



## **Quillayute River Restoration - Reach 3 Environmental Assessment Finding of No Significant Impact**

**January 2022**

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS), Bureau of Indian Affairs (BIA), acting on behalf of the Quileute Tribe, and the Natural Resources Conservation Service (NRCS) to adopt the preferred alternative in the Quillayute River Restoration – Reach 3 Environmental Assessment (EA; Tetra Tech 2021). The proposed action alternative includes installing several large wood structures on the banks and floodplain on both sides of the river to provide bank protection, flow direction, and habitat features. This alternative was evaluated against a no action alternative that represents the continuation of current environmental trends in Reach 3. The alternatives were described and analyzed in the Quillayute River Restoration – Reach 3 EA (Tetra Tech 2021).

The Superintendent's determination of no impairment, prepared in fulfillment of the NPS *Management Policy 2006* requirements, is also attached. As the delegated Responsible Federal Official for compliance with NEPA, the NRCS State Conservationist must decide whether to provide funding to the Quileute Tribe to implement to the preferred alternative, in accordance with NRCS' NEPA-implementing regulations and policy.

### **Alternatives Analyzed**

The following alternatives were considered in the EA (Tetra Tech 2021) for the Quillayute River Restoration – Reach 3:

- No Action: The project activities will not be implemented.
- Proposed Action Alternative: Several large wood structures will be installed on the banks and floodplain on both sides of the river to provide bank protection, flow redirection, and habitat features, and pilot channels will be excavated in the floodplain.

### **Selected Alternative**

The NPS, BIA, and NRCS have selected the Proposed Action Alternative as described and analyzed in the EA (Tetra Tech 2021) for implementation and funding.

### **Description**

Several large wood structures will be installed on the banks and floodplain on both sides of the river to provide bank protection, flow redirection, and habitat features. These structures will be built using combinations of whole trees (at least 45 feet long and 30 inches diameter with 6-foot

minimum diameter rootwads and branches attached), large logs (at least 45 feet long and 30 inches diameter with 6-foot minimum diameter rootwads), cross members (at least 45 feet long and 30 inches diameter with optional 6-foot-diameter rootwads), medium logs (at least 20 feet long and 18 inches diameter), timber piles, boulders, native alluvium, and racking material.

Structure types include the following:

- A revetment log structure intended to inhibit bank erosion, resist a mainstem avulsion into Smith Slough, provide improved habitat complexity, and stabilize the improved walkable fishing access area. The structure will be placed tight to the bank to ensure it does not inhibit the placement of fishing nets.
- A deflector structure placed along the bank downstream of the revetment log structure to protect the eroding streambank and create pool habitat. The location and dimensions of the deflector structure have been designed to not inhibit the placement of fishing nets.
- Large apex structures placed where flow splits are desired to encourage high flows onto the floodplain and into excavated pilot channels. These structures have been designed and located to not inhibit the placement of fishing nets and have been evaluated for bumper logs to ensure boater safety.
- Large deflector structures placed at key locations along the banks to redirect stream energy away from eroding stream banks and to create complex pool habitat. Large deflector structures will be placed at the downstream extent of side channels and will provide complex alcove habitat. The locations and dimensions within the wetted channel have been designed to minimize impacts to the placement of fishing nets, while still effectively redirecting stream energy away from eroding banks.
- Floodplain log structures, which will maintain the alignment of high flow channels, increase floodplain connection, and provide habitat complexity and diversity. These structures will also be placed adjacent to the large apex structures at the inlet of the floodplain connections at the upstream extent of the site as well as adjacent to the two downstream large apex structures to increase habitat complexity and diversity at those locations. The locations and dimensions of floodplain log structures have been selected to avoid inhibiting the placement of fishing nets.

A 20-foot-wide improved walkable fishing access area that allows tribal fishermen to hand-launch small boats will be constructed in the revetment log structure by placing timbers and boulders in a stair-step configuration. Excavation on the floodplain will be used to create pilot channels that will work in conjunction with the apex structures and floodplain log structures to initiate side channels that activate at high flow. Existing trees less than 24 inches in diameter at breast height within the footprint of the pilot channels will be tipped over with root wads intact and used in place to supplement the floodplain wood supply; larger trees, if encountered, will not be felled. The 100-foot-by-50-foot parking area at the terminus of Thunder Road will be improved with added base material, grading, and better drainage. Finally, a vehicle barrier consisting of a series of large boulders will be constructed to keep vehicles from approaching the riverbank.

Construction access to Reach 3 will be via existing paved and gravel roads (i.e., La Push Road, Thunder Road, and Mora Road), as well as temporary access routes across the floodplain. Temporary bridges will be used as needed to avoid sensitive aquatic areas; for example, to drive

equipment from the Mora Campground down to the floodplain across the linear wetlands at the toe of the slope. Additional opportunities for the delivery of equipment and materials include barge and helicopter. Multiple staging areas have been identified, some of which utilize existing cleared areas and others that will require vegetation clearing. Helicopter operations to deliver wood to the floodplain staging areas are expected to require a large helicopter, such as a Chinook 234, for approximately 3 days, which will occur consecutively barring weather or other unforeseen issues.

Construction will occur in 2022, with the potential for additional construction and final revegetation in 2023 based on environmental factors, construction sequencing, or other constraints. Post-project monitoring will continue for at least 3 years following completion. Monitored elements will include groundwater temperature and flux, vegetation cover, water levels, and elevation. During this time period, the monitoring will require the installation and maintenance of semi-permanent benchmarks (i.e., rebar or tree tags) to mark the start of approximately 25 transects for elevation and vegetation surveys, a barometric pressure sensor and a water pressure sensor that will be housed in a stilling well, and 10 to 20 groundwater flux temperature rods.

Construction activity will be focused at three locations (i.e., Thunder Field, the Quileute floodplain, and the Mora floodplain), each requiring approximately 2 weeks of intensive construction. Mobilization will begin as early as mid-May with preparation of staging areas and access routes. Construction work above the ordinary high-water mark will begin in mid-June, and work below the ordinary high-water mark will be performed during the recommended in-water work window, which has been established to 1) avoid critical periods of salmonid spawning, rearing, and migration; 2) not interfere with the tribal fishing season; and 3) take advantage of the historical low-flow period. The allowable in-water work period for protection of juvenile salmonid migration, feeding, and rearing areas in Tidal Reference Area 14 is July 15 to February 15. This timeframe overlaps with the marbled murrelet nesting season. To minimize noise and visual disturbance to nesting marbled murrelets, daily construction activities will be limited to daylight hours beginning 2 hours after sunrise and ending 2 hours before sunset.

### **Other Alternatives Evaluated**

Chapter 2, page 2-1, of the EA describes the No Action alternative and alternatives considered but dismissed.

### **Why the Selected Alternative Will Not Have a Significant Effect**

After considering the environmental consequences described in the EA (Tetra Tech 2021), the NPS has determined that the Selected Alternative and its associated actions will not have a significant effect on the quality of the human environment. Thus, an Environmental Impact Statement (EIS) will not be prepared. This finding is based on the following:

- The Selected Alternative is not likely to have significant effects.
- The Selected Alternative will not result in significant effects on the unique natural resource characteristics of the area, including prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The Selected Alternative will have no adverse effect on cultural resources.
- The Selected Alternative will have the following effects on species listed or proposed for listing as endangered or threatened or their critical habitat as determined under the

Endangered Species Act of 1973: no effect on northern spotted owls (*Strix occidentalis caurina*); may affect, is not likely to adversely affect marbled murrelets (*Brachyramphus marmoratus*); and may have temporary adverse effects, but overall long-term beneficial effects, on essential fish habitat for Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*O. kisutch*).

- The Selected Alternative has a wide range of beneficial and adverse effects (see Measures to Minimize Environmental Harm below).
- The Selected Alternative will not adversely affect public health or safety.
- The Selected Alternative will not violate federal, state, or local laws or requirements for the protection of the environment.

