

MITIGATION ACTION PLAN

Lyle Falls Fish Passage Project

Bonneville Power Administration
Confederated Tribes and Bands of the Yakama Nation
Washington Department of Fish and Wildlife
U.S. Forest Service

February 2009

This Mitigation Action Plan identifies measures that are intended to avoid, reduce, or eliminate potential negative effects from the construction and operation of the Lyle Falls Fish Passage Project on the lower Klickitat River in Klickitat County, Washington. The mitigation measures were presented in the Lyle Falls Fish Passage Project Draft EIS (DOE/EIS-0397, March 2008) that was distributed to the public for review and comment and updated in the Lyle Falls Fish Passage Project Final EIS (November 2008). These mitigation measures are part of Bonneville Power Administration's Proposed Action.

The mitigation measures, grouped by resource, are presented in table form on the following pages. The measures described are required to be implemented by the responsible party and at the times indicated in the table. Additional measures may be required through permitting processes with Federal, state, and local agencies.

Key to abbreviations used in the Mitigation Action Plan:

ACOE	U.S. Army Corps of Engineers
BMP	Best Management Practice
OSHA	Occupational Safety and Health Administration
NMFS	National Marine Fisheries Service
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WDOE	Washington Department of Ecology

Mitigation Measure	Responsible Party	Time of Implementation
Geology and Soils Measures		
Use controlled minimal blasting to limit disturbance to surrounding rocks during blasting and excavation for the fishway.	Yakama Nation in coordination with contractor	During construction
Compile aquatic protection measures, including monitoring of potential blasting effects, in a plan for pre-construction approval by WDFW.	Yakama Nation in coordination with project biologists, engineers and WDFW	Prior to construction
Prepare and implement an erosion and sediment control plan that minimizes physical site disturbance by containing excavated materials, dewatering the excavated areas, treating water pumped from excavations, and stabilizing materials in the spoil disposal area.	Yakama Nation in coordination with engineer and contractor	Prior to and during construction
Place fencing around the external limits of the construction site to prevent unnecessary disturbance outside of the work areas.	Yakama Nation in coordination with contractor	Prior to and during construction
Install silt fences along the river and around the soil disposal area to contain any eroded materials.	Contractor	During construction
Limit the length of fishway being excavated at a given time.	Yakama Nation in coordination with contractor	During construction
Pump water that may flow into the excavations to one of the three self-contained settling tanks to remove sediment.	Yakama Nation in coordination with contractor	During construction
Armor, cover, and/or revegetate the soil disposal pile during and following construction.	Yakama Nation in coordination with contractor	During construction
Comply with the requirements of state and federal permits governing erosion control and water quality protection.	Yakama Nation in consultation with WDFW, WDOE, Klickitat County, ACOE	During construction
Water Resource Protection Measures		
Develop and implement appropriate BMPs during construction	Yakama Nation in coordination with engineer and contractor and WDFW, USFWS, WDOE	Prior to and during construction
Follow the dewatering guidelines established by WDOE to ensure that water quality is protected while the cofferdam is placed, removed, and in use.	Yakama Nation in coordination with contractor	During construction
Ensure that chemicals and fuels are not released into the work area.	Yakama Nation in coordination with contractor	During construction
Ensure that appropriate BMPs are implemented during instream work to eliminate or reduce turbidity to the greatest extent practicable.	Yakama Nation in coordination with contractor	During construction
Ensure that appropriate BMPs are implemented during upland work to eliminate or reduce erosion to the greatest extent practicable.	Yakama Nation in coordination with contractor	During construction
Ensure that all conditions set forth in construction permits to protect water quality are followed.	Yakama Nation in coordination with contractor	During construction

