



**US Army Corps  
of Engineers** ®  
Portland District

## **Draft Environmental Assessment**

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# **Wyeth Treaty Fishing Access Site Hood River County, Oregon**



Draft October 7, 2009

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## **ABBREVIATIONS AND ACRONYMS**

BA	Biological Assessment
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
CRM	Columbia River mile
cy	cubic yard(s)
DPS	Distinct Population Segment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESU	Evolutionarily Significant Unit
FONSI	Finding of No Significant Impact
FR	Federal Register
MSE	mechanically stabilized earth
NAVD88	North American Vertical Datum of 1988
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	normal operating pool
ODEQ	Oregon Department of Environmental Quality
OSFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OPRD	Oregon Parks and Recreation Department
SHPO	State Historic Preservation Office
UPRR	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

## **1. INTRODUCTION**

This draft Environmental Assessment (EA) evaluates the environmental effects for development of the Wyeth treaty fishing access site as part of the Columbia River Treaty Fishing Access Sites program. The Wyeth treaty fishing site is an authorized project for the mitigation of lost Native American treaty fishing access resulting from construction of Bonneville Dam on the Columbia River (river mile 146). The project will reestablish traditional Columbia River fishing activities to four treaty tribes. The Wyeth site will be the 29th site that the U.S. Army Corps of Engineers (Corps) has developed to reestablish traditional treaty fishing access on the Columbia River.

### **1.1. Purpose and Need for Action**

The purpose of the proposed action is to restore traditional Native American fishing access on the Columbia River for four treaty tribes: the Nez Perce, the Confederated Tribes of the Umatilla Indian Reservation, The Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakima Indian Nation. In 1988, the Corps was federally mandated and funded under Public Law 100-581, Title IV, to acquire, develop, rehabilitate, improve and/or transfer lands to be used for traditional fishing activities by these treaty tribes. As such, the proposed Wyeth project will be constructed and completed by the Corps with ownership and management subsequently turned over to the Department of Interior, Bureau of Indian Affairs.

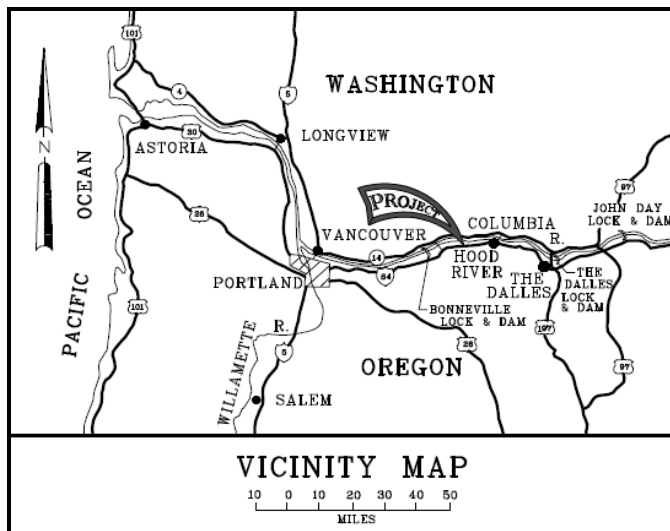
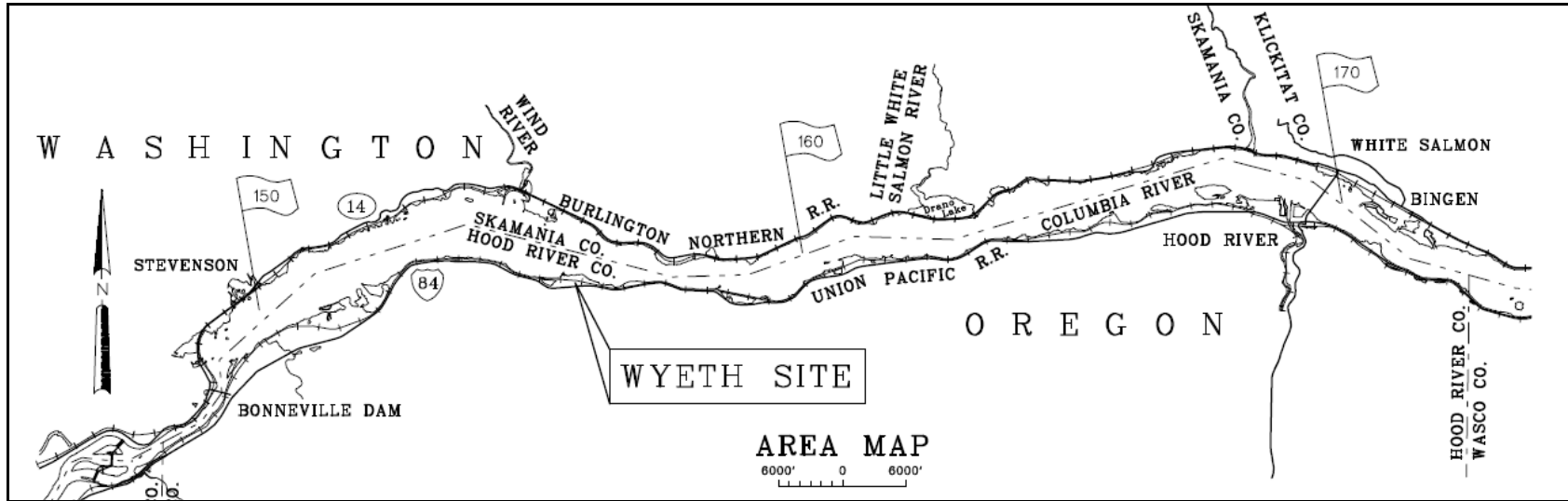
### **1.2. Project Area Description**

The proposed Wyeth site is located north of Interstate 84 along the south shore of the Columbia River in Hood River County, Oregon, about 6 miles east of Cascade Locks and about 10 miles west of Hood River (Figure 1). The project area is on an upstream, inside bend of the Bonneville pool at approximate river mile 156 in an alluvial fan created by Gorton and Harphan creeks. Bonneville pool height is regulated by the dams on the Columbia River. The proposed site is located on property bordered by the Union Pacific Railroad (UPRR) tracks to the south and the Columbia River to the north. Land for a possible future Oregon state park is adjacent to the site on the east, and the west end of the site terminates at a railroad trestle near the Columbia River. The area is moderately forested with criss-crossing railroad maintenance access roads and an old railroad bed.

The southern portion of the site between the freeway and the railroad is relatively flat and much of the surface is compacted soil that is covered with gravel with little to no vegetation. The stormwater runoff from the interstate highway is directed to a ditch in this area. Three large stockpiles of rock that were removed from the Bonneville Lock excavation are located in this area. The northern portion of the site gently slopes toward the Columbia River at an approximate 5% grade. This area is covered with vegetation ranging from grass and low growing brush to deciduous and coniferous trees with trunks in excess of 24 inches in diameter.

Historic use of the property includes a railroad tie treatment plant just to the east of the proposed project that was used in the late 1800s and early 1900s. The area has been subject to realignment of the UPRR railroad tracks and the expansion of two-lane Highway 30 to the four-lane Interstate Highway 84 corridor.

Figure 1. Location of Wyeth Treaty Fishing Access Site



## 2. ALTERNATIVES

### 2.1. Screening of Alternatives

Various alternatives for overall project siting and location selection for the Columbia River Treaty Fishing Access Sites Program can be found in earlier Corps reports including the 1995 Phase 1 and Phase 2 evaluation reports (*Columbia River Treaty Fishing Access Sites, Final Phase Two Evaluation Report and Finding of No Significant Impact/Environmental Assessment* available at <http://www.nwp.usace.army.mil/Pm/Projects/crtfas/documents.asp> or at the Portland District). The Congressional Authorization that specifically mandated the construction of the treaty fishing sites had criteria for selection of the sites. Those criteria included but were not limited to vehicle and river accessibility; critical wildlife habitat; site development potential; slope stability; land ownership and willing sellers; topography; railroad crossings; shoreline conditions; acreage available; level of development required to meet tribal needs; disposition of public use at the site; cost effectiveness; operational considerations; environmental protection, mitigation, and conservation; and cultural resource preservation. Using those selection criteria, a search was done for property in the Bonneville pool that would meet all of the criteria. Selection was quickly narrowed down to two sites, the Wyeth site and the Dallesport site. Both sites will be developed into treaty fishing sites. When complete, these two new sites along with those already constructed, will complete the Corps' obligation to the treaty tribes for fishing access. The Dallesport site will be planned, designed, and constructed as a completely separate action from the Wyeth site development proposal evaluated in this EA.

The proposed Wyeth site is located on property bordered by UPRR railroad tracks to the south and the Columbia River to the north. Land for a future Oregon state park is adjacent to the site on the east, and the west end of the site terminates at a railroad trestle near the Columbia River. The project elements for the proposed Wyeth site will provide a level of service similar to other Columbia River treaty fishing access sites. For the Wyeth proposal, various alternatives were considered for each project element and resulted in the development of a proposed action, as summarized below. Additional information can be found in the HDR Engineering report, *Wyeth Treaty Fishing Access Site Alternatives Analysis* (July 2009).

#### 2.1.1. Bridge/Railroad Crossing

The Union Pacific Railroad (UPRR) made it clear during sales negotiations for the land that they would not accept an at-grade crossing from Interstate Highway 84 to the developed campground and boat ramp. For that reason, and in consideration of safety concerns, only grade-separated crossing designs were considered. Several alternatives were considered in establishing the structure type and configuration of the railroad crossing bridge over the UPRR tracks. Bridge location and orientation were selected such that the proposed bridge will avoid the area of the former railroad tie treating plant. The project design is further constrained by the railroad crossing vertical clearance requirements. Three abutment and five superstructure designs were considered; neither the range of choices nor the selection of the preferred bridge alternative resulted in significant differences in impacts to wetlands, waters, or species listed under the Endangered Species Act (ESA) between the choices considered.

The selected bridge alternative will include four variable-depth plate girders with a composite cast-in-place concrete deck, having a bearing-to-bearing span of 145 feet. The girders will be set atop cast-in-place concrete abutments having spread footings. The abutments will be constructed on top of mechanically stabilized earth (MSE) retaining walls. The alignment will be perpendicular to the UPRR tracks below and sited to avoid any encroachment on the former railroad tie treating plant clean-up site to the east of the north end of the bridge.

### **2.1.2. Fishing Access Site Layout**

Siting for the proposed access road and approach fills was constrained by several factors: (1) county, state, and federal road design requirements; (2) location of the existing railroad tracks; (3) amount of acreage at the site; and (4) location of the existing Interstate 84 interchange ramps. In order to construct appropriate grade transitions, three approach alternatives including MSE walls, sloped fills, or some combination of the two were considered for the crossing and roadway alignment. The entrance of the campground will generally follow the old railroad bed alignment to minimize additional disturbance and impacts to vegetation. The selection of the fill slope and access alternative did not have significantly different impacts to wetlands, waters, or ESA-listed species when compared to the other two alternatives, and will avoid the area of the former railroad tie treating plant. The access road will be sited along the old railroad bed where soils are already compacted and the vegetation is primarily non-native species.

