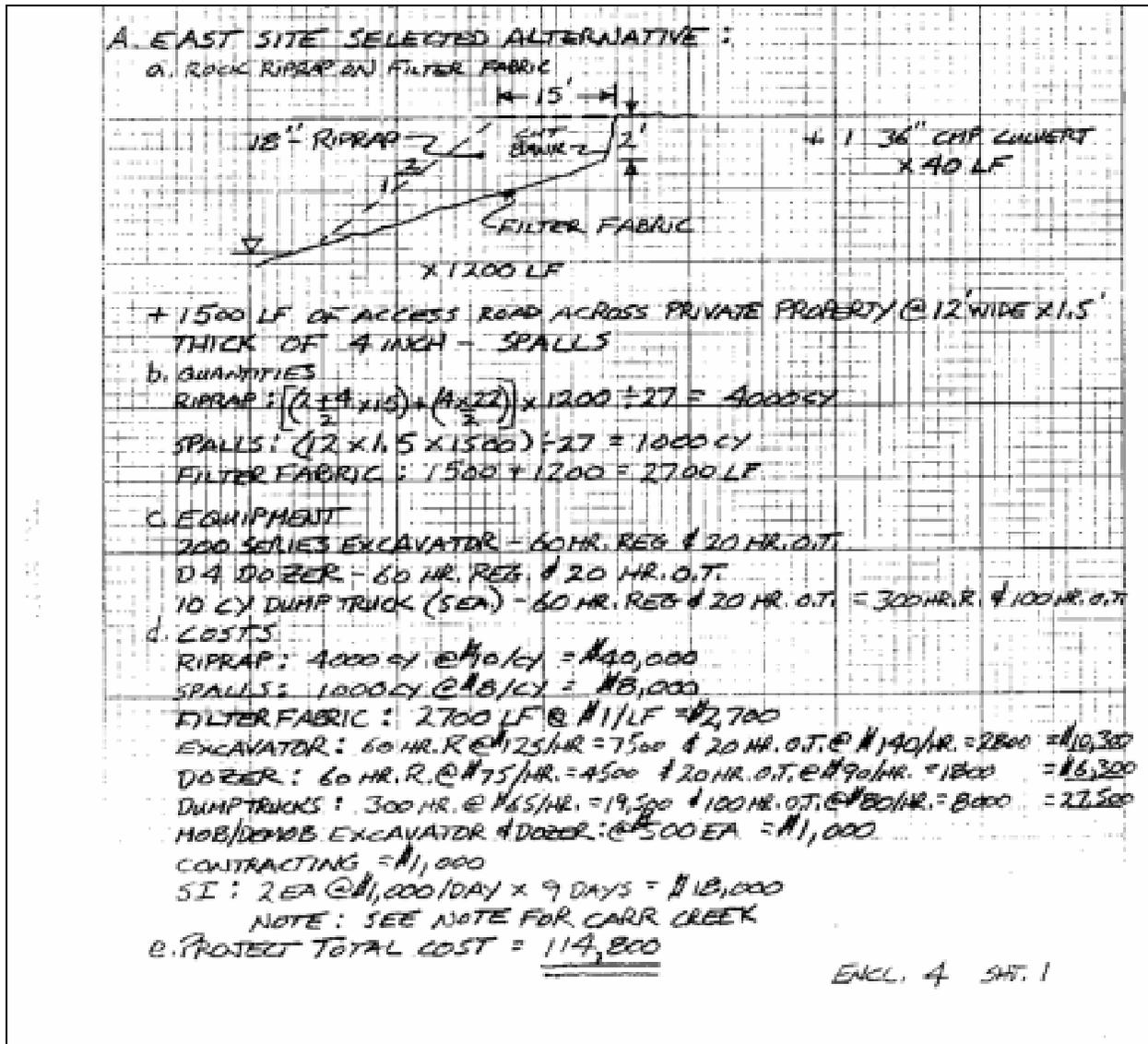
NOTE: SI INCLUDES WAGES, PER DIEM, VEHICLES, ADMIN., MISC. EXPENSES

$$\text{e. PROJECT TOTAL COST.} = \underline{\underline{\$50,240}}$$

**Figure C-2.** Carr Creek (10-BR-111) Erosion Control Project, Design Typical Section. Total quantities are higher than expected for the 2007 project, which is 300 lineal feet only.