The NRCS State Conservationist further considered the environmental consequences described in the EA (Tetra Tech 2021) and has determined that the Selected Alternative and its associated actions will not have a significant effect on the quality of the human environment. Thus, an Environmental Impact Statement (EIS) will not be prepared. This finding is based on the following factors from CEQ's implementing regulations at 40 CFR Part 1508.27 and from NRCS regulations at 7 CFR Part 650:

- 1) The EA evaluated both beneficial and adverse impacts of the proposed action. It is anticipated the proposed action will result in long-term beneficial impacts for some environmental resource (soil, animals, plants, and human considerations) and discountable or neutral long-term impacts on air and water resources. The analysis in Section 3 of the EA, incorporated herein by reference and summarized in the Table below, shows adverse impacts resulting from the Selected Alternative will be temporary, localized, and minor in nature. Mitigating measures will be used during implementation and operation of the Selected Alternative to further reduce adverse impacts. Therefore, the Selected Alternative will not result in significant impacts to the human environment, particularly when focusing on the significant adverse impacts which NEPA is intended to help decisionmakers avoid, minimize, or mitigate.
- 2) The Selected Alternative will not significantly affect public health or safety. On the contrary, serious existing public health and safety issues will be reduced by the Selected Alternative. Large wood structures in rivers can adversely impact recreational users, but the impacts have been minimized through the location and design of the structures. Warning signs will be installed to further mitigate the potential impact. Other temporary impacts during implementation will also be mitigated.
- 3) As analyzed in Section 3 of the EA, there will be no significant effects to unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas from the Selected Alternative. There are no known archeological resources, no prime farmlands, and no wild and scenic rivers within the project area. No loss of wetland areas will occur, and temporary impacts will be mitigated. There will be no adverse modification of critical habitat, and the work window will avoid critical salmonid spawning periods. The Selected Alternative is expected to benefit salmonid habitat and Tribal member access and cultural use of Thunder Field, an important access point to the Quillayute River, which is vitally important for the Quileute Tribe's ongoing fishing access, hunting, gathering, ceremonies, and recreation.
- 4) The effects on the human environment are not considered controversial for the Selected Alternative. Substantial interagency collaboration went into planning the Selected Alternative to meet the Quileute Tribe's long-term goals for actions on the Quillayute River. The EA was made available for public comment and the single response received did not provide substantive comments.
- 5) The environmental consequences of the Selected Alternative are not considered highly uncertain and do not involve unique or unknown risks. The restoration and bank stabilization techniques in the Selected Alternative have been used extensively throughout the Pacific Northwest and planned and designed by experienced agency professionals.

6) The Selected Alternative does not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about future considerations. NRCS considers funding similar projects for Tribes and other eligible applicants on a site-specific, individual basis, and the time an application for funding is submitted.

7) Particularly when focusing on the significant adverse impacts which NEPA is intended to help decisionmakers avoid, minimize, or mitigate, the Selected Alternative will not result in significant adverse cumulative impacts to the human environment as discussed in Section 3 of the EA. The Selected Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would add long-term beneficial effects to the overall adverse trends in geomorphic processes and socioeconomic considerations, overall neutral effects on water quality and plants, and mixed effects on soil and animals.

8) The Selected Alternative will not cause the loss or destruction of significant scientific, cultural, or historical resources as detailed in Section 3.4 of the EA and concurred by Washington Department of Archaeology and Historic Preservation (Appendix A.)

9) The Selected Alternative is not likely to adversely affect endangered or threatened species, marine mammals, or critical habitat as discussed in Section 3.3.1 of the EA. A draft Biological Assessment was submitted to the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) in May 2021. Concurrence on the effects determinations was received from the USFWS on September 13, 2021 (letter dated September 9, 2021), with a correction letter submitted on October 6, 2021; and concurrence was received from the NMFS on December 21, 2021.

10) The proposed action will not violate Federal, State, or local law requirements imposed for protection of the environment as noted in Section 1.2.3 of the EA. The major laws identified with the Selected Alternative include the Clean Water Act, Magnuson-Stevens Fishery Conservation and Management Act, Endangered Species Act, National Historic Preservation Act, and the Marine Mammal Protection Act. The Selected Alternative is consistent with the requirements of these laws.

**Measures to Minimize Environmental Harm**

All mitigation measures will be implemented for the Proposed Action Alternative at Olympic National Park to ensure resource protection, promote visitor enjoyment, and improve operational efficiency.

**Impact Mitigation Matrix**

<b>Resource</b>	<b>Selected Alternative Impacts</b>	<b>Measures to Avoid, Minimize or Mitigate Impacts</b>	<b>Responsibility</b>
<b>Land Resources Topography and Geomorphic Processes</b>	The Reach 3 project, in conjunction with past, present, and reasonably foreseeable future actions, including additional restoration projects planned elsewhere in the Quillayute River, will add long-term	<ul style="list-style-type: none"> <li>Minimize disturbance to geomorphically sensitive landforms (e.g., Quillayute Riverbanks) by installing fencing and flagging to restrict vehicles and equipment to designated routes.</li> <li>Use temporary bridges to span ecologically sensitive aquatic areas</li> </ul>	Project Manager, Chief Resources Management

<b>Resource</b>	<b>Selected Alternative Impacts</b>	<b>Measures to Avoid, Minimize or Mitigate Impacts</b>	<b>Responsibility</b>
	beneficial effects to the overall adverse trends in geomorphic processes.	(i.e., delineated wetland near Mora Campground) and minimize the impact of driving heavy equipment on the floodplain.	
<b>Land Resources Soils</b>	The proposed action will add additional adverse and beneficial effects on the overall soil condition trends within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Locate staging areas in previously disturbed or graveled areas to minimize disturbance to soil and vegetation, where possible.</li> <li>• Minimize the footprint of construction disturbance areas and vegetation removal by installing fencing and flagging to restrict vehicles and equipment to designated routes.</li> <li>• Install, inspect, and maintain erosion and stormwater control best management practices (BMPs).</li> <li>• Decompact and reseed disturbed areas with native species mix.</li> </ul>	Project Manager, Chief Resources Management
<b>Water Resources</b>	If other in-water work were to take place concurrently with Reach 3 construction (for example, dredging, jetty maintenance, and Mora Road bank stabilization), turbidity plumes could overlap in time and space and lead to temporary adverse effects and an overall neutral trend on water quality when combined with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Schedule in-water work to occur during periods of low river flow that typically occur between July and the end of September.</li> <li>• Isolate areas of in-water work with temporary cofferdams, installing cofferdams at low tide when possible, and dewatering to contain turbidity.</li> <li>• Monitor dewatering and rewatering rates to minimize sediment disturbance and to prevent fish stranding.</li> <li>• Install erosion and sediment control BMPs according to an approved ESC Plan.</li> <li>• Develop and implement a Spill Prevention, Control, and Countermeasure Plan and equip the project site with emergency cleanup supplies in case of oil or diesel leaks or spills.</li> <li>• Establish staging and refueling areas with secondary containment at least 150 feet away from any natural waterbody or wetland.</li> <li>• Immediately collect and dispose of any fuel, oil, or other contaminants leaked or spilled during construction in accordance with federal regulations.</li> <li>• Restore, stabilize, and revegetate disturbed areas prior to completion.</li> </ul>	Project Manager, Fisheries Biologist, Botanist
<b>Living Resources</b>	The disruption caused by the noise and visual disturbance	<ul style="list-style-type: none"> <li>• Restrict helicopter operations to occur over no more than 3 consecutive days,</li> </ul>	Project Manager, Fisheries

Resource	Selected Alternative Impacts	Measures to Avoid, Minimize or Mitigate Impacts	Responsibility
<b>Protected Species</b>	of multiple construction projects in the area will add temporary or short-term adverse effects to the overall neutral or adverse trends to nesting marbled murrelets when the proposed action is added to past, future, and reasonably foreseeable future actions.	<p>barring any unforeseen weather or emergency issues.</p> <ul style="list-style-type: none"> <li>• Designate flight paths that best avoid threshold distances to nearby or adjacent suitable habitat.</li> <li>• An informal survey was conducted by NPS and tribal biologists that determined that no suitable murrelet habitat nesting habitat is within the flight path.</li> <li>• Restrict construction activities to the approved work windows (work will begin no sooner than 2 hours after sunrise and will stop 2 hours before sunset) to minimize potential disturbance to marbled murrelets.</li> <li>• Plan helicopter operations to occur over the fewest number of days possible and maintain a flight path and elevation that avoids murrelet habitat to the extent practicable.</li> <li>• Maintain work areas in a clean condition, with no unsecured food or trash that will attract corvids or other nuisance species.</li> <li>• Additional conservation measures developed during consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) (see the decision document for the terms and conditions as provided by the USFWS and NMFS).</li> </ul>	Biologist, Wildlife Biologist, Botanist
<b>Living Resources Vegetation</b>	The proposed action will add little to no additional adverse effects on vegetation trends within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Delineate work area limits to protect existing vegetation and avoid disturbing trees larger than 24 inches diameter at breast height.</li> <li>• Coordinate with the NPS to establish an access route from Mora Campground that minimizes impacts to large trees in the floodplain.</li> <li>• Salvage existing topsoil and vegetation whenever possible.</li> <li>• Remove weeds prior to and/or following construction to ensure newly exposed soils do not become colonized by non-native plants.</li> <li>• Cut or crush vegetation rather than blade in areas that will remain</li> </ul>	Project Manager, Botanist