The campsite alternatives considered were: (1) drive-through parking and separated campsite facilities located on a one-way drive; (2) a circular drive with six campsites along the entrance; and (3) drive through parking with larger vegetated islands. Facility capacity was estimated from surveys of existing treaty fishing sites that were conducted in the 1990s. Although the separated campsites require more new impervious surface, they allow campers far more separation, privacy, and safety from parking and boat ramp traffic and activity. Design alternatives preserve vegetation within the islands. Siting of the campsites on the south side of the railroad tracks was considered and rejected as a reasonable alternative. The intent of the authorization is to return the tribes to the river where historically they have camped and fished. To remove the campground from the riverside to the area south of the railroad tracks would not meet the intent of the authorization.

### **2.1.3. Boat Launch Facility**

The boat launch facility will consist of four primary components: dock, launch ramp, breakwaters, and a dredged boat basin. The primary function of the overall facility is to allow safe launching and retrieval of tribal recreational and fishing vessels for the range of water levels and wave conditions on the Columbia River.

Because of water level fluctuations in Bonneville pool, a floating dock must be used to facilitate boarding and exiting vessels at different water levels. Floating docks are commonly installed for boat launches and small craft harbor applications in the area. The dock is not intended to serve as overnight moorage for vessels and no dockside services will be provided. A typical single-lane reinforced concrete launch ramp will be used to accommodate launching and retrieval of fishing vessels with trailers. The proposed location of the dock and ramp was selected based on existing water depth, near-shore bathymetry, and access to the water from the railroad crossing. All locations west of the selected site were too shallow for launching boats

and would require significantly more dredging to provide adequate water depth. Areas to the east were also shallow or contained offshore bathymetry that included shallow sand bars which would be dangerous for boaters approaching the dock from the river channel. The proposed site was selected because deep water extends closer to the shore, requiring less dredging. To facilitate navigation from the launch ramp to navigable water in the Columbia River channel, dredging of a longer, larger channel would be required. The possibility of constructing the boat launch on a backwater area immediately west of the proposed site was considered early in the site selection process. This location would have allowed for a boat ramp with no need for the breakwaters structures to provide wave attenuation. However, the train trestle under which boats would have to pass is not adequate for anything but very small fishing boats. The UPRR was not willing to allow construction of a larger railroad trestle. Also, construction of the boat ramp in the backwater area would have impacted wetlands and essential fish habitat (EFH).

Breakwaters will be required to reduce wave height reaching the dock and ramp to appropriate levels for launching and retrieval of boats during typical river conditions. The breakwaters would also provide wave protection for the dock and ramp. The breakwaters represent a potential barrier to out-migrating juvenile salmonids moving along shore in shallow water. Fixed and floating breakwaters would redirect currents, create eddies, and potentially provide habitat for predators of ESA-listed species. The footprint of the breakwaters would also potentially directly impact essential fish habitat by changing the substrate from sandy gravel to rock and riprap. Minimization of negative impacts and incorporation of habitat features was considered in selecting a breakwater alternative.

Four breakwater alternatives were investigated: floating breakwater, bin-wall channel, shore-connected rubble mound breakwater, and a harbor-of-refuge concept with detached (from the shore) breakwaters. The floating breakwater and bin-wall channel were not selected based on cost and constructability, respectively. Floating breakwaters were used at the Celilo treaty fishing access site when it was first developed. The wave action at the site caused the moorings to fail and the floating structures were subsequently replaced with rubble mound breakwaters. The shore-connected rubble mound breakwater was not selected because it would provide a barrier to out-migrating juvenile salmonids moving along shore in shallow water. The harbor of refuge/detached breakwaters alternative was selected because it would provide greater safety for boaters, provide a larger area of tranquility at and near the dock, and was greatly favored by local stakeholders. This alternative would also accommodate the passage of juvenile salmonids along the shoreline by providing passage through the gaps in the breakwaters in shallow water.

## **2.2. Proposed Action**

The project elements selected for the proposed action are shown in Figure 2 and are described in more detail in the following sections. A summary of the measures incorporated to avoid and/or minimize environmental impacts is provided in Section 2.2.5.

### **2.2.1. Bridge/Railroad Crossing**

The bridge will include four variable-depth plate girders with a composite cast-in-place concrete deck, having a bearing-to-bearing span of 145 feet. The girders will be set atop cast-in-place concrete abutments having spread footings. The abutments will be constructed on top of MSE retaining walls. The alignment will be perpendicular to the UPRR tracks below. This

shorter bridge design has fewer impacts to native vegetation and trees on the north side of the bridge. Although the Wyeth project is specifically exempt from the aesthetic guidelines for the Columbia River Gorge National Scenic Area, aesthetic treatments will be incorporated into the bridge and wall finishes. The bridge design will have the following features:

- 145-foot span.
- Deck width of 35 feet, 1 inch to accommodate two 12-foot lanes and two 4-foot shoulders (plus concrete rails).
- Four steel plate girders having variable depths.
- Composite cast-in-place concrete deck.
- Short-seat abutments on spread footings.
- MSE retaining walls supporting the abutments with 45° return walls.
- Oregon Department of Transportation (ODOT) standard 20-foot end panels.
- Concrete rails of 3 feet, 6 inches on the bridge and end panels.
- Protective screen to a height of no less than 10 feet from the top of the bridge deck.
- Vertical clearance beneath the bridge of at least 23 feet, 6 inches from the top of the highest existing rail.
- Avoid stormwater discharge into the nearby unnamed ditch/tributary of Harphan Creek

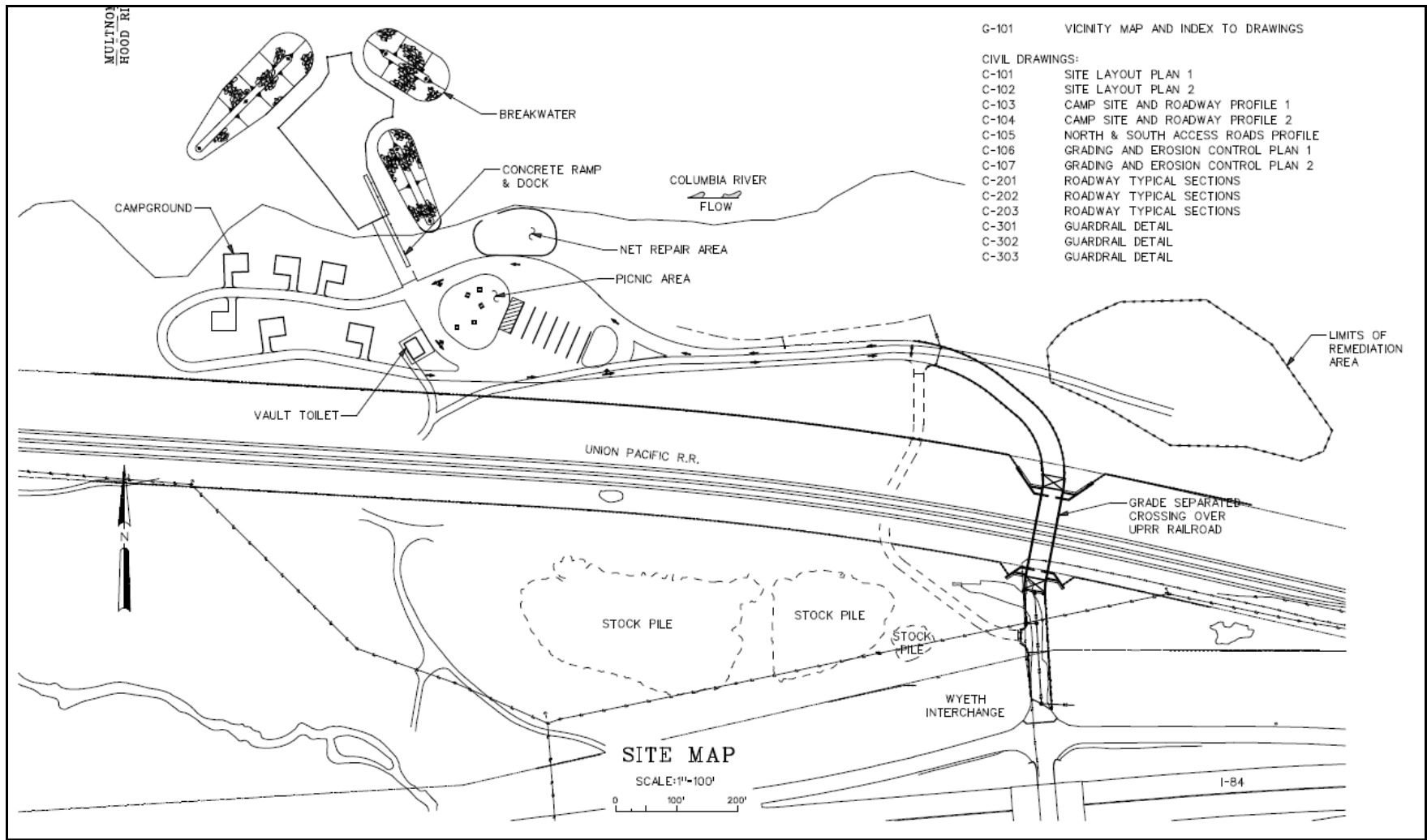
### **2.2.2. Fishing Access Site Layout**

Access to the site will be provided by an extension of the existing Wyeth Road that currently terminates just north of Interstate 84. The road will be extended from a point near the Interstate 84 ramps, cross the UPRR railroad tracks using a new bridge structure, and follow a new entrance road to the fishing access site. The entrance road will provide access to a future state park east of the fishing access site. The entrance road will extend to the proposed fishing access site, where a parking area will be provided to allow parking for vehicles with boat trailers. Campsites will be constructed for use by tribal members.

The campground will accommodate six camping areas and parking for six vehicles with boat trailers. A vault toilet, fish cleaning station, fishing net repair area, and picnic tables will be provided for users of the facility. The campground is located west of the boat ramp and parking lot. This design reduces the traffic through the campground, providing increased safety and security for the campers. The road alignment and campsite locations have been sited to reduce impacts to trees. The sanitary vault toilet has been located in a central location for both boaters and campers. A landscaped island in this vicinity protects existing trees and will have about 3-4 picnic tables. A fishing net repair area is located adjacent to the boat ramp and is near the parking lot for easy vehicle and boat access.

The parking lot was designed to slope from south to north to follow the direction of the existing grades. The south end of the parking lot will be lowered to provide flatter slopes across the lot. This requires a small cut slope along the property line between the fishing access site and the railroad.

Figure 2. Proposed Action for the Wyeth Treaty Fishing Access Site



In order to minimize water quality impacts, stormwater treatment will be provided for all impervious surfaces. Biofiltration swales will be used for treating runoff from Wyeth Road, the main entrance road, and the boat trailer parking lot. Vegetated filter strips will be used for the campground road. The biofiltration swale will typically be constructed in locations of drainage ditches and will provide both water quality treatment and conveyance of the runoff. The vegetated filter strips will match the grade of the north campground road and will eliminate the need for a swale/ditch in areas of campground activity. Both the biofiltration swales and vegetated filter strips will require minimal maintenance. Also, curbs will have periodic V-cuts to allow drainage into the swales. The parking lot will be separated from the boat ramp by a grated drain that will keep parking lot runoff from flowing directly into the Columbia River.