**Figure C-3.** Hornby Creek (10-BR-14) Erosion Control Project Area and Layout of Construction Features.



**Figure C-4.** Hornby Creek (10-BR-14) Erosion Control Project, Typical Section. Current estimated length is 1,000 lineal feet.

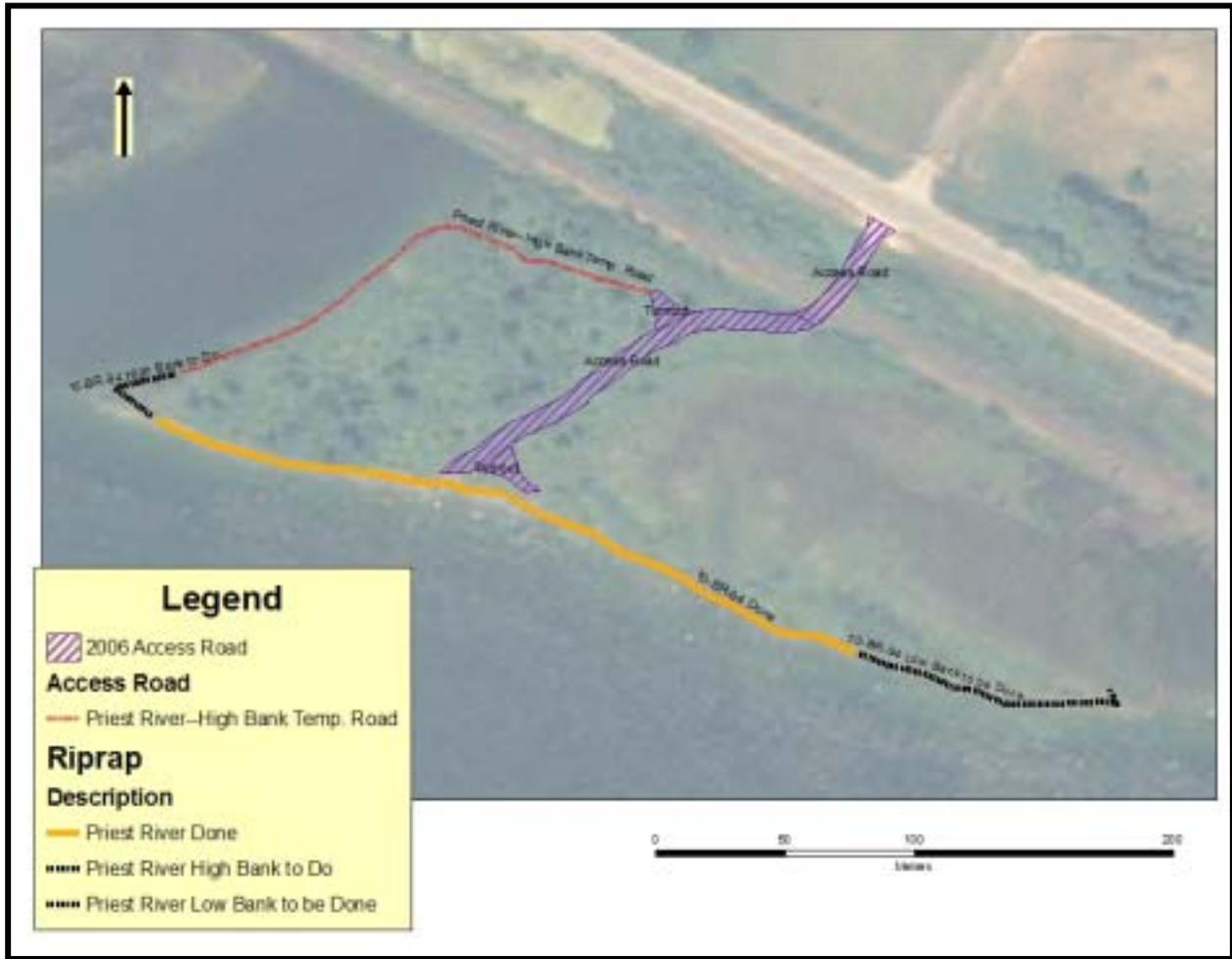
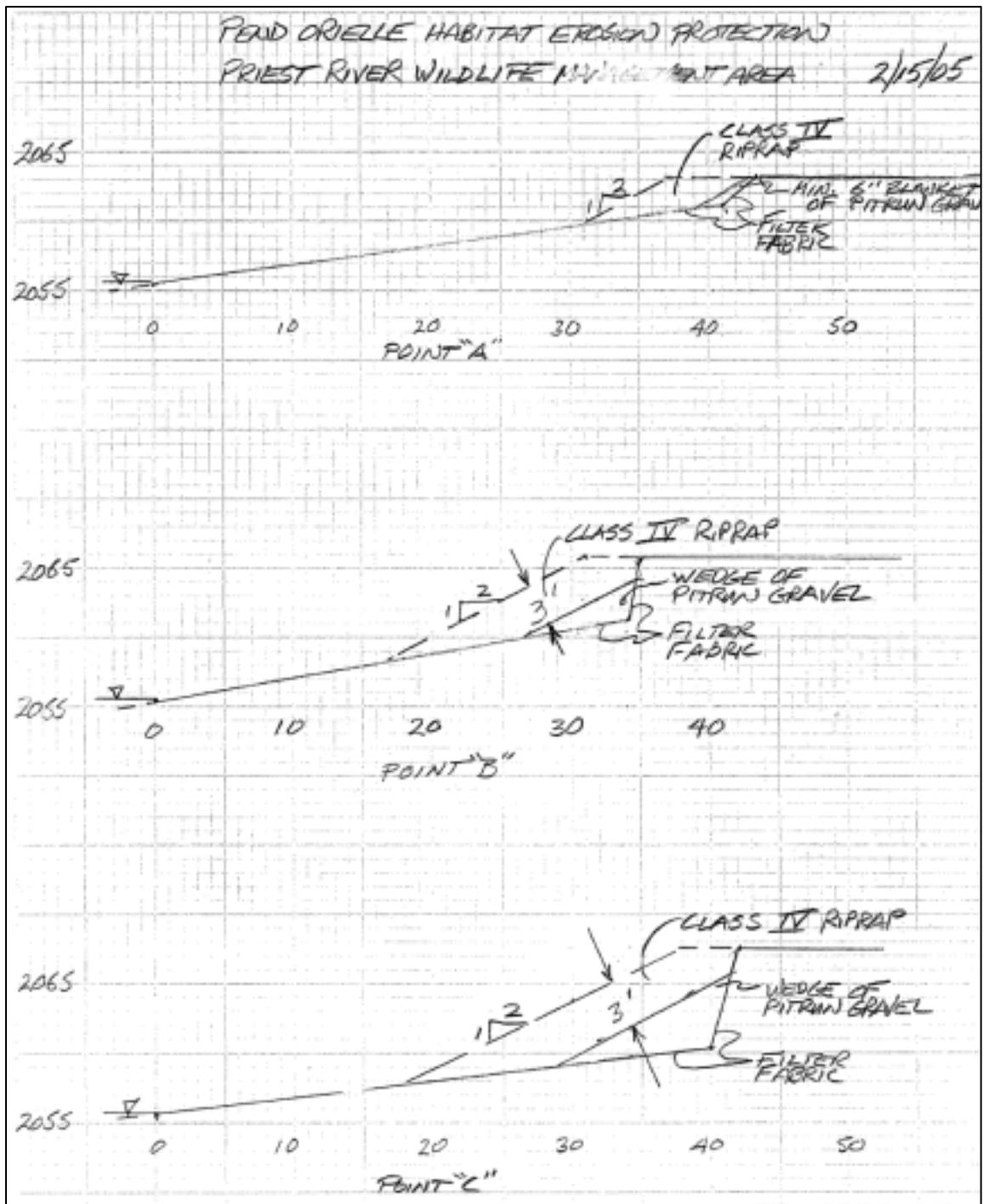
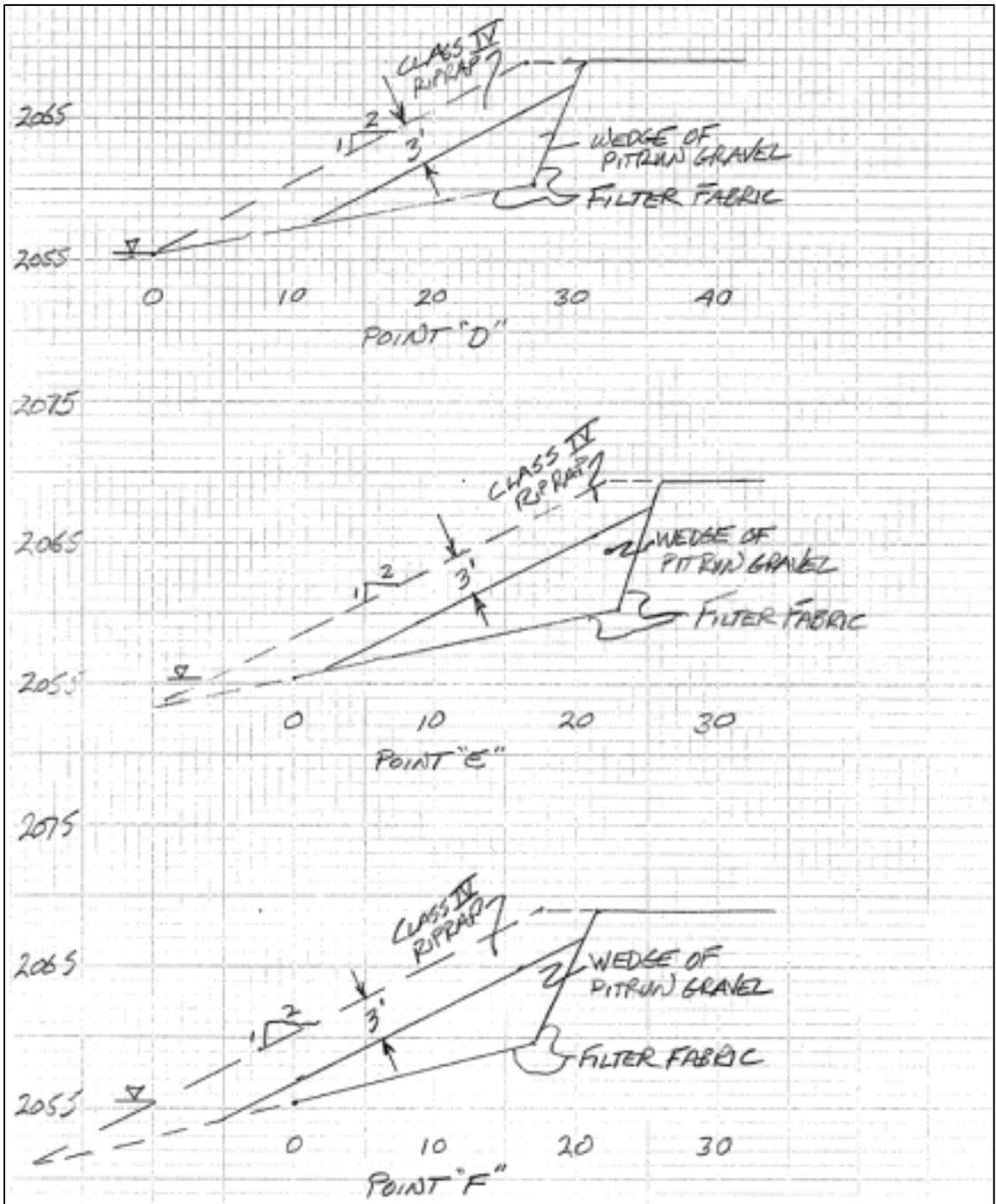