Resource	Selected Alternative Impacts	Measures to Avoid, Minimize or Mitigate Impacts	Responsibility
		<p>vegetated to increase the ability of native plants to recover.</p> <ul style="list-style-type: none"> <li>• Decompect and reseed or replant disturbed areas with native species mixes defined in the planting plan. To protect genetic integrity, revegetation propagules will be sourced from within the same habitats in the same watershed. The best sources for seeds and cuttings will be natural areas (i.e., not managed forests) within the lower Sol Duc-Calawah-Quillayute River watershed within 5 to 10 miles of the coast.</li> <li>• Pressure wash all equipment, including barges, prior to entering the construction area to prevent introduction of non-native species.</li> <li>• Inspect imported materials and equipment for noxious weeds and treat any areas where noxious weed species are identified following construction.</li> <li>• Source mineral materials from a quarry that has been certified weed-free by the staff of the Clallam County Noxious Weed Board.</li> </ul>	
<p><b>Living Resources</b> <b>Other Biological Communities</b></p>	<p>The Reach 3 project, in conjunction with past, present, and reasonably foreseeable future actions, including additional restoration projects planned elsewhere in the Quillayute River, will lead to long-term beneficial trends for biological communities, and salmonids in particular, through improved habitat conditions. The disruption caused by the noise and visual disturbance of multiple construction projects in the area could lead to temporary adverse effects to, but an overall neutral trend on, other biological communities.</p>	<ul style="list-style-type: none"> <li>• Delineate construction limits to protect existing vegetation and minimize noise and visual disturbance to wildlife.</li> <li>• Implement soil and erosion control BMPs to eliminate sediment discharges into waterways and wetlands.</li> <li>• Restrict construction activities to the approved work windows to minimize potential disturbance to marbled murrelets.</li> <li>• Plan helicopter operations to occur over the fewest number of days possible.</li> <li>• Minimize direct harm to fish by isolating the in-water work areas and relocate fish according to the BMPs established by resource management agencies.</li> <li>• Maintain work areas in a clean condition, with no unsecured food or trash that will attract corvids or other nuisance species.</li> <li>• Visually examine in-water equipment, such as the barge, for aquatic invasive species.</li> </ul>	<p>Project Manager, Fisheries Biologist, Wildlife Biologist, Botanist</p>

<b>Resource</b>	<b>Selected Alternative Impacts</b>	<b>Measures to Avoid, Minimize or Mitigate Impacts</b>	<b>Responsibility</b>
		<ul style="list-style-type: none"> <li>• Additional conservation measures developed during consultation with the USFWS and NMFS (see the decision document for the terms and conditions as provided by the USFWS and NMFS).</li> </ul>	
<b>Cultural Resources</b>	The proposed parking improvements, vehicle barrier, and fishing access, in addition to the recent Thunder Road improvements, will add long-term beneficial effects to the overall neutral trends on tribal member access and cultural use of Thunder Field, when combined with other past, present, and reasonably foreseeable future actions.	While there are no known archaeological resources within the project area, should an inadvertent discovery occur, the project will immediately stop, the Olympic National Park's archeologist will be contacted, and no further construction work will occur until cleared by the NPS archeologist who will coordinate with the Quileute Tribe.	Project Manager, Archaeologist
<b>Socioeconomic Conditions Employment and Income</b>	The overall trend of the Proposed Action Alternative on employment and income will be neutral for the temporary beneficial effects but will add to the short- and long-term beneficial trends on employment and income when combined with other past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Coordinate the construction schedule with the Quileute Tribe to allow tribal members access to fishing areas during key fishing seasons.</li> <li>• Incorporate Indian Preference Act (U.S.C. 25 §§ 472 and 473) terms into the construction contract language.</li> </ul>	Project Manager, Chief of Interpretation
<b>Socioeconomic Conditions Lifestyle and Cultural Values</b>	The proposed action will add long-term beneficial effects to the overall adverse trends on lifestyle and cultural value within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.	No mitigation for impacts to lifestyle and cultural values is proposed.	Project Manager, Chief of Interpretation
<b>Socioeconomic Conditions Community Infrastructure</b>	The Reach 3 project and its anticipated effect on geomorphic processes, in conjunction with additional efforts by the NPS to protect streambanks downstream of Reach 3, will add long-term beneficial effects to the overall beneficial trends on	<ul style="list-style-type: none"> <li>• Develop and implement a traffic control plan prior to implementation to ensure safe construction access on La Push Road (Washington State Highway 110 [WA-110]), Thunder Road, and Mora Road.</li> <li>• Develop and implement a traffic control plan prior to implementation to</li> </ul>	Project Manager, Chief of Interpretation

Resource	Selected Alternative Impacts	Measures to Avoid, Minimize or Mitigate Impacts	Responsibility
	community infrastructure when combined with other past, present, and reasonably foreseeable future actions.	<p>ensure safety for Mora Campground staff and public.</p> <ul style="list-style-type: none"> <li>• If funded by the National Resource Conservation Service (NRCS), permanent warning signs will be placed upstream of wood after implementation to ensure boater safety.</li> </ul>	
<b>Socioeconomic Conditions</b> <b>Environmental Justice</b>	The proposed action will add beneficial effects on the overall adverse trends on environmental justice within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.	Mitigation for impacts to environmental justice is not proposed.	Project Manager, Chief of Interpretation
<b>Resource Use Patterns</b> <b>Hunting, Fishing, Gathering</b>	If the proposed in-water work and use of a barge were to occur at the same time as dredging, spit repair, or Mora Road repair, the increase in vessel traffic in the lower Quillayute River could add a temporary adverse effect on the overall adverse trends on fishing activities; however, the proposed action will have a long-term beneficial effect on the overall adverse trend on fishing activities when combined with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Locate the large wood structures on the banks to minimize risk to boaters and provide sufficient unrestricted width across the river to allow tribal members to set typical fishing nets.</li> <li>• Coordinate the construction schedule with the Quileute Tribe to allow tribal members access to fishing areas during key fishing seasons.</li> </ul>	Project Manager, Chief of Interpretation
<b>Resource Use Patterns</b> <b>Recreation</b>	The proposed action will have temporary adverse effects that will have no effect on trends in recreation; however, the proposed action will add long-term beneficial effects to the overall adverse trend on recreation when combined with other past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Plan construction access routes and staging areas on the north side of the river and establish work timing limitations (8:00 a.m. to 6:00 p.m.) to minimize disruption to users of the Mora Campground.</li> <li>• Maintain vehicle access to NPS facilities and Mora Campground 24 hours per day, 7 days per week, with the exception of possible delays of no longer than 30 minutes to control traffic and minimize risks to public safety.</li> <li>• Limit helicopter operations to weekdays, during daylight hours, and for the minimum number of days necessary.</li> </ul>	Project Manager, Chief of Interpretation

Resource	Selected Alternative Impacts	Measures to Avoid, Minimize or Mitigate Impacts	Responsibility
		<ul style="list-style-type: none"> <li>• Develop the locations and designs of large wood structures to minimize safety risk to boaters and other river users.</li> </ul>	
<b>Resource Use Patterns Transportation Networks</b>	The proposed action will add a temporary adverse effect on transportation networks but will add overall long-term beneficial effects to the overall neutral or beneficial trends on transportation networks when combined with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Develop and implement a traffic control plan to ensure safe construction access on La Push Road (WA-110), Thunder Road, and Mora Road.</li> <li>• Coordinate with the Olympic National Park to minimize impacts to Mora Campground operation and NPS facilities maintenance during construction.</li> <li>• Notify the public of construction schedules and travel restrictions on Thunder Road.</li> </ul>	Project Manager, Chief of Interpretation
<b>Other Values Wilderness</b>	The proposed action will have temporary adverse effects on wilderness character within the project area and will not add to the overall adverse trend on wilderness character when considered in conjunction with past, present, and reasonably foreseeable future actions.	Mitigation for impacts to wilderness is not proposed because the helicopter flight paths have been planned to minimize impacts and no flights will occur over wilderness.	Project Manager, Chief of Interpretation
<b>Other Values Noise and Light</b>	If conducted concurrently with the Reach 3 project, traffic related to the U.S. Army Corps of Engineers (USACE) navigation channel maintenance and bank protection measure construction along Mora Road will result in a temporary increase of noise within Reach 3 and in adjacent areas and will have a neutral effect on the overall adverse trends on noise and light when combined with past, present, and other reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Restrict night work and observe campground quiet times.</li> <li>• Restrict helicopter operations to occur over no more than 3 consecutive days, barring any unforeseen weather or emergency issues.</li> </ul>	Project Manager, Chief of Interpretation
<b>Other Values Visual</b>	The proposed action will add beneficial effects on the overall beneficial trends on visual resources within the project area when considered	<ul style="list-style-type: none"> <li>• Stabilize, reseed, and replant disturbed areas, including large wood structures, to promote revegetation and minimize visual incongruities.</li> </ul>	Project Manager, Chief of Interpretation