A fish cleaning station, supplied with potable water, will facilitate hygienic fish cleaning and processing. A single stainless steel fish cleaning station will be provided using two faucets to provide water to the station. Because of environmental restrictions, development of a groundwater well is not possible. Therefore, potable water will have to be delivered to the site by water truck. Once at the site, it will be deposited into an underground tank specifically designed for potable water (10,000-gallon capacity minimum). Water will not be provided to the vault toilets. Disinfection of the water will be required due to contamination potential during delivery and also to maintain water quality during extended periods of low use. Water from the fish cleaning station will be conveyed to a second underground tank designed to store water after use (10,000-gallon capacity minimum). When this second tank is nearing full, the waste in the tank will be pumped out and disposed of off site at a certified waste disposal facility.

The Wyeth site will require electrical power to serve light motor loads (water pumps, chlorination equipment, and lighting). Electric service to the site is available from Cascade Locks. A primary power line is currently located south of the site. The transmission line will be extended using underground conduit and vaults to the site. The service conduit will cross the railroad via the new bridge. A pad-mounted transformer will be installed at the site with an electric service meter.

### **2.2.3. Boat Launch Facility**

**Launch Ramp.** The launch ramp will be 115 feet long and 26 feet wide, and made of 6- to 8-inch thick pre-cast textured concrete panels below the water line. Above the water line the concrete would be cast in place. There will be a floating boarding dock on the east side of the ramp. About 1,700 cubic yards (cy) of material will need to be excavated for the launch ramp area. About 120 cy of riprap will be placed at the toe and edge of the launch ramp to protect from propeller wash and scour, and about 80 cy of bedding stone will serve as the ramp bedding material.

**Floating Dock.** The floating dock will be a maximum of 165 feet long and 8 feet wide with articulated concrete floats secured by five to six 16-inch steel piles that will be installed by vibratory hammer, if possible. However, because of the recommended embedment depth of 35 feet, it is possible that pile driving will be necessary. If so, the contractor will be required to use a bubble curtain or some other form of sound attenuation for acoustic protection of aquatic animals. Transition between the launch ramp and the floating dock will be provided by a 30-inch high concrete abutment at approximately 88 feet in elevation. The walking surface of the dock will be approximately 16 to 18 inches above the water surface.

**Breakwaters.** Three detached (from the shore) rubble mound breakwaters will be used for the proposed action (see Figure 2). The primary function of the breakwaters is to provide wave height less than 0.5 feet at the launch ramp during the 2-year wave event coinciding with high normal

operating pool (NOP at 78.8 feet) water surface elevation. This would allow boaters to seek refuge from the wind/wave action if weather conditions deteriorate while they are on the water and to use the boat dock and ramp to retrieve boats even in windy conditions. Because winds blow both from both the east and west along the Columbia River, breakwaters were sited on both sides of the ramp.

A 4-foot deep boat basin at depth at low NOP (elevation 74.8 feet) would provide the minimum required water depth for boaters to navigate to deeper water beyond the project site. To achieve this depth, dredging to elevation 70.8 feet is required at a minimum. Based on previous Corps experience at other treaty sites, sedimentation has not been a long-term maintenance problem. However, the breakwaters will modify flow patterns on the shallow shelf in front of the site and tend to accrete available sediments on the interior of the basin where water will be calm. In anticipation of sedimentation, advanced maintenance dredging to elevation 69.0 feet is proposed.

A CMS-Wave model was used to determine the layout and geometry of the three breakwaters. The modeling yielded the following results:

- Waves from the east are the largest for the 100-year event, while waves from the west control the 2-year design condition.
- Waves approaching from both the east and west rapidly change height and direction upon arriving at the shallow-shelf area that fronts the Wyeth site.
- Wave refraction causes the waves at the site to be lower than those in the deep channel offshore.
- Waves generally approach the proposed breakwater locations from the northwest and northeast, gradually turning towards shore over the shelf.
- Low water conditions would result in waves approaching the dock from a more northerly direction, due to wave refraction. At higher pool elevations, waves generally approach from the northeast or northwest.

The three proposed breakwaters are designed to an elevation of 85 feet at the crest. Crest width for all structures is 12 feet wide. Base width varies from 30 to 90 feet wide depending on the depth of the water. Measuring from toe to toe, Breakwater A, the eastern-most structure is 185 feet long; Breakwater B, the northern-most breakwater is 155 feet long; and Breakwater C, the western-most structure is 270 feet long. Even though these dimensions and relative structure orientations may vary slightly in the final design, it is not likely that the size will increase or that the area of impact will increase above the design as proposed. Volume of fill to construct the 3 structures is estimated to be 7,000 cy of material. Core material may be cobbles and sand dredged from the boat basin, or clean fill material from the stockpiles on the upland portion of the site. The smaller sized core materials will be covered with geotextile before armor rocks sized to withstand the wave and water currents are placed over the core to create the final structure design shape.

The breakwaters will likely be constructed from both land and water, depending on the water depth and the ability to use the onsite stockpile of stone. From the water, the breakwater core material (stone) would likely be placed using a barge-mounted excavator during high water. Armor placement would be accomplished by using a barge-mounted crane that has more precision for placement. Underwater grading may also be required, utilizing a long-reach tracked excavator.

From land, the contractor may choose to construct a temporary working surface out to the closest breakwater and place material using trucks to dump the core materials, laying a base course, and lengthening the breakwater out to deeper water. All three breakwaters could be constructed this way and as the farthest point is completed, the machinery would place final top armor starting at the

farthest point and working back toward the shore. The temporary road surface could be removed by the excavator as it retreats toward the shore, or by barge-mounted clamshell dredge or excavator in deeper areas. The volume of fill for temporary access from the shore for a land-based construction of the breakwaters is approximately 6,000 cy including fill temporarily placed between the breakwaters.

**Dredged Boat Basin.** Within the area between the breakwaters and from the boat ramp to the Columbia River channel, dredging/excavation will provide a harbor of refuge/navigation channel that is 60 feet wide near the ramp and gradually widening to a maximum of about 200 feet (from the end of the ramp, the seaward extent of dredging measures about 280 feet). Dredging/excavation are not expected to exceed depths greater than about 6 feet below low NOP level. The estimated area of the bottom of the dredge/excavation cut is 0.6 acres. About 4,500 cy of material will be dredged/excavated, which includes about 2 feet of advanced maintenance in the event of sedimentation on the leeward side of the breakwaters. A clamshell dredge and excavation with tracked equipment from a barge (at low water) are expected to be used. The material will be disposed of either in-water adjacent to the basin area so that it can function as the core of the adjacent breakwater structures, or at an upland site. The material to be dredged has been sampled and sent to a certified sediment-testing laboratory to determine the suitability of the material for in-water placement.

If used as the core of the base of the breakwater structures, the material would be covered by geotextile and then armor materials (stone) of a suitable size to withstand the wind, wave, and current action at the site. If, based on sediment test results, upland disposal is required; the material will be placed in a suitable upland disposal site outside of the project boundary.

#### **2.2.4. Timing of Construction**

The construction of the bridge over the UPRR tracks is scheduled to begin in March 2010. The remainder of the work, including the access road, campground, and in-water structures (all of which are north of the UPRR tracks), would not begin until November of 2010. All in-water work is scheduled to be conducted according to the *Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources* (ODFW 2008) which allows for in-water work from November 15 through March 15. Construction will likely continue into 2011 with all in-water work completed by about mid-March 2011. The campground access road and parking lot construction may continue beyond that date.

#### **2.2.5. Summary of Measures to Avoid and/or Minimize Impacts**

The following measures were developed during design of the proposed action to avoid and/or minimize possible impacts to fish and wildlife species and the habitats in which they reside.

##### **Project Design Measures**

- Campsites, access roads, parking lot, and other use areas/infrastructure were located to avoid loss of native trees and minimize the disturbance area to the maximum extent practicable.
- Breakwater structures were disconnected from the land to allow for improved fish passage between structures and through the boat basin.

- Breakwater structures will be engineered to meet structural specifications while minimizing adverse effects by using bioengineering and filling voids and crevices, where possible, in order to reduce piscivorous predator habitat.
- Boat launch access was reduced from two lanes to one lane in order to reduce the amount of in-water structure.
- Floating dock will fluctuate with operational pool elevations and maintain fish passage.
- Stormwater facilities will effectively treat water quantity and quality for the selected design storm and will be designed, at a minimum, to meet ODEQ best management practices.
- Over-water structures will attenuate light at a minimum 25% to reduce shade effects in-water and reduce piscivorous predator habitat.
- Existing roadways and routes will be used to access the site thereby minimizing soil disturbance and compaction.

### **General Construction Measures**

- **Preconstruction Activity, Flagging Sensitive Areas.** Before significant alteration of the project area, the project boundaries will be flagged. Sensitive resource areas including areas below ordinary high water, wetlands, and trees to be protected will be flagged and clearly marked.
- **Minimum Area and Time.** Construction activities will be confined to the minimum area necessary to complete the project, as defined by exclusion zone limits and otherwise prevent or avoid erosion and sedimentation associated with access, construction, equipment, and material staging and stockpiling.
- **In-water Work Period.** All work within the channel at and below ordinary high water pool elevations will be completed during the designated in-water work window for the Columbia River, Bonneville pool, in order to protect fish and wildlife resources (November 15 through March 15).
- **Work Area Isolation Plan, Surface Water Isolation.** A work area isolation plan will be completed for work within the wetted channel (defined as those areas at and below ordinary high water pool elevation) to isolate the work area from active Columbia River flows, if feasible.
- **Fish Passage.** Fish passage will not be provided through the project area during construction to avoid injury and harm to adult and juvenile fish.
- **Fish Capture and Release.** Before in-water work activities commence, fish will be captured and removed from the project site via seine or other approved method to minimize risk of injury.
- **Work from Top of Bank.** To the extent feasible, heavy equipment will work from the top of the bank, unless work from another location would result in less habitat disturbance.
- **Erosion, Sediment and Pollution Control Plan.** Facilities will be installed prior to any ground disturbing activity in such a manner to prevent pollution caused by surveying or construction operations and to ensure that sediment-laden water or hazardous or toxic materials do not leave the project site, enter the Columbia River, or impact aquatic and terrestrial wildlife.
- **Pile Driving/Dredging/Fill Operations.** Vibratory pile driver hammers will be used to the maximum extent feasible to reduce the likelihood of adverse impacts to fish near the work area. Confined bubble curtains (bubble curtains combined with a silt curtain) and/or other advanced devices will reduce the impact of hard strike impact pile driving operations.
- **Work during High Operational Flows.** Project construction will cease during high flow conditions that result in inundation of the project area, except for efforts to avoid or minimize resource damage.
- **Water Quality Monitoring.** Water quality monitoring will be conducted in accordance with the Section 401 Certification.

