Mitigation Action Plan
For
Crooked River Valley Rehabilitation Project

Mitigation Measures[1]	Time of Implementation
Soil, Water Quality, and Fish Habitat	
• Complete ground-disturbing activities during low-flow conditions. Adjust instream work dates site-specifically through coordination with the Central Idaho Level 1 ESA Team [U.S. Department of Interior, Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM); National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NMFS), U.S. Department of Agriculture, Forest Service (USDA Forest Service) and other agencies]. Follow all conservation measures outlined in the NMFS and USFWS Biological Opinions (Forests' Final ROD, Appendix C).	Prior to and during construction
• Thoroughly wash and inspect all equipment used in stream restoration activities before it enters the Nez Perce – Clearwater National Forests to help prevent the introduction of chemicals to the site. Keep all equipment in a well-maintained condition to minimize the likelihood of a fluid leak.	Prior to and during construction
• Stage all construction equipment in a location and manner to minimize soil and water pollution.	During construction
• Require a Spill Prevention, Control, and Containment Plan approved by the Forest Contracting Officer's Technical Representative for handling and storage of petroleum products. Keep any storage of petroleum products in excess of 200 gallons within constructed containment structures that have an impervious liner with a capacity equal to or larger than the storage container. Locate the containment structure at least 150 feet from all waterbodies. Before being used within 300 feet of the stream reconstruction site, inspect all heavy equipment or other machinery for hydraulic leaks or other leaks. Do not use leaking or faulty equipment. Clean equipment that has accumulations of oil, grease, or other toxic materials prior to use in these areas. Do not permit disposal of petroleum products on National Forest land.	Prior to and during construction
• Fuel and lubricate equipment at least 150 feet from all waterbodies. Service and refuel in a manner that avoids spills and overfills.	During construction
• Require a Storm Water Pollution Prevention Plan (SWPPP) and National Pollutant Discharge Elimination System (NPDES) permit, approved by the Environmental Protection Agency, prior to commencing construction activities. Ensure erosion control measures are in place before construction or staging of erodible materials begins. Follow conservation measures outlined in the SWPPP, NPDES, Army Corps of Engineers Clean Water Act Section 404 permit, and Idaho Department of Environmental Quality Clean Water Act Section 401 water quality certification.	Prior to construction

[1] The U.S. Forest Service Nez Perce-Clearwater National Forests will be responsible for the execution of all mitigation measures.

• Divert or pump river around work site. Place screens on pump intakes following NMFS fish screen criteria.	During construction
• Install silt fences, straw bales, and sand bag as needed before excavation occurs to separate the disturbed areas from waterbodies and prevent eroded soil from entering the river channel.	Prior to construction
• Stabilize any road cuts, fills, and treads with a cover of annual rye or mulch where roads would remain for more than one year.	During construction
• Grade and shape all disturbed sites to allow drainage. Seed disturbed sites as needed immediately upon completion of work in that area with certified weed-free seed. Replant any small trees excavated from the work sites in the rehabilitated disturbed areas to help stabilize the soils.	During and after construction
• Remove fish, amphibians, and mussels (referred to as fish salvage) from dewatered areas. Removal would be done to minimize potential injuries and reduce the likelihood of behavior disturbance. Ensure that a fisheries biologist is present onsite during dewatering and all salvage operations. Reduce water volume using pumping or diversion. Set up block nets to isolate areas to ensure that all species are removed. Conduct electroshocking only when a biologist with at least 100 hours of electrofishing experience is onsite to conduct or direct all activities associated with capture attempts in accordance with *Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act* (NMFS 2000) and *Best Management Practices for Pacific Lamprey* (USFWS 2010).	Prior to construction
• All water bodies, especially ponds, will be checked for amphibians prior to and during construction of any work associated with the temporary bypass channel, side channel, temporary road, floodplain, new channel, etc. All life stages of amphibians will be collected and immediately translocated to pond being retained within the downstream section of the project area. Western toads tend to lay eggs in shallow water with emergent vegetation and facing a certain exposure. Take note of the conditions surrounding the egg masses and mimic those conditions when the egg masses are translocated to the new pond. It may be possible to translocate the new egg masses immediately adjacent to the egg masses in the identified pond.	Prior to and during construction
• Sanitize, clean and inspect equipment (machines, waders, nets, etc.) of invasive aquatic organisms. Do not dump water from water trucks directly from one stream or pond to another. Disinfect/decontaminate all gear, clothing, equipment, and waders, using a 10% bleach solution prior to entering any waterbodies in the Crooked River Valley Rehabilitation project area to prevent spread of fungal pathogens. Standard disinfection protocols will be followed.	Prior to and during construction
• In some instances, disposable gloves have been shown to cause mortality when handling certain life stages of amphibians, especially tadpoles. If disposable gloves are necessary for aquatic organism salvage operations and handling of aquatic organisms in the translocation process, minimize exposure and reduce incidental mortality of amphibians to pathogens/toxins from the gloves.	Prior to and during construction