<b>Resource</b>	<b>Selected Alternative Impacts</b>	<b>Measures to Avoid, Minimize or Mitigate Impacts</b>	<b>Responsibility</b>
	in conjunction with past, present, and foreseeable future actions.		
<b>Other Values Public Health and Safety</b>	The proposed action will add long-term beneficial effects as well as short- and long-term adverse effects to the overall beneficial trends on public health and safety when combined with past, present, and reasonably foreseeable future actions.	<ul style="list-style-type: none"> <li>• Develop a safety plan for helicopter operations that will be approved by NPS prior to implementation.</li> <li>• Plan helicopter operations to occur over the fewest number of days possible.</li> <li>• If funded by the NRCS, place permanent warning signs upstream of wood after implementation to ensure boater safety.</li> <li>• Develop the locations and designs of large wood structures to minimize risk to the safety of boaters and other river users.</li> </ul>	Project Manager, Chief of Interpretation
<b>Other Values Indian Trust Assets</b>	The proposed action will add long-term beneficial effects on the overall beneficial trends on Indian Trust Assets when considered in conjunction with past, present, and foreseeable future actions.	Mitigation for impacts to Indian Trust Assets is not proposed.	Project Manager, Chief of Interpretation

### **Public Involvement**

The EA (Tetra Tech 2021) was posted on the NPS website ([parkplanning.nps.gov](http://parkplanning.nps.gov)) for review and comment, and a press release was sent out to NPS’s mailing list, which included all local and regional media outlets, although notification of the open comment period appeared in only two media outlets (the Forks Forum, and Public Now). An external (public) comment period was open from July 19 through August 22, 2021. One piece of correspondence was received. No public meetings were held during the comment period. The Quileute Tribe has hosted monthly stakeholder meetings since June 2020. The group known as the Quillayute River Restoration Working Group includes representatives from the Bureau of Indian Affairs (BIA), NPS, NMFS, NRCS, USACE, U.S. Coast Guard (USCG), Washington Department of Fish and Wildlife (WDFW), Federal Highways Administration (FHWA), and others.

The one piece of correspondence did not provide substantive comments and the questions asked were already addressed in the EA, therefore there is no response necessary.

### **Agency Consultation**

Several agencies have provided technical support to aid in addressing a variety of issues and impacts associated with the Reach 3 project. These agencies include the BIA, NPS, USFWS, NMFS, NRCS, USACE, USCG, WDFW, and FHWA. The following outreach and coordination actions have been completed or are underway:

### ***State Historic Preservation Office***

A Cultural Resources review was submitted to the Washington Department of Archaeology and Historic Preservation in June 2021. Consultation completed on September 15, with DAHP concurrence response of no historic properties affected.

### ***American Indian Tribes***

NPS consulted with the Quileute Tribe and BIA during the development of the Quillayute River Restoration – Reach 3 EA (Tetra Tech 2021).

### ***U.S. Fish and Wildlife Service and National Marine Fisheries Service***

Informal Endangered Species Act Section 7 Consultation began in May 2021, with the submittal of a draft Biological Assessment to the USFWS and NMFS. Concurrence on the effects determinations was received from the USFWS on September 13, 2021 (letter dated September 9, 2021), with a correction letter submitted on October 6, 2021; and concurrence was received from the NMFS on December 21, 2021. NMFS included three conservation measures, to include, 1) Avoid barge ground-out to minimize potential for sediment releases and temporary reduction of benthic prey communities; 2) Minimize the loss of riparian vegetation as much as possible in order to maintain ecological community and support prey base; and 3) Minimize sediment runoff from restoration areas as much as possible by stabilizing exposed soils in excavated floodplain channels with gravels and/or native grass seed. Measures 2 and 3 are included in the EA.

In regard to measure 1, the IDT believed this request to be unnecessary and potentially more harmful than allowing the barge to ground out for a series of tides. The barge landing sites are at the upper extent of the tidal influence which means the amount of time the barge can stay at the location would be limited. Therefore, it is likely that multiple trips would be required, each with associated risk and impacts. While the proposed landing locations are tidally influenced, we wouldn't describe the substrate as "intertidal". That is, it is not covered with marine species (like mussels, barnacles, etc.) that would be damaged or destroyed by the barge being allowed to settle in place. At worst, there may be mortality of benthic insects in the landing area, which would recover quickly over the course of the summer.

In response, NMFS had noted it would be okay to skip the conservation recommendation about avoiding barge ground-out, also stating that NMFS agrees with our reasoning that allowing the barge to ground out for a series of tides would minimize effects to essential fish habitat (EFH).

Therefore, we agree to NMFS recommended conservation measures 2 and 3, which are already addressed in the EA and this FONSI. In regard to the first measure, during the unloading and reloading of the barge, efforts will be taken to minimize the area of substrate disturbance associated with the use of a barge (i.e. minimal trips and landings, ensure barge is securely anchored, etc.), as this would have lesser impacts than multiple barge trips up and down the channel.

### ***Natural Resources Conservation Service***

NRCS provided the following assistance to the Quileute Tribe: An erosion study (NRCS 2015), engineering review of hydrologic modeling, risk assessment, conceptual engineering design, and preliminary engineering design. In addition, the NRCS provided review and comment on consultation documents related to Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act.

**U.S. Army Corps of Engineers**

A Joint Aquatic Resources Permit Application (JARPA) was prepared and has been submitted to the USACE and the U.S. Environmental Protection Agency (EPA). Pre-filing notifications for Section 401 Water Quality Certification were submitted to the EPA and the Washington State Department of Ecology (Ecology) on January 21, 2021 and March 16, 2021, respectively. A pre-filing meeting occurred with EPA on January 28, 2021. On May 21, 2021, Ecology decided to take No Further Action. On July 29, 2021, the JARPA was formally submitted to the USACE. The formal request for Section 401 Water Quality Certification was submitted to the EPA on August 6, 2021. Currently, the Section 401 Water Quality Certification timeframe for issuance is 120 days from August 6, 2021.

**Finding**

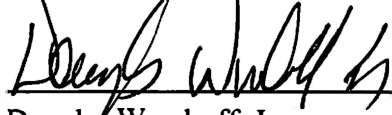
On the basis of the information contained in the EA (Tetra Tech 2021) as summarized above, the NPS, BIA, and NRCS have determined that implementing the Proposed Action Alternative is not a major federal action nor is it an action without precedent or similar to an action that normally requires an EIS. The conclusions of non-significance are supported by the conservation planning and environmental impact analysis completed and the capability of listed mitigation measures to reduce or eliminate impacts. There will be no adverse effect to cultural or historical resources; and there are no significant impacts. This determination also included due consideration of the minor nature of agency and public comments.

Therefore, in compliance with the National Environmental Policy Act, an EIS will not be prepared, and the selected project may be implemented immediately.

**References**

- NRCS (Natural Resources Conservation Service). 2015. Quillayute River Reach Assessment: Assessment of River Reach Form, Pattern, Trend, Streambank Erosion, and Channel Succession.
- Tetra Tech. 2021. Quillayute River Project: Environmental Assessment. Prepared for Quileute Natural Resources, La Push, WA. July 2021.