### **Site Protection and Preservation Measures**

- During site preparation, native materials such as large wood, weed-free topsoil, and channel materials will be conserved for use during site restoration.
- A tree protection plan will identify native trees greater than or equal to 6 inches in diameter that will be avoided and protected during construction.
- Trees targeted for removal will be pushed over with root wads intact to reuse for habitat restoration and improvement.
- Downed woody debris for use in habitat improvement will be stockpiled on the riverbank.
- Retain downed woody debris in the riparian area whenever possible to promote wildlife use.
- Dredge material will be disposed of either at an approved upland site or at an approved in-water disposal area for breakwater construction and/or habitat improvement.

### **Site Restoration - Invasive Species Control and Native Plant Establishment**

Site restoration will rehabilitate disturbed areas and improve or reestablish desired future site conditions, including plant coverage and community diversity. Invasive trees and shrubs will be removed from within the larger project boundary. Non-native tree species will be chipped. Revegetation using native plants will rehabilitate areas that have been temporarily disturbed due to construction and will improve landscape and vegetation composition at Wyeth riverbank area. Native plants, shrubs and trees will be planted throughout the disturbed area.

#### Native Seed

- Native seed will be applied to disturbed areas to provide immediate erosion control and provide source competition to invasive plants and aid native plant establishment.

#### Plant Establishment

- Riparian and riverbank habitat will be replanted with native grasses, shrubs, and trees including ash, cottonwood and willow. Plant selections will target wind-tolerant species typical of Columbia River Gorge riparian forest. No invasive plant species will be used.
- Areas within 6 feet of ordinary high water shall have live stake plantings; all other areas will be planted with native bare-root seedling and live cuttings to optimize plant establishment.
- In disturbed areas, trees will be planted on approximately 8-foot spacing; shrubs will be planted in clusters of three and staked with bamboo (if needed) at approximately 15-foot spacing between clusters. In addition to those areas, disturbed riparian underplantings (plants and shrubs) will target riparian areas where native mature trees currently exist.
- Coir logs, straw bales and straw logs may be used to trap sediments and provide growth medium for riparian plants.
- No surface fertilizer will be applied within 50 feet of the Columbia River.

#### **2.2.6. On-site and Off-site Habitat Improvement**

To offset possible impacts to upland, riparian, and in-water habitat, the Corps is proposing some on-site and off-site habitat improvement features that will be constructed at the time of the Wyeth treaty fishing site work. Specifics of these projects have not yet been designed, but will include such measures as adding downed trees from the site along the shoreline to create near-shore, in-water

habitat. On the shoreline, there is the potential to do some invasive species control and to revegetate the area with native plant species. Also, there is the potential for backwater habitat improvement on the western end of the Wyeth site where an old railroad bridge and the dirt-fill abutments serve to restrict water flow into and out of a wetland area. By removing the old structure and the fill material at each end, there is potential for enlarging the wetland habitat and creating a better functioning backwater habitat area. To offset any upland habitat impacts, the Corps is proposing to completely remove the rock stockpiles between the UPRR tracks and the highway and revegetate the area with a variety of native plants including grasses, herbs, shrubs, and trees.

Off-site habitat improvement sites are at or near two established in lieu treaty fishing sites in the Celilo Pool of the Columbia River above The Dalles Dam. At the Celilo site, there is opportunity to improve the nearshore riverbank habitat by placing large woody debris to increase habitat diversity. Another component of that habitat improvement would require invasive species control and native plant establishment with emphasis on establishing intermediate to mature shrub and tree layers.

The last habitat improvement site is near the Rufus treaty fishing site. There the Corps is proposing to do much the same as with the Celilo site by improving the nearshore and riparian habitat by placing large woody debris along the shore. However, there is another opportunity to offset some in-water impacts by taking an cobble island area that is currently too high to be inundated regularly and grading it down to an elevation that would be inundated routinely (or possibly constantly) to provide shallow in-water habitat attractive to rearing juveniles and benthic organisms.

### **2.3. No Action Alternative**

Given the federal agreements and mandate to provide treaty fishing access as mitigation from the inundation of traditional fishing sites in the Bonneville pool, the no action alternative was not selected. Leaving the Wyeth site in its current condition would make the fulfillment of obligations to acquire and develop the mandated number of treaty fishing sites in the Bonneville Pool more difficult by eliminating a viable option, and possibly increase the length of time and costs to complete the Columbia River Treaty Fishing Access Sites Program.

### 3. AFFECTED ENVIRONMENT

#### 3.1. Physical Characteristics

##### 3.1.1. Geology and Soils

The Wyeth site is located on an alluvium terrace that borders the Columbia River, which consists of deposits of sand, gravel and boulders. The site is fronted by a wide, shallow shelf that extends from the shoreline out to approximately elevation 69.0 feet, prior to dropping into the main Columbia River channel. The width of the shelf varies from about 300 to 500 feet. Columbia River basalt is beneath the alluvium and consists of a series of basaltic lava flows. The Eagle Creek formation underlies the basalt and consists of volcanic mudflows, pyroclastic deposits, and andesite lava flows.

Ten borings were drilled at the Wyeth site from April 20-29, 2009. Materials encountered were generally gravelly with a matrix of varying amounts of silts and sands. The density of the materials increased with depth. The top 10 feet of material near the original valley slope appeared to represent a finer grained colluvial/alluvial soil horizon. Materials further to the north contained more gravel and increased in density. The more gravelly soil appeared to extend beyond the northern limits of the project area. Within the pool, these materials were covered with a thin mantle of post-Bonneville pool sediments.

##### 3.1.2. Hydrology

Columbia River (Bonneville pool) levels vary as regulated at Bonneville Dam. No water level gages exist at or near the project site. Water levels measured during the project survey indicate that the water level at the site was approximately the same as the water level reported at the Bonneville Dam forebay during normal flows. Based on review of water levels at Bonneville Dam since 1988, water levels exceed high NOP of 78.8 feet approximately 15% of the time. Water levels at the Bonneville forebay rarely exceed 79.8 feet (less than 1%), due to operations of the spillway and powerhouse. Low water levels are limited to about elevation 74.0 feet. Water levels fall below elevation of low NOP at 74.8 feet less than 1% of the time. During high flow events, water levels at the site will exceed those measured at the Bonneville forebay. Modeling was used to provide an approximate water surface elevation at the Wyeth site for high flow rates and associated return periods (Table 1).

**Table 1. Extreme Water Levels at the Wyeth Site**

Annual Probability of Exceedance	Return Period (year)	Flow [cubic feet per second (cfs)]	Approximate Water Surface Elevation (feet NAVD88)*
0.5	2	360,000	83.0
0.20	5	461,000	84.5
0.10	10	515,000	85.5
0.04	25	573,000	86.6
0.02	50	635,000	87.8
0.01	100	680,000	88.7

\* The values for low probability events are likely conservative.  
 NAVD88 = North American Vertical Datum of 1988.

Winds in the Columbia River Gorge are strong and persistent. Predominant wind waves are from the west, but winds frequently reverse and produce waves from the east.

The upland area of the Wyeth site has a highly altered hydrology. Historic photographs showing the past disturbance to the site are attached to this EA. Photos from 1930, 1935, and 1957 show Gorton Creek as a culvert/straight channel that was diverted from its natural bed and routed directly into the Columbia River. By 1968, the straight channel had been diverted to the south and west so that the creek outlet was no longer directly into the Columbia River, but into a backwater area south of the railroad.

### **3.1.3. Floodplains**

The Bonneville pool is a highly regulated reservoir with flood protection being one of the primary objectives for operating Bonneville Dam. Normal pool fluctuations range from about elevation 74.8 to 79.8 feet with extreme high flows taking the pool elevation at the Bonneville forebay to an elevation greater than 80 feet less than 1% of the time. At these extreme flows, water levels at the site would be expected to exceed those measured at the Bonneville forebay only slightly. These rare high-water events would rarely, if ever, drive the pool elevation into the floodplain above 82 feet.

### **3.1.4. Sediment Quality**

Three sediment samples were collected in May 2009 for engineering purposes to determine the substrate to be dredged and the structural base for the breakwater construction. Those sediment samples were examined for grain size only and found to be primarily cobbles in two of the 3 samples. Additional sediment samples were collected on September 22, 2009 in the proposed boat basin area so that sediment chemistry could be conducted to determine the suitability of the dredged material for in-water placement. Of the 0.6-acre area to be dredged, it is estimated that most of the area and material to be dredged is cobble-sized stones. However, the outer 30 to 50 feet of sediment that will be dredged is a silty sand material with cobbles. The volume of this finer-grained material is estimated to be only 1/4 to 1/3 of the total volume of material to be dredged. Laboratory results from the testing of this material were not available in time for publication with this draft EA. However, the results should be available by mid-October 2009 and will be included in the final version of the EA. Anyone wishing to review the sediment results will find the data and the Wyeth Treaty Fishing Sediment Sampling Report on the Corps' website after October 23, 2009.

### **3.1.5. Hazardous Waste**

The former Wyeth tie-treating plant was located on Interstate 84 at milepost 51 on the south shore of the Columbia River. The site was used for treating railroad ties from the 1880s to 1922. Creosote and an oil-zinc chloride mixture were used as preservative solutions. The site has been vacant since 1922 with the exception of the UPRR mainline and siding tracks, as well as remaining concrete structures from the tie-treating operation. The site is fan shaped and sloped north toward the Columbia River, which is about 300 feet north of the site. Soils consist of alluvium with sand, gravel, and basaltic rock fragments predominating. Groundwater is 15-20 feet below ground surface. There is no current use of groundwater in the site vicinity.

In 1997, ODOT conducted a site assessment to determine whether chemicals of concern were present in soil and groundwater at the site. It was determined that shallow soils contained creosote above risk-based concentrations for protection of human health, and that surface soils contain zinc above

risk-based concentrations for ecological receptors. Groundwater at the site contained creosote and zinc above risk-based concentrations for protection of human health. Following the 1997 investigations, concrete structures at the site were removed, and shallow soils containing creosote were removed and disposed of off-site. The excavated areas were backfilled with clean soil. Soils at the site containing zinc above ecological risk-based concentrations were capped with a soil cap.

In 2004, the Oregon Department of Environmental Quality (ODEQ) issued a No Further Action Letter to the UPRR that required the completion of an Easement and Equitable Servitude Agreement. This agreement is now recorded as a deed restriction on the property and restricts groundwater use and any disturbance of the backfilled and capped areas without ODEQ approval.

### 3.2. Vegetation

Dominant riparian vegetation along the Columbia River includes species such as *Baptisia australis* (False indigo), *Salix lasiandra* (Pacific willow), *Fraxinus latifolia* (Oregon ash), *Populus balsamifera* (black cottonwood), *Rubus discolor* (Himalayan blackberry), *Acer macrophyllum* (big leaf maple), *Alnus rubra* (red alder), *Pseudotsuga menziesii* (Douglas-fir), and *Abies grandis* (grand fir). The project area is moderately forested with criss-crossing railroad maintenance access roads and an old railroad bed. Much of the vegetation nearest the railroad and in the old railroad bed is invasive species such as *Cystisus scoparius* (Scotch broom) and Himalayan blackberry with grasses and herbaceous vegetation.