Mitigation Measure	Responsible Party	Time of Implementation
Fisheries Protection Measures		
Adhere to the WDFW instream work window for all in-water work in order to avoid disturbance when the majority of juvenile salmon and steelhead will be moving past the project site.	Yakama Nation in coordination with contractor	During construction
Minimize in-water work effects on fish through controlled blasting and erosion control measures, and by implementing BMPs to limit water quality degradation during construction.	Yakama Nation in coordination with contractor	During construction
Use cofferdams to temporarily isolate the area required to construct the new fish ladder exit structure.	Yakama Nation in coordination with contractor	During construction
Prohibit construction at night in order to allow fish to migrate without disturbance over the falls.	Yakama Nation in coordination with contractor	During construction
Provide a qualified fish biologist or natural resource specialist during dewatering of work areas to conduct salvage operations for any fish that become stranded in the dewatered zone.	Yakama Nation in coordination with biologist and contractor	During construction
Ensure that the final design of the new fishway complies, and is consistent with Anadromous Salmonid Passage Facility Design (NMFS Northwest Region, February 2008)	Yakama Nation in consultation with engineers and NMFS	During design and prior to construction
Compile aquatic protection measures, including monitoring of potential blasting effects, in a monitoring and operations plan for pre-construction approval by WDFW.	Yakama Nation in coordination with contractor	During construction
Address maintenance requirements for the attraction water screen, transportation channel, and the auxiliary flow diffuser in the final fishway design documents.	Yakama Nation in coordination with engineer	Prior to construction
Vegetation Protection Measures		
Install temporary fencing around the small wetland area to prevent accidental disturbance during construction.	Yakama Nation in coordination with contractor	Prior to construction
Place trees felled to clear areas for construction along the margins of the site to provide cover for birds, reptiles and small mammals.	Yakama Nation in consultation with WDFW and contractor	During construction
Consult with WDFW regarding steps to relocate the existing osprey nest platform prior to March 1 in the year of construction, including 1) installing an alternative nest pole and platform farther upstream on the Klickitat River, away from the project site and potential noise disturbance caused by project construction; or installing a platform on an existing power pole, if one is suitably situated and Klickitat Public Utility District agrees, moving nest materials from the existing platform to the new platform, and installing nest deterrent device(s) at the existing platform; 2) monitoring osprey use of both structures in March and April to determine whether/where the pair is nesting; and 3) removing the nest deterrent device(s) from the existing nest platform following completion of construction, and outside the breeding season (i.e., between October 1 and March 1).	Yakama Nation in consultation with NMFS and engineers	Prior to construction

Mitigation Measure	Responsible Party	Time of Implementation
Before any ground disturbing activities occur, a rare plant and noxious weed survey must be conducted within 100 feet of all potentially disturbed areas. Provide results to the Yakama Nation, WDFW, USFS, and Klickitat County Noxious Weed Board.	Yakama Nation in coordination with contractor	Prior to and during construction
Follow construction timing restrictions to reduce potential disturbance of the nearby osprey nest.	Yakama Nation in coordination with contractor	During construction
Conduct a systematic rare plant survey on probable disturbed areas prior to beginning construction.	Yakama Nation in coordination with botanist, WDFW, USFS and Klickitat County and contractor	During construction
Dispose of excavated reed canary grass in a manner that prevents reestablishment	Yakama Nation in consultation with WDFW and contractor	During construction
Minimize the area of soils exposed at any one time to reduce dust that can bury native plants	Yakama Nation in consultation with WDFW and contractor	During construction
Use flagging and fencing to protect oak trees adjacent to the ladder footprint that are to be retained.	Yakama Nation in consultation with WDFW and contractor	During construction
Provide temporary revegetation if construction activity takes place in two seasons, as proposed.	Yakama Nation in consultation with WDFW and contractor	During construction
Avoid disposing excavated materials or other debris in high flow channel.	Yakama Nation in consultation with WDFW and contractor	During construction
Place excavated materials in disposal area in a manner that matches existing contour.	Yakama Nation in consultation with WDFW and contractor	During construction
Stockpile felled trees on site.	Yakama Nation in consultation with WDFW and contractor	During construction
Consult with WDFW and Yakama Nation to identify appropriate revegetation species, using within-watershed sources of seeds or live plant material wherever possible	Yakama Nation in coordination with botanist, WDFW, USFS and Klickitat County and contractor	After construction
In developing a revegetation plan, emphasize replanting Oregon white oak and ponderosa pine to replace those lost or disturbed during construction.	Yakama Nation in coordination with botanist	After construction
Use certified weed-free seed mixes and mulches.	Yakama Nation in coordination with botanist	After construction
Use natural tackifiers if necessary to reduce wind removal of loose mulch.	Yakama Nation in coordination with botanist	After construction
Develop standards and methods and a monitoring schedule for measuring the success of revegetation and identify measures to be implemented if standards are not met, including measures for controlling noxious weeds.	Yakama Nation in coordination with botanist	After construction
Develop a schedule for monitoring and maintenance of revegetated areas.	Yakama Nation in coordination with botanist	After construction