**Recommended:**



Douglas Woodruff, Jr.  
Chairman, Quileute Tribal Council  
Quileute Tribe

1-6-22

Date

**Recommended:**

GREGORY MASTEN Digitally signed by GREGORY MASTEN  
Date: 2022.01.06 14:06:28 -08'00'

Gregory Masten  
Superintendent, Olympic Peninsula Agency  
Bureau of Indian Affairs

Date

**Approved:**

**ROYLENE COMES AT NIGHT** Digitally signed by ROYLENE COMES AT NIGHT  
Date: 2022.01.10 11:57:54 -08'00'

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**Roylene Comes at Night** **Date**  
**Washington State Conservationist**  
**Natural Resources Conservation Service**

**Recommended:**

**LEE TAYLOR** Digitally signed by LEE  
TAYLOR  
Date: 2022.01.19 15:54:51  
-08'00'

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**Sarah Creachbaum** **Date**  
**Superintendent**  
**Olympic National Park**

**Approved:**

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**Frank Lands** **Date**  
**Regional Director, National Park Service**  
**Interior Regions 8, 9, 10, and 12**



**Attachment A: Errata to the Environmental Assessment**

**Attachment B: Determination of Non-impairment**

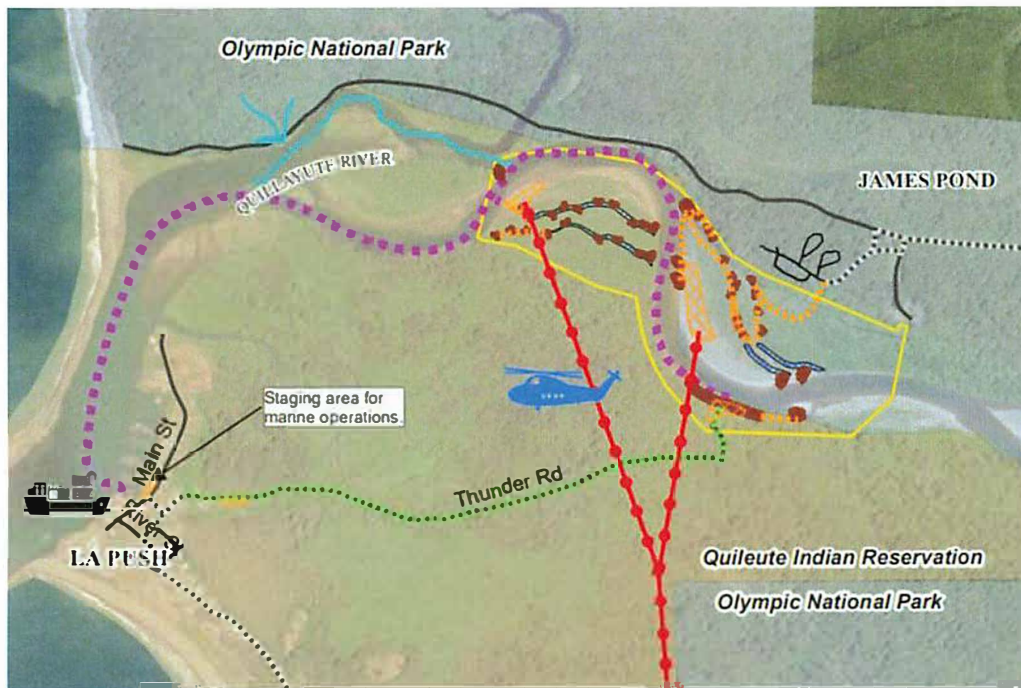
## Attachment A: Errata to the Environmental Assessment

The following corrections apply to the Quileute Tribe Quillayute River Restoration – Reach 3 Environmental Assessment (EA) issued on July 19, 2021. Changes to the EA text are identified by their corresponding page number in the document’s original published edition. Underlined text is added, strike-through text is deleted.

### Page 2-9 – Figure 9, in regard to Marine Access

Given recent storm activity and subsequent shifting of the river channel since the completion of the project, just ahead of finalizing the FONSI, an alternative path for the barge has been determined. Figure 9 still applies with exception of the change for the new path for the barge. In Figure 9a below, the purple dashed line is the original route, the aqua line is the new route.

Figure 9a: Refined barge route



## Attachment B: Determination of Non-impairment

### DETERMINATION OF NON-IMPAIRMENT

#### Introduction

The National Park Service (NPS) *Management Policies 2006* (section 1.4) requires an analysis of potential effects to determine whether the Selected Alternative would impair a park's resources and values. The fundamental purpose of the national park system, established by the *Organic Act* and reaffirmed by the *General Authorities Act*, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the NPS the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park. That discretion is limited by the statutory requirement that the NPS must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS *Management Policies 2006*). Whether an impact meets this definition depends on the particular resources that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the trends in the effects of the impact in question and other impacts not directly related to this project.

An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. Impairment may result from visitor activities, NPS administrative activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park. The description of the park's purpose and significance is found below and is subject to the no-impairment standard.

## **Description of Park Purpose and Significance**

### ***Purpose of Olympic National Park***

Olympic National Park was “set apart as a public park for the benefit and enjoyment of the people” (35 Statute 2247, June 29, 1938). According to House Report 2247 (April 1938), the purpose of the park is to:

...preserve for the benefit, use, and enjoyment of the people, a large wilderness park containing the finest sample of primeval forests of Sitka spruce, western hemlock, Douglas fir, and western red cedar in the entire United States; to provide suitable winter range and permanent protection for the herds of native Roosevelt elk and other wildlife indigenous to the area; to conserve and render available to the people, for recreational use, this outstanding mountainous country, containing numerous glaciers and perpetual snow fields, and a portion of the surrounding verdant forests together with a narrow strip along the beautiful Washington coast.

### ***Significance of Olympic National Park***

- Olympic National Park protects several distinctly different and relatively pristine ecosystems that provide both ecological and scenic diversity to the Olympic Peninsula, ranging from wild Pacific coast and islands to densely forested lowlands to the glacier-crowned Olympic Mountains. Views of the mountain range define the landscape for great distances in all directions, and the rugged beauty of the coastline and verdant grandeur of the rain forest have inspired people for generations.
- The ecosystems protected within Olympic National Park contain a unique array of habitats and life forms resulting from thousands of years of geographic isolation, along with extreme gradients of elevation, temperature, and precipitation. More than a dozen animals and plants on the Olympic Peninsula exist nowhere else in the world, and the park is key to maintaining the populations of these taxa.
- Olympic National Park contains some of the last remaining undisturbed, contiguous aquatic habitat throughout the range of several west coast fish species. The park protects 12 major river basins, more than 3,500 miles of rivers and streams, more than 300 high mountain lakes, and 2 large lowland lakes. As a consequence, the park is entrusted with the stewardship of numerous unique stocks of Pacific salmonids and other native freshwater fish species. Salmon are a keystone species of the park’s forest and aquatic ecosystems and are deeply woven into the cultural fabric of the Pacific Northwest.
- One of the largest wilderness areas in the contiguous United States is designated within Olympic National Park. By today’s wilderness quality scale, the Daniel J. Evans Wilderness is superb. Few, if any, National Park Service areas in the contiguous United States can approach or surpass its near-pristine nature, grandeur, immensity, and variety of resources, which include glacier-covered mountains, subalpine lakes and meadows, extensive river valleys, old-growth coniferous forests, and the tremendously diverse wild Pacific coastline. The wilderness character of these lands is of inestimable value and among the most precious of the region’s resources.
- Olympic National Park contains the finest remaining stands of old-growth temperate coniferous forest in the contiguous United States, including one of the finest remaining examples of temperate rain forest in the United States. These extensive forests of ancient

and immense trees provide important habitat for complex communities of plants and animals, including a number of imperiled species.

- The Olympic rocky intertidal community is considered to be one of the most complex and diverse shoreline communities in the United States. Olympic National Park includes about 1,400 square miles of intertidal, island, and shoreline habitat and contributes to a large protected landscape of coastal and ocean habitats, including approximately 64 miles of coastline, 52 of which are along designated or potential wilderness.
- Olympic National Park is home to the largest population of Roosevelt elk in its natural environment in the world. Decades of protection from human harvest and habitat manipulation have not only sustained high densities of elk, but have also preserved the natural composition, social structure, and dynamics of this unique western forestland subspecies of elk.
- Olympic National Park manages a variety of cultural resources, from ancient village sites to historic structures, which retain local, regional, or national significance. Eight federally recognized tribes (the Port Gamble S’Klallam Tribe, Skokomish Indian Tribe, Jamestown S’Klallam Tribe, Lower Elwha Klallam Tribe, Makah Tribe, Quileute Nation, Hoh Tribe, and Quinault Indian Nation) have, since time immemorial, sustained strong ties to the Olympic Peninsula and what is now the park. Hundreds of archeological and ethnographic sites attest to more than 12,000 years of continuous use and connection to the park landscape. Park resources continue to provide material, spiritual, and cultural sustenance to contemporary descendants as they have for millennia.
- The park serves as a recreational “backyard” for millions of people in the greater Puget Sound and Olympic Peninsula regions, in addition to attracting recreating visitors from across the nation and world.