• Apply the State of Idaho Best Management Practices (BMP) and Forest Soil and Water Conservation Practices to minimize soil disturbance and runoff into waterbodies.	Prior to and during construction
• Contact appropriate utility companies to locate and move or avoid underground powerlines prior to ground-disturbing activities. Restore all utility lines upon completion of the project so that no loss of power occurs.	Prior to, during, and after construction
• Stage sanitary facilities such as chemical toilets at least 150 feet from waterbodies to prevent contamination of surface or subsurface water.	Prior to construction
• Obtain and comply with all appropriate permits prior to ground-disturbing activities (such as the National Pollutant Discharge Elimination System Permit, Stormwater Construction General Permit). Adjust mitigation or monitoring through coordination with regulatory agencies, as appropriate.	Prior to and during construction
• Build soil and plant substrate suitable for restoring vegetation within riparian areas.	During construction
• Conserve plants and active soil materials for re-use in valley and roadside reclamation and upland restoration activities.	During construction
• Secure side-slopes after construction activities using onsite materials where available, including natural mulch from residual vegetation slash, chipping/masticated material, and transplanted trees and shrubs.	After construction
• Implement procedures outlined in the *Best Management Practices for Mercury Collection from Restoration Activities in Crooked River* (Appendix E) if mercury is found during project work.	Prior to and during construction
• Conduct fish and aquatic organism salvage operations from the mainstem channel after July 15 when steelhead and Chinook salmon have emerged from redds and bull trout would not be migrating in the project area. Provide fish and aquatic organism passage at all times.	Prior to and during construction
• Halt activity during dewatering, floodplain grading, or temporary bypass channel or new channel construction, if soils act as a liquid (similar to quicksand). Reinitiate work if the condition stops.	During construction
• Keep natural soils in place onsite or stockpile them for future use.	During construction

• Operate dewatering within the construction area continuously until project construction has been completed to minimize turbidity and sedimentation. Turbid water may be pumped to the floodplain or settling ponds to keep areas dry during construction and to reduce sediment input delivery to Crooked River and the South Fork Clearwater River. Add water to the bypass channel and new channel slowly to prevent turbidity from reaching 50 Nephelometric Turbidity Units (NTUs) above background 300 feet downstream. Monitor turbidity while reintroducing water, and if turbidity levels approach 50 NTUs above background 300 feet downstream, reduce flow in channel until turbidity levels recede to 10 NTUs above background. Follow any other requirements in approved water quality permits.	During construction
• Store mulch piles to reduce combustion hazard.	Prior to and during construction
• Construct temporary bypass channel of Crooked River to pass water, fish, and aquatic organisms during construction. Construct temporary bypass channel prior to any instream or floodplain work, and use until completion of the new floodplain and stream channel (approximately two to three years). Construct a spillway on the cofferdam or headgates to spill any flows greater than the Q_{10} (Ten year return interval flow approximately1,062 cubic feet per second) into the new channel to reduce the potential for bypass channel failure at high flows. If high flows occur in the new channel, conduct fish salvage. The bypass channel will be evaluated for stability before reintroducing water and at the end of each construction season. Slowly rewater the newly constructed channel during low flow. Remove cofferdams or headgates and reshape the bypass channel into the new floodplain.	Prior to and during construction
• Ensure sands and gravels are properly mixed into the new channel to prevent losing water below the surface of the new channel. Inspect the new channel to ensure flows remain above ground. If flows are lost, add fine sediment to the new channel to seal interstitial spaces. If water loss continues, remix the substrate in the new channel with an excavator. Bentonite clay may be used to help seal the new channel if water continues to seep below the surface. Follow all measures for adding water to the new channel as outlined in the Biological Assessment – Forests' ROD, Appendix C.	During construction
• Install catchment structures to collect large woody debris moving at high flows from interfering with structures downstream of the project area (e.g. Idaho Department of Fish and Game fish intake and weir). Wood catchment structures would be anchored at the lower end of the project area in the new floodplain, incorporate large boulders and designed to withstand high stream flows greater than Q_{50} (~ 1,500 cubic feet per second).	During construction
Transportation	
• Water road surfaces, including the temporary haul road to reduce airborne dust.	During construction
• Provide maintenance on Forest Road 233 commensurate with construction-induced effects.	During construction