Figure C-5. Priest River (10-BR-94) Construction Plan, FY 2007.



**Figure C-6.** Priest River project plan and design details, bank profile from east to west.



**Figure C-7.** Priest River project plan and design details, bank profile from east to west.

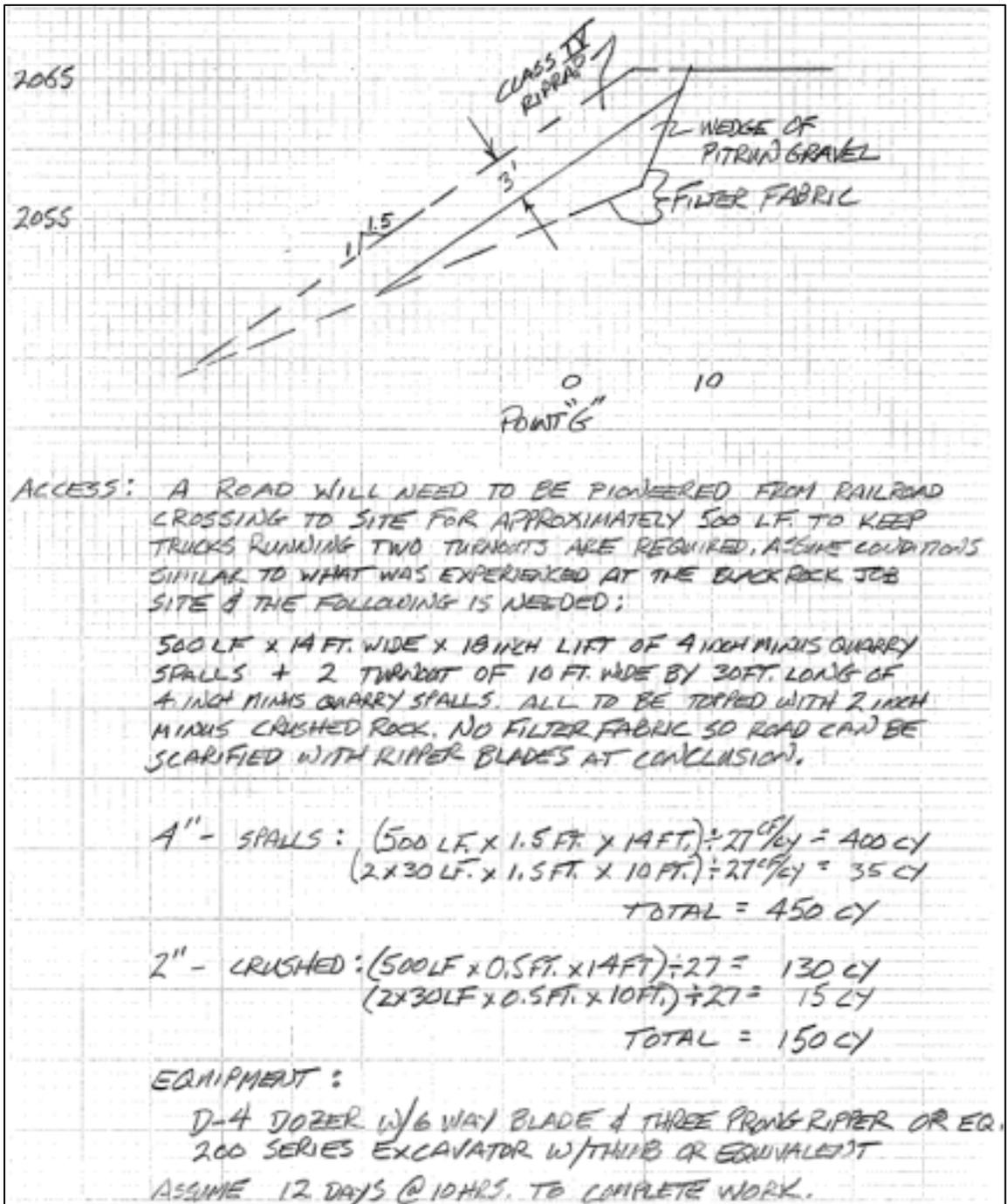


Figure C-8. Priest River project plan and design details, bank profile from east to west.