There are many standing snags and downed woody debris within the project area. Other invasive species noted as present, but not dominant in the riparian area include *Polygonum cuspidatum* (Japanese knotweed), *Allaria petiolata* (garlic mustard), and *Buddleia davidii* (butterfly bush). Herbaceous upland areas on site are dominated by the following non-native pasture species: *Lolium perenne* (perennial ryegrass), *Festuca arundinaceae* (tall fescue), *Bromus mollis* (downy brome), *Agrostis tenuis* (bentgrass), *Plantago lanceolata* (plantain), *Taraxicum officinale* (common dandelion), and *Cichorium intybus* (chicory).

Historic photographs of the Wyeth site show the area to have been highly impacted by railroad, highway, and dam construction activities (see photographs attached to this EA). It appears that large portions the area were completely denuded of trees and large vegetation.

### 3.3. Fish and Wildlife

The Columbia River supports a large diversity of native resident fish species such as white sturgeon (*Acipenser transmontanus*), longnose sucker (*Catostomus catostomus*), minnows such as chiselmouth (*Acrocheilus alutaceus*), and many federally listed salmon and trout species. Other native species include mountain whitefish (*Prosopium williamsoni*) and a variety of sculpins (*Cottidae* spp.). Although some of these fish are widespread in the Columbia Basin, resident species like white sturgeon and chiselmouth are restricted in their current distribution. Sturgeon prefer large, cool, fluvial environments and are unlikely to pass through the shallow portion of the river adjacent to the construction. Chiselmouth have the potential to be found in the area, especially near the shore where water temperature is suitable and where algal communities are present.

Popular recreational fish species such as largemouth (*Micropterus salmoides*) and smallmouth (*M. dolomieu*) bass are common to the Columbia River but are unlikely to be found in the open-water habitat with high wind and wave action. Other introduced fish species such as catfish (*Ameiurus*

spp.), yellow perch (*Perca flavescens*), and walleye (*Stizostedion vitreum*) are also important sport fish that may be present in or near the proposed project, but would not likely seek such an area with little in-water structure as preferred spawning, rearing, or foraging territory.

Various common species of birds and mammals compose the wildlife community of the Wyeth site. Bird species likely include swallows, chickadees, wrens, blackbirds, sparrows, and raptors among others. Bald eagles (*Haliaeetus leucocephalus*) are not likely to utilize the Wyeth site because suitable nesting and perching habitat is not present. Large mammal species such as deer, skunk, opossum, coyote, nutria, raccoon, beaver, and river otter are likely found in the area. Small mammal species such as mice, voles and bats also likely occur in the area.

### 3.4. Threatened and Endangered Species

#### 3.4.1. Species under NMFS Jurisdiction

Federally listed threatened and endangered species under the jurisdiction of the National Marine Fisheries Service (NMFS) that may occur in the Wyeth project area include the salmonid stocks shown on Table 2. A Biological Assessment (BA) is being prepared to evaluate the effects of the proposed action on these species. Critical habitat and essential fish habitat (EFH) also will be addressed in the BA. The EFH species present in the area include coho and Chinook salmon.

In 2005, critical habitat was designated for all Columbia River steelhead and salmon Evolutionarily Significant Units (ESU), with the exception of lower Columbia River coho salmon. General life history descriptions for the various salmonid ESUs shown in Table 2 are provided below.

**Table 2. ESA-listed Species under NMFS Jurisdiction**

Evolutionarily Significant Units (ESU)	Status	Life History Type	Federal Register (FR) Citation
<b>Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)</b>			
Snake River spring/summer run	Threatened	Ocean	70 FR 37160; June 28, 2005
Snake River fall run	Threatened	Ocean	70 FR 37160; June 28, 2005
Lower Columbia River	Threatened	Stream	70 FR 37160; June 28, 2005
Upper Columbia River spring run	Endangered	Stream	70 FR 37160; June 28, 2005
Upper Willamette River	Threatened	Ocean	70 FR 37160; June 28, 2005
<b>Coho Salmon (<i>Oncorhynchus kisutch</i>)</b>			
Lower Columbia River	Threatened	Stream	70 FR 37160; June 28, 2005
<b>Chum Salmon (<i>Oncorhynchus keta</i>)</b>			
Columbia River	Threatened	Ocean	70 FR 37160; June 28, 2005
<b>Sockeye Salmon (<i>Oncorhynchus nerka</i>)</b>			
Snake River	Endangered	Stream	70 FR 37160; June 28, 2005
<b>Steelhead (<i>Oncorhynchus mykiss</i>)</b>			
Snake River Basin	Threatened	Stream	71 FR 834; January 1, 2006
Lower Columbia River	Threatened	Stream	71 FR 834; January 1, 2006
Middle Columbia River	Threatened	Stream	71 FR 834; January 1, 2006
Upper Columbia River	Threatened	Stream	71 FR 834; January 1, 2006
Upper Willamette River	Threatened	Stream	71 FR 834; January 1, 2006

**Snake River Spring and Summer Run Chinook Salmon.** Fish from this ESU occur in the mainstem Snake River and subbasins including the Tucannon, Grande Ronde, Imnaha, and Salmon rivers. Adults migrate in late winter to spring and spawn from late August to November. Spawning occurs in tributaries to the Snake River. Juveniles remain in freshwater from 1-3 years and outmigrate from early spring to summer.

**Snake River Fall Run Chinook Salmon.** Fish from this ESU occur in the mainstem Snake River and subbasins including the Tucannon, Grande Ronde, Imnaha, and Salmon rivers. Adults migrate from mid-August to October and spawn from late August to November. Spawning occurs in the Snake River and lower reaches of tributaries to the Snake River. Juveniles rear in freshwater from 1-3 years and outmigrate from early spring to summer.

**Lower Columbia River Chinook Salmon.** Fish from this ESU occur from the MCR upstream to Little White Salmon River, Washington and Hood River, Oregon and including the Willamette River upstream to Willamette Falls. Adults migrate in mid-August through October (fall run) and late winter to spring (spring run). Spawning occurs from late August to November. Spawning occurs in the mainstem Columbia River to upper reaches of tributaries. Juveniles outmigrate from early spring to fall.

**Upper Columbia River Spring Run Chinook Salmon.** Fish from this ESU occur in Columbia River tributaries upstream of the Rock Island Dam and downstream of Chief Joseph Dam in Washington, excluding the Okanogan River. Adults migrate from late winter to spring and spawn from late August to November. Spawning occurs in the mainstem Columbia River to upper reaches of tributaries. Juveniles outmigrate from early spring to summer.

**Upper Willamette River Chinook Salmon.** Fish from this ESU migrate upstream from late winter to spring and spawn from late August to November. Juveniles migrate from early spring to summer, some rearing in the Columbia River estuary and some in freshwater.

**Lower Columbia River Coho Salmon.** It is believed that the majority of fish from this ESU return to the lower Columbia River to spawn between early December and March. Spawning occurs in tributaries to the Columbia River. Young hatch in spring, rear in freshwater for one year, and outmigrate to the ocean the following spring. Most juveniles outmigrate from April to August, with a peak in May. Coho salmon occur in the Columbia River estuary as smolts and limited estuarine rearing occurs (more extensive estuarine rearing occurs in Puget Sound).

**Columbia River Chum Salmon.** Fish from this ESU are distributed from Bonneville Dam to the MCR. Adults migrate from early October through November and spawning occurs in November and December. Spawning habitat includes lower portions of rivers just above tidewater and in the side channel near Hamilton Island below Bonneville Dam. Juveniles enter estuaries from March to mid-May and most chum salmon leave Oregon estuaries by mid-May. Most juveniles spend little time in freshwater and rear extensively in estuaries.

**Snake River Sockeye Salmon.** Fish from this ESU occur in the Salmon River, a tributary to the Snake River. This population migrates in spring and summer and spawning occurs in February and March. Spawning occurs in inlets or outlets of lakes or in river systems. Juveniles rear in freshwater and outmigrate in spring and early summer, outmigrating primarily between April and early June. They spend little time in estuaries as smolts and are guided to ocean waters by salinity gradients.

**Snake River Basin Steelhead.** Fish from this ESU occur in all accessible tributaries of the Snake River. Upstream migration occurs in spring and summer and spawning occurs in February and March. Spawning habitat includes upper reaches of tributaries. Juveniles spend from 1-7 years (average 2 years) in freshwater and outmigrate during spring and early summer.

**Middle Columbia River Steelhead.** Fish from this ESU are distributed from Wind River, Washington and Hood River, Oregon upstream to the Yakima River, Washington. These fish migrate in winter and summer and spawning occurs in February and March. Spawning habitat includes upper reaches of tributaries. Juveniles spend from 1 to 7 years (average 2 years) in freshwater and outmigrate during spring and early summer.

**Upper Willamette River Steelhead.** Fish from this ESU are a late-migrating winter group, rearing 2 years in freshwater and 2 years in the Pacific Ocean before returning to spawn. The run timing appears to be an adaptation to ascending Willamette Falls at Oregon City.

**Lower Columbia River Steelhead.** Fish from this ESU are distributed from Wind River, Washington and Hood River, Oregon downstream to the MCR. These fish migrate in winter and spring/summer and spawning occurs in February and March. Spawning habitat includes upper reaches of tributaries. Juveniles spend from 1-7 years (average 2 years) in freshwater and outmigrate during spring and early summer.

**Upper Columbia River Steelhead.** Fish from this ESU are distributed from the Yakima River upstream to the Canadian border. These fish migrate in spring and summer and spawning occurs in February and March. Spawning habitat includes upper reaches of tributaries. Juveniles spend from 1-7 years (average 2 years) in freshwater and outmigrate during spring and early summer.

### 3.4.2. Species under USFWS Jurisdiction

A BA is also being prepared to evaluate the effects of the proposed project on those fish and wildlife species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS; Table 3).

**Table 3. ESA-listed Species under USFWS Jurisdiction**

Species	Scientific name	Listing Status
Northern Spotted Owl	<i>Strix occidentalis caurina</i>	Threatened
Columbia River Basin Bull Trout	<i>Salvelinus confluentus</i>	Threatened - Critical Habitat designated

**Northern Spotted Owl.** The northern spotted owl was listed as a threatened species throughout its entire range in June 1990 (55 FR 26114). It ranges from southern British Columbia south to Marion County, California and east to the shrub steppe of the Great Basin in Oregon and California. In the Western Cascades, the northern spotted owl can be found from approximately sea level to 4,000 feet in elevation (57 FR 1796). Most observations of spotted owls habitat use have been made in forests with a component of old growth and mature forests consisting of *Tsuga heterophylla* (western hemlock), Douglas fir, and *Thuja plicata* (western redcedar). However, the northern spotted owl has been observed to use a wide variety of habitat types and forest stands, including managed stands for nesting, feeding or roosting (57 FR 1796).