### **Impairment Determinations for the Proposed Action Alternative**

Some elements of the environment were eliminated from further consideration due to either their lack of presence within the project area or the project having no effect or no noticeable effect on these elements. These include agriculture, mineral extraction, and paleontological resources. After dismissing the above topics, topics remaining to be evaluated for impairment include land resources, water resources, living resources, cultural resources, socioeconomic conditions, resource use patterns, and other values. These topics are discussed below.

#### ***Land Resources***

##### **Topography and Geomorphic Processes**

The Reach 3 project lies within the broad Quillayute River Valley, approximately 2 river miles from its terminus at the Pacific Ocean and immediately upstream from the confluence of the Dickey River. The width of the Quillayute River at this location during a 1-year recurrence flow is approximately 600 feet, and water levels and velocities are affected by a muted tidal signal. The channel has migrated back and forth across the valley for millennia, resulting in a relatively flat topography of the floodplain terrace with depressional areas that provide evidence of historic channel alignments. Topographic features within Reach 3 include two meander bends of the Quillayute River, the laterally migrating riverbanks and point bars, the forested floodplain, and several tidally influenced sloughs. Portions of the riverbank at Thunder Field are experiencing lateral bank erosion and have been identified by the Natural Resources Conservation Service

(NRCS) to meet the definition of the following resource concern: bank erosion from streams, shorelines, or water conveyance channels.

Changes in topography would occur from construction and the cut and fill associated with large wood structures and floodplain channels. These constructed features would be located to 1) protect against erosion and lateral migration of the banks, 2) improve fish habitat by initiating pool scour or gravel aggradation in different areas, and 3) improve fish passage at low flow. The structures would mimic the presumed natural conditions in this reach of the Quillayute River to restore geomorphic processes, create habitat, and help restore natural hydrologic function. Therefore, the effects to site-scale topography would lead to long-term benefits for river processes, fish populations, and the tribe.

The Reach 3 project, in conjunction with past, present, and reasonably foreseeable future actions, including additional restoration projects planned elsewhere in the Quillayute River, would add long-term beneficial effects to the overall adverse trends in geomorphic processes.

### Soils

Soil surveys on the Quileute Reservation identified 17 soil types or soil complexes (NRCS 2016a). Soil data for the NPS land within the area are not available because it has not been surveyed, but soils are assumed to be similar to those on the reservation side of the river. Soil complexes include two or more dissimilar components occurring in a regularly repeating pattern (NRCS 2016b). In the Thunder Field area, four different soil complexes, made up of six different soil series, were identified. These soil series included the Queets, Hoh, Aabab, Nuby, Conquille, and Typic Humaquepts. Soils along Thunder Road consist primarily of the Hoh-Aabab complex and the Aabab-Nuby complex. These soil complexes are mucky-mineral depressions on either intermediate or higher river terraces. A soil profile of the riverbank at Thunder Field consisted of sandy silt and silty sand within the upper 5.5 feet, with a layer of dense, well-graded fine gravel below 5.5 feet depth (Tetra Tech 2020a). This stratification is consistent with alluvial floodplain deposits that would be expected at the site. Four of the five soil types mapped within the area have at least a partial hydric component (NRCS 2020). However, field investigations performed during a wetland delineation of Reach 3 determined that most of the soils had a very high sand content and failed to meet hydric criteria (Tetra Tech 2020b).

Under the Selected Alternative, localized impacts to soils would occur during construction from the use of heavy equipment. Excavation associated with the large wood structures and floodplain channels would displace the top several feet of soil and alluvium in those locations. Driving heavy equipment on unpaved temporary access routes across the floodplain to clear vegetation, haul materials, and access the construction areas would result in compaction of soils along these routes. Further effects to soils could occur if soil disturbance and vegetation removal result in erosion. However, the final design would include best management practices (BMPs) for limiting soil exposure during construction, and the contractor would be responsible for developing and implementing an erosion and sediment control plan and decompacting and revegetating the work areas.

The proposed action would add additional adverse and beneficial effects on the overall soil condition trends within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.

## ***Water Resources***

Annual precipitation in the Quillayute River drainage averages 105 inches near the coast and 120 inches in the headwaters (NOAA 2021), with most of the precipitation occurring in fall and winter. The upper elevations are characterized by heavy precipitation with snow accumulation in winter months. Hydrologic modeling results indicate the 1-year recurrence flow event in the Quillayute River is 39,381 cubic feet per second and the 100-year event is 131,500 cubic feet per second (Tetra Tech 2020a). Flooding is common in Reach 3 and downstream in the village of La Push and is often exacerbated by a combination of high river flow and high tidal conditions. Surface water from the Reach 3 floodplains either infiltrates or flows into the Quillayute River and then to the Pacific Ocean. In some years, late summer low flows in the mainstem of the Quillayute River have been identified as a limiting factor for upstream fish migration (NOAA 2016).

Water quality monitoring by the Washington State Department of Ecology in tributaries to the Quillayute River, including the Dickey, Bogachiel, and Sol Duc rivers, found water quality impairments in portions of these tributaries (QNR 2017). In the Dickey River, temperature and bacteria were listed as major impairments in multiple reaches while pH and dissolved oxygen were listed as minor concerns. In the Bogachiel River, temperature was listed as a major impairment in multiple reaches while dissolved oxygen and bacteria were listed as minor impairments. In the Sol Duc River, temperature and pH were listed as major impairments in multiple reaches while dissolved oxygen and bacteria were listed as minor impairments.

The Quileute Natural Resources also monitored water quality in the Quillayute Basin between June 2012 and June 2019, compiling temperature, pH, dissolved oxygen, and turbidity measurements at several sites, which included Thunder Field starting in 2018 (QNR 2019). Average monthly water temperature at Thunder Field varied between approximately 5 and 15 degrees Celsius throughout the year. Average monthly dissolved oxygen levels varied between 8.5 and 11.0 milligrams per liter and were inversely correlated with temperature. Average monthly pH levels varied between 6.5 and 7.2, and average monthly turbidity levels were low throughout the year, never exceeding 10 nephelometric turbidity units.

Under the Selected Alternative, construction activities have the potential to cause temporary impacts to water quality. Excavation and fill of the stream bed, banks, and floodplain could lead to localized increases in turbidity when those areas are re-wetted. The use of a barge and heavy equipment near the river could increase the risk of hydraulic fluid leaks or fuel spills and pollution of runoff if proper containment precautions are not taken. Improvements to the parking area at the terminus of Thunder Road would direct runoff away from the river and lead to a long-term beneficial effect on water quality. The project would have no effect on the quantity and timing of river flows; however, it would result in alterations to the distribution of water across the floodplain during high-flow events. This redistribution of flows would lead to a long-term beneficial effect for aquatic habitat in Reach 3.

The project would require authorization for the Selected Action under the Clean Water Act Section 401 and water quality certificates from both the U.S. Environmental Protection Agency and the Washington State Department of Ecology. The contractor would operate according to an approved Spill Prevention, Control, and Countermeasure Plan and BMPs would be implemented by the contractor to minimize the risk of adverse effects to water quality. These authorizations



have been applied for in 2021, and the project would not be implemented prior to these approvals.

If other in-water work were to take place concurrently with Reach 3 construction (for example, dredging, jetty maintenance, and Mora Road bank stabilization), turbidity plumes could overlap in time and space and lead to temporary adverse effects and an overall neutral trend on water quality when combined with past, present, and reasonably foreseeable future actions.

### ***Living Resources***

#### **Protected Species**

The only species listed as threatened or endangered under the ESA that may be affected by the project is the marbled murrelet (*Brachyramphus marmoratus*). Designated critical habitat for marbled murrelet does not exist in the affected Reach 3 area; however, a predictive habitat model based on remote sensing data suggests that certain areas of the nearby floodplain forest may contain characteristics that are considered suitable for murrelet nesting (Raphael et al. 2016). A recent survey of the project site conducted by Quileute Natural Resources and NPS biologists on May 26, 2021, determined that the area was unlikely to provide suitable nesting habitat due to the forest structure and a high corvid population density (S. Gremel, Olympic National Park wildlife biologist, personal communication). A Biological Assessment (Tetra Tech 2021) has been prepared to initiate informal ESA Section 7 consultation with the U.S. Fish and Wildlife Service regarding the potential effects of the project on marbled murrelet.

Northern spotted owl (*Strix occidentalis caurina*) surveys last conducted in 2004 observed a nest within 1 mile from the site, but there has been no spotted owl activity documented since the early 2000s (USFWS 2017). None of the salmonids using the Quillayute River drainage are ESA-listed.

Bald eagles (*Haliaeetus leucocephalus*) may occur near Reach 3, but there are no eagle nests within proximity to where construction would occur (Rasmussen 2016).