Mitigation Measure	Responsible Party	Time of Implementation
Plant Oregon white oak and ponderosa pine at a 5:1 ratio to replace those lost or disturbed during construction, using local stock (e.g., Milestone Nursery in Lyle or Yakama Tribal nursery), and monitor and maintain for 3 years following construction.	Yakama Nation in coordination with botanist	After construction
When all rock has been deposited at the spoil disposal area, place weed-free soil or sand in the crevices to facilitate establishment of grasses and forbs that are common in the adjacent boulder field.	Yakama Nation in coordination with botanist	After construction
If pre-construction rare plant surveys indicate the presence of rare species within the work area, consult with the Yakama Nation, WDFW, and USFS to identify and implement appropriate protective measures (e.g., flagging, temporary fencing, placement of boulders around rare plant populations, or relocation).	Yakama Nation in consultation with WDFW and contractor	After construction
If weeds are documented and treated, monitor treatment effectiveness for 3 years following construction, and re-treat as needed, consistent with the Revegetation Plan (see below).	Yakama Nation in consultation with WDFW and contractor	After construction
If extensive weed populations are documented, work should proceed from “clean” areas into weedy areas, if possible.	Yakama Nation in consultation with WDFW and contractor	After construction
Wash all equipment entering the work area to minimize the risk of transporting weed seeds and propagules.	Yakama Nation in consultation with WDFW and contractor	After construction
Wildlife Protection Measures		
Maintain clean work areas with proper litter control and sanitation in order to prevent wildlife attraction.	Yakama Nation in coordination with engineer	Prior to construction
Dispose human refuse in containers that can be sealed and protected from wildlife.	Yakama Nation in consultation with NMFS and engineers	Prior to construction
Conduct a western gray squirrel nest survey in suitable habitat within 400 feet of any areas that will be disturbed by construction; if nesting is documented, consult with the Yakama Nation and WDFW to identify and implement appropriate protection measures.	Yakama Nation in coordination with contractor	Prior to construction
Wetlands and Floodplains Protection Measures		
Limit the profile of instream structures to affect the least surface area within the floodplain.	Yakama Nation in coordination with USFS and contractor	During design and construction
Allow unimpeded flow of water through the Klickitat River channel.	Yakama Nation in coordination with contractor	During construction and operation
Cultural Resource Protection Measures		
Retain a qualified cultural resources specialist to monitor the site during ground disturbing activities to ensure that tribal members have access to the area, examine newly disturbed soils, and inspect work sites for potential cultural resource materials.	Yakama Nation	During construction
Limit construction access to existing and improved road grades to the greatest extent possible.	Yakama Nation in coordination with contractor	During construction
Exercise extreme caution near interment areas and advise construction workers to respect these areas.	Yakama Nation in coordination with contractor	During construction