In general, northern spotted owls preferentially use forests with greater complexity and structure. In the western cascades, the home range of northern spotted owl pairs ranges from approximately 1,000 to 10,000 acres in size, depending on the amount of old growth forest fragmentation present. The most important habitat characteristic is an uneven-aged, multilayered canopy that offers moderate to high (65% to 80%) cover. Numerous large trees with broken tops, deformed limbs, and cavities are typically used as nest sites by spotted owls. Spotted owls are primarily nocturnal and eat small mammals, birds, and insects. The majority of the prey base is northern flying squirrels (*Glaucomys sabrinus*), red tree voles (*Arborimus longicaudus*), and wood rats (*Neotoma* spp.; 55 FR 26114).

**Bull Trout.** Bull trout are endemic to western North America and were more widely distributed historically. Five distinct population segments (DPS) of bull trout are listed as threatened by the USFWS. The Columbia River DPS (listed in 1998) is the only one of the five that is likely to occur in the vicinity of the proposed project. Currently, the occurrence of bull trout in the Columbia River below Bonneville Dam appears to be incidental and their occurrence above Bonneville Dam appears to be limited. High quality bull trout habitat is characterized by cold water temperatures; abundant cover in the form of large wood, undercut banks, boulders, etc.; clean substrate for spawning; interstitial spaces large enough to conceal juvenile bull trout; and stable channels (USFWS 2000).

Historically, bull trout of the Columbia River DPS likely ranged through much of the Columbia River Basin with spawning and rearing occurring in the coldest creeks, often at higher elevations. Presently, bull trout of the Columbia River DPS are distributed in a more fragmented pattern throughout the Columbia River Basin with fewer adult migratory fish and fewer, more compressed spawning reaches than historically occurred.

The Washington Department of Fish and Wildlife provided a list of anecdotal sightings/captures of bull trout in the mainstem Columbia River. From 2000 through 2005 there were only nine bull trout reported. Three were downstream of Bonneville Dam, with two at the mouth of Hamilton Creek at Columbia river mile (CRM) 143 and one at the Bonneville Dam Smolt Monitoring Facility (CRM 144). Upstream of the dam, one bull trout was found at Cascade Locks (CRM 149), two at Drano Lake (CRM 162), two at the mouth of the Klickitat River (CRM 180.5), and one at the John Day Dam Smolt Monitoring Facility (CRM 215).

Fish passage data from the Bonneville Dam fish ladders (Corps, unpublished) show no sightings of bull trout moving through the fish ladders for 2000 through 2006 during the fish counting season (April 1<sup>st</sup> through October 31<sup>st</sup>).

### 3.5. Cultural and Historic Resources

Section 106 of the National Historic Preservation Act (NHPA) requires that federally assisted or federally permitted undertakings account for the potential effects on sites, districts, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places (Register). As the proposed Wyeth treaty fishing access site will be a ground-altering federal project, compliance with the NHPA will be sought by following the process outlined in Section 106 of the Act. In addition to archeological and historical investigations of the project area, tribal consultation on this undertaking is required pursuant to the compliance process. Although all the Columbia River treaty tribes are represented on the Treaty Fishing Access Site Task Force, which meets several times a year to consult on the program, specific consultation for cultural resources on this project with Lower Columbia River tribal cultural resources protection programs was necessary.

Extensive surveys of the area have been conducted by the Corps' staff archaeologists. Other site surveys include those by CH2M Hill (Ballantyne and McClintock 2003) performed prior to transfer of the land from the UPRR to the Oregon Parks and Recreation Department (OPRD), and a sub-surface testing investigation (Sharpe and McClintock 2005) conducted to assess the National Register eligibility of the historic 19<sup>th</sup> Century Wyeth tie treatment plant (east of the proposed project).

The Corps has respectfully requested formal tribal comment on any cultural resources constraints associated with the construction. When the Corps has completed the survey of all potential habitat improvement sites, the results will be incorporated into the cultural resources report along with any comments by the tribes, as well as the agency's Determination of Effect, which will then be forwarded to the Oregon State Historic Preservation Officer (SHPO) for concurrence or comment.

### 3.6. Socio-economic Resources

The proposed Wyeth site is located in Hood River County, Oregon, about 6 miles east of Cascade Locks and 10 miles west of Hood River. The following information on the socioeconomic resources of the county was drawn from the Hood River County Office of Economic Development (August 2009, located at <http://www.co.hood-river.or.us/>), unless otherwise noted. Population data for the county is shown in Table 4.

**Table 4. Population Data for Hood River County, Oregon**

Description	Total Hood River County	Total City of Cascade Locks	Total City of Hood River
2014 Projection	22,444	983	7,076
2009 Estimate	21,642	959	6,629
2000 Census	20,411	1,115	5,831
1990 Census	16,903	930	4,730
Growth 1990-2000	20.75%	19.89%	23.28%

For 2007, the median household income in Hood River County was \$47,159, and 12.7% of the county's population was below the poverty level (U.S. Census Bureau QuickFacts located at <http://quickfacts.census.gov/qfd/states/41/41027.html>). The July 2009 unemployment rate for the county was 8.4% as compared to the state of Oregon's rate of 11.9% for the same period (Oregon Employment Department located at <http://www.qualityinfo.org/olmisj/AllRates>).

Agriculture is a large part of both the economy and community in Hood River County. The major crops, including pears, apples, and cherries, bring in about \$60 million dollars annually. The county is also home to eight wineries. Many high-tech businesses including web developers, software publishers, and aviation/aerospace service companies are located in the county. In 2004, the Gorge Technology Alliance was formed to promote technology and attract high-tech businesses to the area.

The county is centrally located at the heart of the Columbia River Gorge National Scenic Area and offers many recreational activities including windsurfing, snowboarding, skiing, camping, hiking, swimming, backpacking, rock climbing and biking. The many recreational attractions bring thousands of visitors to the county each year, making tourism one of the largest economic sectors. At Wyeth, the Forest Service's Wyeth campground is located directly south of Interstate 84 and offers 14 individual campsites and three group sites, restrooms with flush toilets, and can accommodate trailers up to 30 feet (no hookups).

## 4. ENVIRONMENTAL CONSEQUENCES

### 4.1. Physical Characteristics

#### 4.1.1. Geology and Soils

On-shore materials at the Wyeth site were found to be stable, with good strength and permeability properties and possessed sufficient bearing capacity to support abutment walls with minimal settlement. The depth of the gravelly materials in the vicinity of the boat dock was sufficient to provide adequate lateral capacity for the dock piling without encountering bedrock. The potential for liquefaction was evaluated, and the generally coarse-grained subsurface materials at the site were not considered susceptible to liquefaction. Because of the relatively flat nature of the project site, slope stability is not a concern.

#### 4.1.2. Hydrology and Hydraulics

The hydrology of the proposed treaty fishing access site has been greatly altered over the last 100 years. The project, as proposed, will make no changes to the existing site hydrology except where stormwater runoff is diverted to treatment swales. No stream diversion will take place in the upland work and no sheet flow will be created that could cause erosion or soil movement into streams or rivers. In the habitat restoration site to the south of the railroad, the removal of the artificial fill which constricts flow to the backwater area will remove one element that artificially influences the hydrology of the Gorton Creek backwater/wetland area.

Installation of the breakwater structures will produce a hydraulic effects including wave transformation near the shore and/or creation of local eddies in the vicinity of the breakwaters. Waves will be affected downwind of the proposed structures; with the intended consequence of providing wave sheltering within the boat basin. For the predominant west winds, wave action will be lessened upstream near the shallow breakwater, up to a distance of about 200 feet along the shore. For the less frequent east winds, waves downstream of the site would be reduced up to a distance of about 250 feet.

The area of hydraulic influenced within the proposed boat basin is approximately 1 acre. Outside the proposed boat basin, the design engineers have estimated that the area of influence would be from 1 to 1.5 acres.

The influence of the in-water structures on eddies and local flow effects is expected to be of a similar scale to the waves effects, with primary influence within the boat basin and downstream. Once the structures are in place, there may be some eddy effect downstream of the breakwaters, depending on the rate of flow in Bonneville Pool. Since all breakwater structures are detached from the shore, closed eddy loops are not expected to form. Eddies within the basin, will be relatively low velocity near the bank. Modeling was done by the project design team which showed velocities ranging from near zero at the shore to 1.4 feet per second in the vicinity of the breakwaters. This model was based on the mid-channel velocity of 2.3 feet per second during the 2-year flood event.

#### **4.1.3. Floodplains**

Though portions of the proposed project are within the FEMA floodplain, the project is not subject to county zoning ordinances as it is considered an exempt land use and activity. Land acquired by the Corps for development as “in lieu” fishing sites is exempt from floodplain development restriction. The proposed project is expected to contribute only an estimated 1,000 cy of fill to the floodplain and is expected to have no impact on the frequency or severity of flooding in the Bonneville Pool.

#### **4.1.4. Sediment Quality**

Samples of the material to be dredged from the boat basin have been taken. The material is currently being tested for any contamination and data will be posted at the following web site. <http://www.nwp.usace.army.mil/ec/sqer.asp>. The proposed project is expected to have no impact on the sediment quality in the area of the in-water work. However there will be conversion of substrate type for the area where the breakwaters are placed from cobble and silty sand to large angular rock substrate.

The upland work will require BMPs for stormwater runoff and erosion control that will keep the upland construction from contributing sediment to the river. Also, the site restoration plan will require erosion and stormwater protection that will prevent new soils and sediment from entering the waterway post-construction.

#### **4.1.5. Hazardous Waste**

Even though the area of the former Wyeth tie-treating plant on the adjacent parcel of property has been remediated and capped, the proposed action was designed to avoid that area entirely. The Oregon DEQ had oversight for the clean-up of the site and issues a letter of ‘No Further Action’ for the area that included deed restrictions for use of that area. The remediation site (see Section 3.1.5) will not be affected by the proposed project.

#### **4.1.6. Air Quality/Noise/Light**

There would be a small, localized reduction in air quality due to emissions from construction equipment. There also would be localized increases in noise levels from construction equipment. These impacts would be minor and temporary in nature, and would cease once construction is completed. Ambient noise in the area includes vehicular traffic around the clock on the near-by 4 lanes of Interstate Highway 84 as well as train traffic on the Union Pacific rails. These tracks are also used around the clock and average 20-24 trains transiting the area in a 24-hour period. The proposed action includes a floating dock structure with a minimum requirement for 25 percent light penetration. By limiting the shading effect, the structure is not expected to provide preferred in-water predator habitat.

### **4.2. Vegetation**

The construction of the upland features of the project will require the removal of some vegetation. The contractor will be required to avoid vegetation where possible and minimize impacts to remaining vegetation. However, it is certain that some trees and shrubs will have to be removed in order to accomplish the project objectives. The contractor will be required to use any uprooted trees 6-inches or greater in diameter to create habitat along the shoreline. Large woody debris is a

normally occurring feature in natural aquatic systems where trees fall from eroding banks and are partially inundated, often for years. These partially inundated trees provide habitat for many aquatic species and desirable habitat for resting, rearing, and foraging salmonids. The contractor will be required to remove any trees with root wads intact so that they can be placed along the shore, partially in the water. The root wads will serve to anchor the trees to the shore if placed above the high normal operating pool.