The riverine habitat is considered essential fish habitat (EFH) for salmon and is therefore protected under the Magnuson-Stevens Act. The National Marine Fisheries Service has confirmed that the Quillayute River is designated as EFH for both Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*O. kisutch*) and requires consultation. An assessment of potential effects on EFH was included in the Biological Assessment (Tetra Tech 2021) submitted for ESA Section 7 consultation.

Under the Selected Alternative, temporary adverse effects to protected species may occur. Construction activity would generate noise and disturbance in the area that could temporarily disrupt the distribution and behavior of marbled murrelet. Vegetation clearing required for staging areas, access routes, and large wood structures would result in an adverse effect to species that use those plant communities for habitat, though no clearing of marbled murrelet-suitable habitat is proposed under this project. In-water work could temporarily lead to adverse effects to water quality, which is a component of EFH. Conservation measures and BMPs implemented during construction would minimize these adverse effects, and Chinook and coho salmon are expected to be able to avoid the temporary disruptions due to project activities by moving to suitable habitats available nearby.



Over the long term, the Selected Alternative would have a beneficial effect on protected species and habitats affected by the project. The large wood structures and high-flow floodplain channels would improve the quality of EFH for both adult and juvenile salmonids. The alignment and cross-sectional geometry of the river would improve the ability for fish to migrate past the area at low flow, potentially increasing the number of adults that reach spawning grounds in the tributaries. Stabilizing the bank at Thunder Field would prevent the further erosion and undercutting of the more mature forested areas, preserving those habitats for species such as marbled murrelet that prefer large trees and multi-layer canopies.

The disruption caused by the noise and visual disturbance of multiple construction projects in the area would add temporary or short-term adverse effects to the overall neutral or adverse trends to nesting marbled murrelets when the proposed action is added to past, future, and reasonably foreseeable future actions. The Selected Alternative *would be unlikely to adversely affect* marbled murrelets and would have *no effect* on northern spotted owls. The project would also cause temporary adverse effect, and overall long-term beneficial effect, on EFH for Chinook and coho salmon due to construction along the channel margin and on the floodplain.

### Vegetation

Vegetation on the Reach 3 floodplain includes species native to the coastal temperate rainforests of the Olympic Peninsula as well as non-native invasive species common to the area. Overstory plants within these coniferous coastal forests include Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*). In the vicinity of Thunder Field, the forest consists of approximately 50-year-old hemlock stands with scattered Sitka spruce believed to be approximately 70 to 90 years old (Rasmussen 2016). In and around the Mora Campground and on the slopes east of Rialto Beach, older trees are present. The largest specimen of Sitka spruce in the campground measured 76 inches in diameter at breast height (DBH) and was estimated to be 350 years old. Other large Sitka spruce and western hemlock in the campground area were also estimated to be approximately 300 years old. Remnant stumps of large diameter western red cedar indicate the historic presence of these species prior to selective logging that occurred in the late nineteenth and early twentieth century (J. Coles, Olympic National Park botanist, personal communication).

Within the proposed construction footprint on the active Quillayute River floodplain, woody vegetation is predominantly red alder (*Alnus rubra*), vine maple (*Acer circinatum*), red osier dogwood (*Cornus sericea*), and willow (*Salix spp.*). Coastal rainforest understory consists primarily of salal (*Gaultheria shallon*), salmonberry (*Rubus spectabilis*), thimbleberry (*Rubus parviflorus*), red elderberry (*Sambucus racemosa*), red huckleberry (*Vaccinium parvifolium*), sword fern (*Polystichum munitum*), and deer fern (*Blechnum spicant*). Other native graminoids in the area include slough sedge (*Carex obnupta*), common rush (*Juncus effusus*), tufted hairgrass (*Deschampsia cespitosa*), spike bentgrass (*Agrostis exarata*), and blue wildrye (*Elymus glaucus*). The floodplain and adjacent riverbanks harbor significant infestations of non-native invasive plant species such as giant knotweed (*Polygonum spp.*), tansy ragwort (*Jacobaea vulgaris*), foxglove (*Digitalis purpurea*), purple loosestrife (*Lythrum salicaria*), English holly (*Ilex aquifolium*), English ivy (*Hedera helix*), Scotch broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus bifrons*), Canada thistle (*Cirsium arvense*), and reed canarygrass (*Phalaris arundinacea*). No threatened or endangered plants are known to exist within the area.

The Selected Alternative would have adverse impacts to some of the trees and other vegetation within the footprint of construction, staging, and access routes. Clearing and grubbing would occur in all areas identified for large wood structures, floodplain channel excavation, temporary access routes, and staging areas. Most of these locations are on the banks and active floodplain of the Quillayute River where vegetation consists primarily of shrub species and young trees. In areas where larger, more mature trees exist within the proposed excavation footprint of the pilot channels, trees up to 24 inches DBH would be tipped over, intact, and used in place to supplement floodplain wood supply. The total number of affected larger, mature trees would be verified in the field, but is anticipated to be fewer than 12. Trees larger than 24 inches DBH would be left undisturbed. Within the Mora Campground, access routes would utilize existing roads to minimize the need to create new roads or disturb vegetation. On the floodplain near the campground, access routes would be established to avoid large trees as much as possible. Following construction, exposed areas would be revegetated with native species according to the project planting plan. Monitoring and treatment of these areas is planned to prevent infestation with non-native invasive species. Over the long term, bank stabilization at Thunder Field across the river from Mora Campground would allow the existing vegetation communities to mature and provide a more complete mosaic of habitat types. Overall, the Selected Alternative would have a short-term adverse effect on vegetation where clearing and grubbing occurs, and a neutral effect over the long term as cleared and grubbed areas re-vegetate and existing vegetation communities mature.

The proposed action would add little to no additional adverse effects on vegetation trends within the project area when considered in conjunction with past, present, and reasonably foreseeable future actions.

#### Other Biological Communities

Biological communities present in and around Reach 3 are those associated with the Coastal Temperate Rainforest of the Olympic Peninsula. These include the fish and wildlife species discussed below and the vegetation discussed above.

Anadromous fish runs are a fundamental component of the coastal ecosystem. The Quillayute River is known as a major salmon-producing drainage and ranks second in Washington state for the greatest number of anadromous salmonid stocks (Smith 2005). Salmon use the river throughout the year, whether for spawning, rearing, or migration. While none of the stocks are listed under the ESA, the returns of wild origin fish have trended downward in recent decades and have been supplemented by hatchery programs.

Chinook (spring, summer, and fall runs) and coho salmon are addressed above in the Protected Species section. In addition to Chinook and coho salmon, chum salmon (*O. keta*), pink salmon (*O. gorbuscha*), sockeye salmon (*O. nerka*), steelhead (summer and winter runs) and resident rainbow trout (*O. mykiss*), coastal cutthroat trout (*O. clarkii*), and mountain whitefish (*Prosopium williamsoni*) all use the aquatic habitats provided by the Quillayute River and its tributaries. Other fish species that may occur infrequently in the Quillayute River include Pacific lamprey (*Entosphenus tridentatus*), eulachon (*Thaleichthys pacificus*), white sturgeon (*Acipenser transmontanus*), and green sturgeon (*Acipenser medirostris*). Olympic mudminnow (*Novumbra hubbsi*) are known to occur within James Pond, and may also occupy off-channel areas of the Quillayute River.

A wide variety of wildlife species can be encountered in the Quillayute River valley due to the undeveloped setting and the proximity of large tracts of protected forest habitat and the Pacific Coast. In this section, discussion of wildlife is limited to vertebrates (i.e., mammals, birds, reptiles, amphibians, and fish) and to those not already discussed in the Protected Species section.

Some of the more common mammals that may occur in or adjacent to Reach 3 include Roosevelt elk (*Cervus elaphus roosevelti*), coastal blacktail deer (*Odocoileus hemionus*), black bear (*Ursus americanus*), cougar (*Puma concolor*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), ground squirrel (*Sciurus spp.*), river otter (*Lontra canadensis*) and cottontail rabbit (*Sylvilagus spp.*).