Mitigation Measure	Responsible Party	Time of Implementation
Add crushed rock to the Lyle Falls access road to provide a more stable surface for existing users and construction vehicles and to protect Native American interment area.	Yakama Nation in coordination with contractor	Prior to construction
Preclude use of the historic railroad corridor for construction or operation access.	Yakama Nation in coordination with contractor	During construction and operation
Coordinate with those who traditionally fish adjacent to the existing ladder. Identify construction activities that could present potentially dangerous settings for fishing, and provide the timing and extent of disruption to those fishers.	Yakama Nation in consultation with tribal members	Prior to and during construction
Vehicular use of the Klickitat Trail is specifically forbidden under Washington State Parks and Recreation Commission and USFS management regulations.	Yakama Nation in coordination with engineer and contractor	Prior to and during construction
Air Quality, Noise, Human Health, and Public Safety Protection Measures		
Apply dust abatement treatments to the unpaved roadway accessing the project site.	Yakama Nation in coordination with contractor	During construction
Apply abatement measures to prevent the generation of wind-borne dust if soils are stockpiled as discussed in the DEIS.	Yakama Nation in coordination with contractor	During construction
Use blasting mats, sand or crushed rock to cover excavation sites during blasting activities to reduce the generation of sound and contain the dispersion of rock, soil, and fugitive dust.	Yakama Nation in coordination with contractor	During construction
Exclude all unauthorized personnel from entry at active worksites including excavation, spoil disposal and construction.	Yakama Nation in coordination with contractor	During construction
Provide portable restrooms and debris collection during construction.	Yakama Nation in coordination with contractor	During construction
Post signs on the Klickitat Trail throughout construction to warn users of vehicle crossings where the trail and access road intersect as well as at adjacent trailheads at Fisher Hill and Pitt.	Yakama Nation in coordination with contractor	During construction
Coordination will be undertaken with those that traditionally fish adjacent to the existing ladder. Construction activities that could present potentially dangerous settings for fishing will be identified, and the timing and extent of disruption will be presented to those fishermen.	Yakama Nation in consultation with NMFS and USFWS and coordination with engineer and construction contractor	Prior to and during construction
Post signs upstream of the project area on the Klickitat River to inform kayakers of construction. Develop an outreach plan in coordination with the USFS to inform this user group of construction activities.	Yakama Nation in coordination with engineer contractor and USFS	Prior to and during construction
Require the contractor to follow OSHA safety regulations for blasting. These regulations require displaying signage warning the public about the blasting zone, using loud warning signals to indicate the commencement of blasting, and stationing of flagmen on public routes immediately adjacent to the blast zone during blasting operations to prevent accidental intrusion of the public into the blast zone.	Yakama Nation in coordination with contractor	During construction
Retain the non-functioning attraction flow pipeline on the existing ladder.	Yakama Nation in coordination with engineer and contractor	During construction

Mitigation Measure	Responsible Party	Time of Implementation
Install safety ladders to access the fish sorting area within the fishway structure.	Yakama Nation in coordination with engineer and contractor	During construction
Aesthetic Protection Measures		
Specify the new equipment storage building be brown with a dark, non-reflective roof to reduce the visual contrast.	Yakama Nation in coordination with engineers	During design
Direct motion sensor-activated exterior lighting for the new building to achieve security objectives while limiting stray ambient light.	Yakama Nation	During design
Use a color additive in the concrete placed on the surface of the new fish transportation channel and fishway exit/water supply intake to reduce visual contrast with the adjacent native rock.	Yakama Nation in coordination with engineer and contractor	During construction
Minimize impacts to the aesthetic qualities by using native basalt boulders where needed for structural protection.	Yakama Nation in consultation with WDFW and contractor	During construction
Paint the existing auxiliary water supply pipeline a dark color to match the adjacent concrete.	Yakama Nation in coordination with contractor	During construction
Implement a vegetation protection plan to reduce potential construction damage to vegetation.	Yakama Nation in coordination with contractor	During construction
Develop a landscape management plan to reduce the visual contrast of the equipment storage building from the Klickitat Trail and the State Highway 142 overlook.	Yakama Nation in consultation with engineers and USFS	Prior to construction
Place weed-free sand or soil in crevasses of the excavated rock at the soil disposal site adjacent to the Klickitat Trail to facilitate revegetation using within-watershed sources of seeds.	Yakama Nation in coordination with contractor	During construction
Shape the rock disposal pile to appear as natural as possible. Retain and place larger rock across the top of the pile. Final pile configuration shall be approved by the USFS and WDFW.	Yakama Nation in coordination with USFS, WDFW and construction contractor	During construction
Land Use, Transportation, and Recreation Protection Measures		
Construct a turn-out along the access road to improve safety for existing road users and to reduce conflicts with construction vehicles.	Yakama Nation in coordination with engineer and contractor	Prior to construction
Clear vegetation along access road to improve sight lines and allow safe passage of vehicles in opposite directions.	Yakama Nation in coordination with contractor	Prior to construction
Install safety signage at the intersection of the Klickitat Trail and the access road as well as at nearby trail access points at Fisher Hill and Pitt to reduce conflicts between trail users and construction traffic.	Yakama Nation in coordination with contractor	Prior to construction
Use flaggers as needed at the intersection of the Klickitat Trail and the access road on days when blasting will occur. Also post warnings on the river bank upstream of the work area cautioning boaters of construction. Outreach to boaters before construction begins. If necessary, position a flagger upstream prior to blasting.	Yakama Nation in coordination with USFS, engineer and contractor	During construction
Prohibit any use of the Klickitat Trail for vehicular access during construction; include the stipulation in the construction documents.	Yakama Nation in coordination with contractor	Prior to and during construction