Temporary adverse impacts to wetlands may result when the trestle and associated abutment fill is removed to open up the backwater area to more flow. These temporary impacts include increased turbidity and exposure of erodible soils. However, these impacts will be temporary and the net result will be beneficial to salmonid species. By increasing light penetration predator habitat is decreased. By opening the artificially constricted flow of water into and out of the off-channel area, the area becomes better habitat for and more accessible to resting and rearing salmonids.

At the Rufus and Celilo habitat restoration sites, non-native shoreline vegetation will be replaced with native vegetation and downed trees will be used to create improved riparian and near-shore aquatic habitat.

### **4.3. Fish and Wildlife**

During construction of the upland portion of the project, upland wildlife species may be temporarily displaced by construction activities. Vegetation removal for the bridge construction, as well as construction of the access road, campground and parking area may permanently displace any wildlife found in the area. However, part of the project scope requires the removal of the stockpiles of stone and replace that area with vegetation to restore that area to usable upland wildlife habitat. There will also be shoreline habitat improvements using downed woody debris, and wetland habitat improvements by opening up the backwater area to more flow. In-water work will include some form of in-water work isolation to minimize impacts to aquatic organisms. Off-site measures will restore some shallow-water habitat and make improvements to existing armored banks by replacing non-native vegetation with native species that will add more diversity and structure to the bank and near-shore in-water habitat. When complete, there should be a net increase in functional wildlife and riverine habitat.

### **4.4. Threatened and Endangered Species**

#### **4.4.1. Species under NMFS Jurisdiction**

The portion of the project that will have a negative impact on ESA-listed salmonid species in the Columbia River is the in-water construction of the boat ramp, boat dock and breakwater structures. This portion of the river does not provide spawning habitat, but instead is a migratory corridor for adult fish moving upstream to spawn and juveniles moving downstream to the ocean. The timing of the work so that all disturbance is done during the designated in-water work window for this reach of the river will minimize impacts to all species because fewer fish are moving through the area during this time. Because of the shallowness of the area, the most likely impacts would be to juveniles and sub-adults that use the shoreline areas for migration, resting, and rearing. The construction activities will cause an in-water disturbance. The short-term, temporary environmental impacts due to construction such as noise, ground disturbance, and increased turbidity will likely cause avoidance behavior by fish migrating through the area. These activities are temporary and minimal in effect, only lasting for the duration of the project. The construction contractor will be required to

implement a work isolation plan that will exclude fish from the in-water construction site. Fish salvage from the enclosed area will be required along with hydroacoustic attenuation for possible pile driving to prevent injury to fish. Erosion control and stormwater management plans are incorporated into the project design to minimize impacts to the river and thus will also protect aquatic species. No activities that violate existing state, federal, and local regulations are anticipated.

Long-term impacts include loss of aquatic and riparian habitat. Total project disturbance covers the 0.6-acre boat basin and ramp, an additional 1.0 acre of shallow-water habitat covered by the breakwaters, and 0.25 acres of riparian habitat cleared, reshaped, and developed for the boat ramp. To offset these impacts, the Corps has proposed a number of habitat restoration and improvement projects both on-site and off-site that will replace the functional loss resulting from these activities.

Of the thirteen ESUs listed in Table 2, only 10 have potential to be impacted by the proposed action. The other three, Upper Willamette River Chinook, Columbia River Chum Salmon, and Upper Willamette River Steelhead will not be affected because they do not occur in this portion of the Columbia River.

The timing of the in-water work will serve to minimize construction impacts to the remaining 10 ESUs by scheduling work when there are few migrating adults or juveniles. The post-construction impacts will be more long-term. However efforts have been made to avoid and minimize impacts through the design, timing, and habitat restoration features incorporated into the proposed action.

#### **4.4.2. Species under USFWS Jurisdiction**

**Northern Spotted Owl.** Based on information provided to the Corps by the USFWS (September 24, 2009), the nearest known or predicted northern spotted owl nest site is over 2 miles away from the project area. However, a narrow band of potentially suitable habitat for northern spotted owl is present near the parking lot, access road, and campground construction area, along the south shore of the Columbia River. This band of habitat is separated from the relatively contiguous forested areas of the Oregon side of the Columbia River Gorge by Interstate Highway 84 and the Union Pacific Railroad line. While it is not impossible for spotted owls to access this band of habitat, the spatial arrangement (separation) of this band of habitat from more suitable habitat south of the interstate highway and the nearly constant use of the highway and rail line, likely results in a “disturbance barrier” that makes access to this area less than optimal. Further, the small size of this band of habitat limits how well it can function as foraging and/or roosting habitat and likely precludes nesting by spotted owls altogether. Therefore, the proposed project is not expected to affect the northern spotted owl.

**Bull Trout.** As discussed in Section 3.4.2, there have been a very low number of sitings of bull trout above Bonneville Dam. In addition, the Columbia River in the vicinity of the Wyeth site does not typically achieve water temperatures or contain other high quality habitat characteristics that are suitable for bull trout. Therefore, the proposed project is not expected to affect bull trout.

### **4.5. Cultural and Historic Resources**

The Corps archaeologists are working with the Tribes and Oregon SHPO to ensure compliance will all applicable laws and that due diligence is done to avoid impacts to any cultural or historic resource on the proposed site.

#### 4.6. Socio-economic Resources

The proposed action will not cause changes in population, economics, or other indicators of social well being. The proposed action also will not result in a disproportionately high or adverse effect on minority populations or low-income populations.

The proposed action will provide additional recreational opportunities with the new camp sites, as well as economic and safety benefits for those tribal fishers who will be able to fish and tend their nets from a closer more convenient launch ramp. There are no impacts anticipated for other recreational activities common in the Columbia River Gorge such as windsurfing and kite boarding.

The traffic traveling into and out of the Wyeth site will have a minimal impact to the existing Wyeth Road interchange. There are six campsites and six parking spaces proposed at the site. The average daily traffic, accounting for traffic moving in and out, and minor turnover, should not exceed 25 vehicles per day.

#### 4.7. Cumulative Impacts

Cumulative effects are defined as, “The impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (Code of Federal Regulations Title 40, Section 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. The past actions that have occurred at the Wyeth site are identified below. Together, these actions have resulted in the existing conditions of the project area (see Section 3).

- Interstate Highway 84 construction/interchange ramps at Wyeth.
- UPRR railroad tracks and facilities.
- Rock stockpiles from Bonneville Lock excavation.
- Wyeth tie-treating plant used for treating railroad ties from 1880s to 1922.

The proposed Wyeth site is the 30<sup>th</sup> of 31 authorized treaty fishing access sites to be developed by the Corps as mitigation for flooding of ancestral fishing sites used by Native America tribes on the Columbia River. The Dallesport site will be the final treaty fishing access site and is being planned, designed, and constructed as a completely separate action from the Wyeth site development. The Dallesport site will also provide a boat ramp with parking, six campsites, a fish cleaning facility, and restroom. This site is scheduled to be constructed in 2011-2012.

The Wyeth site will provide the only developed boat ramp on the Oregon side of the Columbia River between Hood River and Cascade Locks, a 20-mile stretch of riverbank. Development of the site is not expected to attract new tribal boaters or fishers. Instead, it is expected that it will relieve some of the pressure on available resources at other fishing access sites, especially those across the river at the mouth of Wind River, upstream at the Hood River Boat Basin, and downstream at the City of Cascade Locks. In addition, the new facilities will not result in an increase in tribal fishing harvest. The harvest of ESA-listed salmonid species is highly regulated by the treaty tribes and the states of Oregon and Washington, with a federal component. A 10-year management plan for the harvest of fish from the Columbia River by the treaty tribes can be found at:

[http://www.critfc.org/text/press/2008-17USvOR\\_Mngmt\\_Agrmt.pdf](http://www.critfc.org/text/press/2008-17USvOR_Mngmt_Agrmt.pdf). The purpose of the plan is to protect, rebuild, and improve upper Columbia River fish runs while providing harvests for both

treaty Indian and non-treaty fisheries. It provides an abundance-based management framework which is not dependent on the number of fishing facilities, boaters, or demands on the fishery.

There is a long-term plan for the State of Oregon to develop the adjacent property just to the east of the proposed Wyeth site for a state park. However, there is no funding currently available and the Oregon Parks and Recreation Department has no specific plans for the extent of development that will eventually be done nor is there a projected date for development to begin.

The proposed Wyeth site is located within the Columbia Gorge Scenic Area where development of any kind is highly restricted. The site is also in close proximity to forested land that is in a steep drainage at the eastern edge of the Cascade Mountain Range. This forested area is federally owned and managed. These factors have greatly limited past development and will continue to limit future development in the area.

As part of the Wyeth action, off-site habitat improvement is proposed at the Celilo treaty fishing site where there is opportunity to improve the nearshore riverbank habitat by placing large woody debris to increase habitat diversity. Another component of habitat improvement would require invasive species control and native plant establishment with emphasis on establishing intermediate to mature shrub and tree layers. In addition, at the Rufus treaty fishing site the Corps is proposing to do much the same as with the Celilo site by improving the nearshore and riparian habitat by placing large woody debris along the shore. There also is an opportunity to offset some in-water impacts by taking a cobble island area that is currently too high to be inundated regularly and grading it down to an elevation that would be routinely inundated to provide shallow in-water habitat attractive to rearing juvenile salmon and benthic organisms.

In conclusion, this cumulative effects analysis considered the effects of implementing the proposed action in association with past, present, and reasonably foreseeable future Corps' and other parties' actions in and adjacent to the Wyeth site. The potential cumulative effects associated with the proposed action were evaluated with respect to each of the resource evaluation categories in this Environmental Assessment, and no cumulatively significant, adverse effects were identified.

The proposed Wyeth site is located within the Columbia Gorge Scenic Area where development of any kind is highly restricted. The site is also in close proximity to forested land that is in a steep drainage at the eastern edge of the Cascade Mountain Range. This forested area is federally owned and managed. Due to these factors, which have greatly limited past development and will continue to limit future development in the area, the likelihood of additional impacts, including cumulative impacts, are expected to be negligible.

## 5. COORDINATION

Consultation with U.S. Fish and Wildlife Service (USFWS). Early involvement with the USFWS was conducted during the alternatives analysis phase of the proposed action with regard to the ESA-listed northern spotted owl and bull trout. Modifications to the in-water design were made in response to agency comments. The Corps is in consultation with USFWS to determine effects of the proposed project on these species and will continue to work with the agency through the final design stages to ensure that impacts are avoided or minimized, where possible. Upland, wetland, riparian, and near-shore aquatic habitat restoration are features have been incorporated into the proposed action to offset any unavoidable impacts.

Consultation with National Marine Fisheries Service (NMFS). Early involvement with the NMFS was conducted in regard to ESA-listed anadromous salmonid species and their habitat that occur within the affected area. The selected alternative for the in-water portion of the proposed action was made based on input from the NMFS and other agencies. The Corps is in consultation with NMFS to determine effects of the proposed project on listed salmonid species and will continue to work with the agency through the final design stages to ensure that impacts are avoided or minimized, where possible. Upland, wetland, riparian, and near-shore aquatic habitat restoration features have been incorporated into the proposed action to offset any unavoidable impacts.