• Construct a temporary haul/access road through the project area to reduce potential degradation to Forest Road 233 and impacts to the public, such as traffic delays. Install crossing structures for the bypass channel in two to three locations prior to adding water to the bypass channel. Decommission haul/access road following use, but retain existing access roads for recreation.	Prior to and during construction
• Ensure that Forest Road 233 remains clear of debris and equipment during construction.	During construction
Noxious Weeds/Sensitive Plants and Wildlife	
• Implement appropriate protection measures, under the direction of the Forest native plant coordinator, if previously unknown Forest sensitive plant species are observed and activities would impact individuals or populations during implementation. Appropriate measures would vary depending upon the ecology of the species involved and nature of the activity.	Prior to and during construction
• Revegetate the project area using native and approved non-native species, as approved by the Forest native plant coordinator, immediately upon completion of the project.	During and after construction
• Apply only certified weed-free mulching material and seed. Seed inspection testing is to be completed by a certified seed laboratory against the state noxious weed lists and documentation of the test provided to the Contracting Officer's Technical Representative (COTR) or designated inspector. Mulch material must be state certified weed free.	During and after construction
• Soil, gravel, rock, and any material hauled to the project area must come from sources determined to be weed free. Sources must be approved by a COTR or designated inspector as weed free.	Prior to construction
• Monitor to detect invasive and noxious weeds following implementation. Treat identified weed infestations following the Nez Perce National Forest Noxious Weed Environmental Assessment (EA) (USDA Forest Service 1988a), Biological Assessments (USDA Forest Service 2013b draft), and Biological Opinions for Herbicide Treatment of Invasive and Noxious Weeds on the Nez Perce National Forest (2013-2022) (NMFS and USFWS 2013 draft) when applying herbicides within 50 feet of sensitive plants to reduce potential for incidental contact of herbicides and avoid potential harmful exposure to non-target species. Adjust treatment through coordination with the Central Idaho Level 1 ESA Team.	After construction
• Provide personnel with map locations and species identification of all known sensitive amphibians and plant habitats to reduce potential harmful exposure and direct contact prior to weed treatment.	After construction
• Avoid directly spraying chemicals on any terrestrial or aquatic organism other than invasive plants to reduce potential for incidental contact of herbicides and avoid potential harmful exposure to non-target species of concern.	After construction
• Wash and inspect all off-road equipment associated with the project for mud, soil, plant parts, and aquatic organisms prior to entering the Nez Perce – Clearwater National Forests. Cleaning must occur off National Forest lands.	Prior to and during construction

Minerals	
• Protect or re-establish corners of existing lode mining claims.	Prior to and during construction
• Work with the mining claimants to get a waiver and notice of intent to hold during the temporary closure of the project area.	During construction
• Work with the claimants to determine when their mining claim could be accessed.	After construction
Recreation	
• During construction, place into effect, and post, a Forest Supervisor temporary area closure that would be yearlong for the duration of the construction for the valley bottom, including designated Campgrounds. Keep Forest Road 233 open. Notify public one year in advance of closure and have information available on the Forest Service website.	Prior to and during construction
• Retain dispersed recreation access points in the Crooked River valley.	During construction
• Retain and protect Campgrounds 3 and 4 for the long term while using them short term for construction for stockpiling or closure for public safety.	During construction
Cultural Resources	
• Contact the Nez Perce – Clearwater National Forests if human remains or materials subject to cultural patrimony (as defined in the Native American Graves and Repatriation Act) are encountered.	During construction
• Stop work and notify the Forest Service archeologist (36 CFR 800.13b) if any American Indian–related cultural resource materials, sites, or artifacts are discovered during project implementation.	During construction
• Retain a representative sample of dredge piles for public interpretation.	Prior to and during construction
• Construct a three-panel educational kiosk in the project area to inform the public of the history of the Crooked River Valley, following relevant laws and Forest Service direction for accessibility.	After construction
• Follow guidance and conduct any monitoring, documentation, or other measures directed by Idaho State Historical Preservation Office or the National Trust for Historic Preservation.	Prior to, during, and after construction

• Photograph, document, and map historic dredge piles that are proposed for removal.	Prior to construction
• Record the historic Gnome village (see Final EIS page 3-125 for description of village).	Prior to construction
• Perform a social business history related to the economic contribution historic dredge mining operations made to the local central Idaho economy.	Prior to construction