Consultation with Oregon State Historic Preservation Office (SHPO). The National Historic Preservation Act of 1966 requires consideration be given to the potential effects of federal undertakings on historic resources. This includes historic and prehistoric cultural resources sites. Corps' archaeologists have been working with the SHPO and the four treaty tribes to ensure due diligence to avoid impacts to cultural or historic resources at the proposed site. A previous cultural resources survey and current filed investigations have not identified any Register-eligible historic properties.

Consultation with Tribal Governments. Throughout the process of site selection and preliminary site design, the four treaty tribes have been a part of the Treaty Fishing Site Access Task Force that meets several times a year. In addition, the Corps' cultural resources staff has sent formal letters to the each of the treaty tribes to request specific consultation on cultural resources for the proposed project through their tribal cultural resources protection staff.

Other Agencies. Coordination with the State of Oregon Department of Transportation, Oregon State Parks and Recreation, Union Pacific Rail Road, and the Bureau of Indian Affairs have been frequent and on-going to negotiate and finalize the terms of multiple land purchase and transfer agreements.

This draft EA is being issued for a 30-day public review period. The draft EA will be provided to federal and state agencies, tribes, organizations and groups, and interested publics. Responses to public comments will be prepared. Public concerns identified in comments will aid in determination of whether or not an Environmental Impact Statement (EIS) is necessary for the proposed action. If it is determined that an EIS is not required, a Finding of No Significant Impact (FONSI) will be signed, concluding the National Environmental Policy Act process.

## **6. COMPLIANCE WITH LAWS AND REGULATIONS**

### **6.1. Clean Air Act**

This Act established a comprehensive program for improving and maintaining air quality throughout the United States. Its goals are achieved through permitting of stationary sources, restricting the emission of toxic substances from stationary and mobile sources, and establishing National Ambient Air Quality Standards. Title IV of the Act includes provisions for complying with noise pollution standards. There would be an intermittent, temporary reduction in air quality during construction of the proposed Wyeth site due to emissions from construction equipment. There also would be an intermittent, temporary increase in noise levels from construction equipment.

### **6.2. Clean Water Act**

This Act requires certification from state or interstate water control agencies that a proposed water resources project is in compliance with established effluent limitations and water quality standards. The proposed action is expected to be in compliance with the Act. A Section 404(b)(1) Evaluation will be prepared for the proposed action prior to construction and will undergo public review. The Section 404(b)(1) Evaluation will be submitted to the Oregon Department of Environmental Quality. This agency will be responsible for issuance of the 401 Water Quality Certificate, which may include terms and conditions to ameliorate impacts from the proposed action. In addition, a National Pollutant Discharge Elimination System permit will be required from the Oregon Department of Environmental Quality for work performed on federal, state, and local lands.

### **6.3. Endangered Species Act**

In accordance with Section 7(a)(2) of this Act, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or endangered species. Information on federally listed species and designated critical habitat is presented in this EA. Biological Assessments (BAs) are being prepared for the proposed action to address federally listed species under the jurisdiction of the NMFS and USFWS. The BAs will be provided to the respective agencies for review and consultation. The Services will issue Biological Opinions that will likely set forth terms and conditions to minimize impacts of the proposed action.

### **6.4. Fish and Wildlife Coordination Act**

This Act states that federal agencies involved in water resource development are to consult with the USFWS concerning proposed actions or plans. The proposed action has been coordinated with the USFWS in accordance with the Act.

### **6.5. Magnuson-Stevens Fishery Conservation and Management Act**

The Sustainable Fisheries Act of 1996 amended the Magnuson-Stevens Act establishing requirements for essential fish habitat (EFH) for commercially important fish. Pursuant to the Magnuson-Stevens Act, an EFH consultation is necessary for the proposed action at the Wyeth site. Essential fish habitat is defined by the Act as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The lower Columbia River has been

designated as EFH for various salmon species. The Columbia River above Bonneville Dam is designated as EFH for Chinook and coho salmon. The proposed action will directly affect EFH for these two species. An EFH assessment under the Magnuson-Stevens Act will be provided as part of the BA submitted to the NMFS for the proposed action.

## **6.6. Marine Mammal Protection Act**

This Act prohibits the take or harassment of marine mammals. Steller sea lions, California sea lions, and Pacific harbor seals are all found in the Columbia River below Bonneville Dam. The majority of pinniped observations just below the dam occur from February through May. Based on observations and data collected by the Corps, peak season for pinniped presence at the Bonneville tailrace appears to be mid-March to mid-May.

All pinnipeds observed above the dam have been identified as harbor seals and California sea lions, which have been known to lock through the dam and in recent years have entered the fish ladders to feed on salmonids (Robert Stansell, Corps' biologist, personal communication). Pinnipeds are unlikely to be found above Bonneville Dam during the in-water work window of November 15 - March 15. Those that traverse the dam are unlikely to use the shallow water habitat where the in-water construction will be done. Their presence and activity is most likely to be where adult salmon are found and/or where they can rest but also quickly access deep water for flight from any disturbance. Because there is very little likelihood of marine mammals in the area, the proposed action does not violate this Act.

## **6.7. Migratory Bird Treaty Act and Migratory Bird Conservation Act**

These acts require that migratory birds not be harmed or harassed. Under the Migratory Bird Treaty Act, "migratory birds" essentially include all birds native to the U.S. and the Act pertains to any time of the year, not just during migration. The Migratory Bird Conservation Act aims to protect game birds. Impacts from construction could displace birds by causing flushing, altering flight patterns, or causing other behavioral changes, but it is not expected that effects would rise to the level of harm or harassment.

## **6.8. Natural Historic Preservation Act**

Section 106 of this Act requires that federally assisted or federally permitted projects account for the potential effects on sites, districts, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places. The proposed action is being coordinated with the Oregon State Historic Preservation Office in accordance with the Act. Results of Cultural Resources surveys done to date support a determination of *No Effect* on historic properties.

## **6.9. Native American Graves Protection and Repatriation Act**

This Act provides for the protection of Native American (and Native Hawaiian) cultural items, established ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also establishes requirements for the treatment of Native American human remains and sacred or cultural objects found on federal land. This Act also provides for the protection, inventory, and repatriation of Native American cultural items, human remains, and associated funerary objects. There are no recorded historic properties within the immediate project area and the probability of locating human remains in this highly disturbed area is

low. However, if human remains are discovered during construction, the Corps and/or the Contractor will be responsible for following all requirements of the Act.

#### **6.10. Environmental Justice**

Executive Order 12898 requires federal agencies to consider and minimize potential impacts on subsistence, low-income, or minority communities. The goal is to ensure that no person or group of people should shoulder a disproportionate share of the negative environmental impacts resulting from the execution of domestic and foreign policy programs. The proposed action is not expected to disproportionately affect low income and/or minority populations, and is in compliance with Executive Order 12898.

#### **6.11. Executive Order 11988, Floodplain Management**

The proposed project is expected to contribute only a net increase of an estimated 1,000 cy of fill to the floodplain and is expected to have no impact on the frequency or severity of flooding in the Bonneville Pool.

#### **6.12. Executive Order 11990, Protection of Wetlands**

All activities in wetlands associated with this project are designed to enhance the function and improve the value for fish and wildlife habitat.

#### **6.13. Prime and Unique Farmlands**

Not applicable.

#### **6.14. Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act**

Any presence of these types of wastes would be responded to within the requirements of the law and Corps' regulations and guidelines. The proposed action was designed to avoid the area of the former Wyeth tie-treating plant remediation site.

## **7. LITERATURE CITED**

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- HDR Engineering. July 20, 2009. Wyeth Treaty Fishing Access Site Alternatives Analysis. Prepared for the U.S. Army Corps of Engineers, Portland OR.
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- ODFW (Oregon Department of Fish and Wildlife). June 2008. Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources. Salem OR.
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- USFWS (U.S. Fish and Wildlife Service). October 23, 2000. Bull Trout Occurrence and Habitat Selection: A White Paper Addressing Bull Trout Distribution and Habitat Requirements as Related to Potentially Occupied Habitats. Western Washington Office.

**Attachment**  
**Historic Photographs of the Proposed**  
**Wyeth Treaty Fishing Access Site**

**1930 Photo - arrow points to Gorton Creek channel**



**1935 Photo**



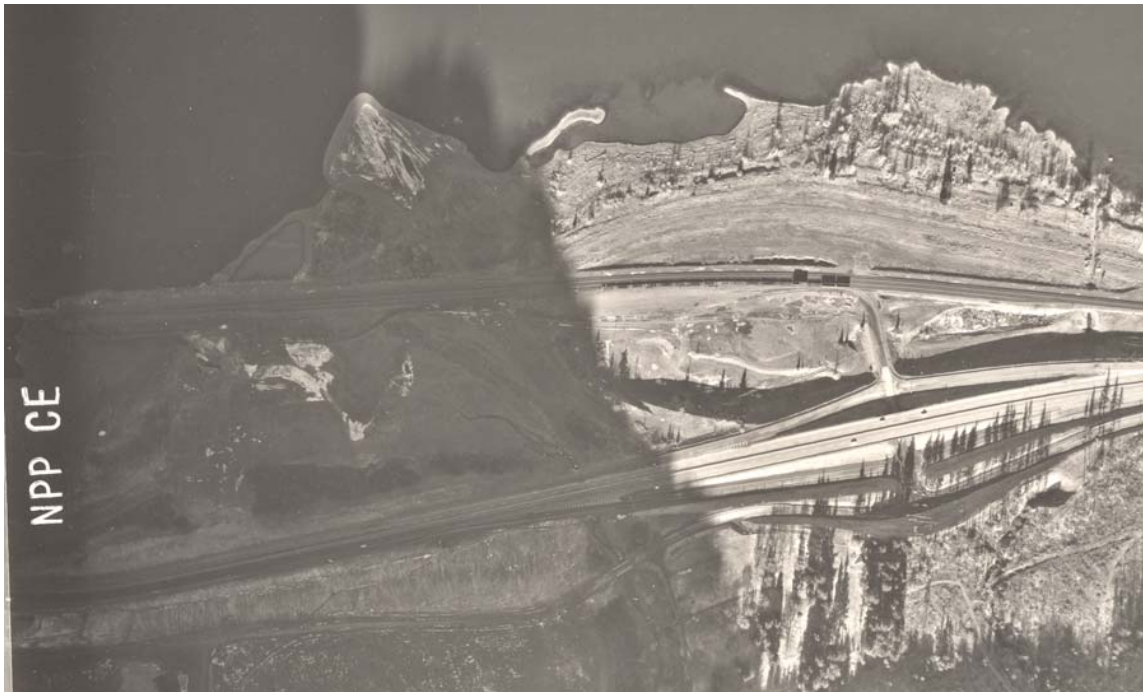
**1957 Photo**



**1968 Photo**



**1971 Photo**



**2005 Photo**