Over 100 avian species have been observed at the nearby Mora area (eBird 2021). Some of the most common during the proposed June to September construction window include waterfowl, such as Canada goose (*Branta canadensis*), surf scoter (*Melanitta perspicillata*), common merganser (*Mergus merganser*), hooded merganser (*Lophodytes cucullatus*), various species of ducks, gulls, and cormorants, great blue heron (*Ardea herodias*), bald eagle (*Haliaeetus leucocephalus*), barred owl (*Strix varia*), belted kingfisher (*Megaceryle alcyon*), Steller's jay (*Cyanocitta stelleri*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), golden-crowned kinglet (*Regulus satrapa*), Pacific wren (*Troglodytes pacificus*), Swainson's thrush (*Catharus ustulatus*), American robin (*Turdus migratorius*), cedar waxwing (*Bombycilla cedrorum*), red crossbill (*Loxia curvirostra*), song sparrow (*Melospiza melodia*), and Wilson's warbler (*Cardellina pusilla*) (eBird 2021; USACE 2016). Reptiles and amphibians are also common, including garter snakes (*Thamnophis spp.*), salamanders (various spp.), newts (various spp.), and frogs (*Ranus spp.*) (F. Geyer, personal communication, December 19, 2016).

Under the Selected Alternative, in-water work may lead to temporary adverse effects to water quality, specifically turbidity and sediment released during re-wetting of isolated work areas and a risk of pollutant spills, which could in turn affect the quality of aquatic habitat and fish behavior in the area. Disruptions caused by barge travel and the isolation of construction work areas would also lead to a temporary adverse effect. Protocols to exclude fish from the in-water work areas frequently involve capturing and handling fish before releasing them in safe areas. While this activity is intended to reduce overall harm to fish within the area, this handling can lead to disturbance and injury to a small percentage of salvaged fish.

The Selected Alternative would also cause temporary adverse effects to terrestrial wildlife species. Construction activity would generate noise and disturbance in the area that could temporarily disrupt the distribution and behavior of wildlife. These activities would include barge and helicopter operation to and from the staging areas; the use of haul trucks, excavators, and pile drivers on the floodplain; and periodic use of other construction equipment such as pumps and chainsaws. Vegetation clearing required for staging areas, access routes, and large wood structures would result in temporary or short-term adverse effects to species that use those plant communities for habitat.

Conservation measures and BMPs implemented during construction would minimize these adverse effects, and terrestrial wildlife are expected to be able to avoid the temporary disruptions resulting from project activities by moving to suitable habitats available nearby.

The long-term effect of the Selected Alternative would be an incremental benefit to the ecosystems and biological communities in the drainage. The large wood structures and high-flow floodplain channels would improve the quality of habitat for both adult and juvenile salmonids. The alignment and cross-sectional geometry of the river would improve the ability for fish to migrate past the area at low flow, potentially increasing the number of adults that reach spawning grounds in the tributaries. Stabilizing the bank at Thunder Field would prevent the further erosion and undercutting of the more mature forested areas, preserving those habitats for species that prefer large trees and multi-layer canopies. Over the long term, the Selected Alternative would have a beneficial effect on wildlife, especially fish species, and those that feed on them.

The Reach 3 project, in conjunction with past, present, and reasonably foreseeable future actions, including additional restoration projects planned elsewhere in the Quillayute River, would lead to long-term beneficial trends for biological communities, and salmonids in particular, through improved habitat conditions. The disruption caused by the noise and visual disturbance of multiple construction projects in the area could lead to temporary adverse effects to, but an overall neutral trend on, other biological communities.

### ***Cultural Resources***

Thunder Field is an important access point to the Quillayute River, which is a resource vitally important for the Quileute Tribe's ongoing fishing access, hunting, gathering, ceremonies, and recreation. The proposed parking improvements, vehicle barrier, and fishing access, in addition to the recent Thunder Road improvements, would add long-term beneficial effects to the overall neutral trends on tribal member access and cultural use of Thunder Field, when combined with other past, present, and reasonably foreseeable future actions. The proposed action would have no impact on historic properties and would require no mitigation.

### ***Socioeconomic Conditions***

#### **Employment and Income**

The remote location of La Push and the Quileute Reservation, which are on the western side of the Olympic Mountains and far from major urban areas, limits the amount of job opportunities. Employment opportunities of the reservation include commercial fishing, working for the Quileute Tribe government, and working for tribal enterprises such as the Quileute Oceanside Resort. Tourism is an important driver of the local economy, with visitors drawn to La Push by the natural beauty of ocean beaches, forested coastline, and proximity to Olympic National Park. However, the seasonality of the tourist economy limits its contribution to the employment and income opportunities for residents. There are other opportunities outside of the reservation, such as jobs within the timber industry or the city of Forks (population 3,866 as of 2018; U.S. Census Bureau 2018).

Under the Selected Alternative, construction activities would cause a temporary adverse effect on access to Thunder Field and the Quillayute River and the ability to fish. The proposed use of Mora Road and the Mora Campground for access to the north side of Reach 3 would also disrupt the visitor experience and lead to a temporary adverse effect on tourism and the economic benefits it provides. Construction schedules would be coordinated with the Quileute Tribe's fishing seasons to minimize this interruption, and construction access routes would be coordinated with the Olympic National Park to minimize impact to users of the Mora

Campground. The construction work itself could benefit employment and income by hiring a local contractor and by incorporating Indian Preference Act (U.S.C. 25 §§ 472 & 473) terms into the contract language. The Quileute Tribe has estimated that construction of the project would create 16 weeks of full-time work for four construction laborers, one construction supervisor, six equipment operators, one habitat biologist, and one engineer. Hiring Quileute Tribal members for construction would lead to a short-term beneficial effect. Long-term benefits would accrue via improved access to the river for tribal fishermen, and via improved fish habitat and fish passage rates within the Quillayute River that would lead to increases in fish populations and better fishing opportunities. Therefore, the Selected Alternative would have a mix of temporary adverse effects to employment and income due to construction interruptions, short-term beneficial effects due to potential construction job opportunities, and long-term beneficial effects due to improved fishing opportunities.

The overall trend of the Selected Alternative on employment and income would be neutral for the temporary beneficial effects but would add to the short- and long-term beneficial trends on employment and income when combined with other past, present, and reasonably foreseeable future actions.

#### Lifestyle and Cultural Values

Quileute culture and lifestyle embodies values and aspects of the tribe's lifestyle before European settlers came into the area. Important aspects of Quileute culture include the language, community activities, and celebration of fishing, gathering, and hunting traditions that were essential for traditional livelihood.

The Quileute Tribe participates in activities that foster a sense of community, including storytelling, gift giving, dancing, drumming, singing traditional songs, carving, and long-distance paddling. Fishing is an important part of the community culture, and tribal members are taught to fish at a young age. Hunting game provides meat for subsistence and important ceremonies, such as funerals.

#### Community Infrastructure

The Quileute Public Works Department maintains the water, sewer, and stormwater utilities on the reservation. Quileute Public Works also provides waste management services and street services including signage, road maintenance, and coordination with the Bureau of Indian Affairs for larger roadway improvements. Electrical utility service is provided by the Clallam County Public Utility District. Telecommunications are provided by CenturyLink for landlines and Verizon for cell phones. Due to the remote coastal location and often challenging weather (namely, the major winter storms off the Pacific Ocean), utilities and infrastructure can be compromised. Road flooding and power outages may occur several times during the winter, and there are moments of interruptions to Internet service.

Under the Selected Alternative, construction activities would have a temporary adverse effect on the access to Thunder Road and Thunder Field. Construction traffic would temporarily increase disruptions to those using NPS infrastructure on the north side of the river. Over the long term, the Selected Alternative would increase the resiliency of infrastructure in La Push by reducing flood risk and improving accessibility and safety at Thunder Field through parking lot improvements, a vehicle barrier, and fishing access, resulting in a long-term beneficial effect to

community infrastructure. Vehicle access to NPS infrastructure would not be restricted during construction, with the exception of potential traffic control delays of no more than 15 to 30 minutes to ensure public safety. There would be no effect on facilities in the Mora area; however, a beneficial effect could accrue from reduced erosion along Mora Road downstream of the project.

The Reach 3 project and its anticipated effect on geomorphic processes, in conjunction with additional efforts by the NPS to protect streambanks downstream of Reach 3, would add long-term beneficial effects to the overall beneficial trends on community infrastructure when combined with other past, present, and reasonably foreseeable future actions.

### Environmental Justice

Environmental justice derives conceptually from the equal protection clause in the 14th Amendment to the U.S. Constitution. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population*, directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The Executive Order provisions also apply fully to programs involving Native Americans. With percentages of minority and low-income populations in the Quileute Reservation well in excess of Clallam County, it is concluded that there are both minority and low-income populations present in the Quileute Reservation.

Under the Selected Alternative, bank erosion at Thunder Field would be halted and access to the river would be improved, allowing tribal members to exercise treaty rights and access resources for ceremonial and subsistence purposes. Similarly, the Selected Alternative could alleviate erosive forces on the right bank downstream of the project and lead to a beneficial effect on Mora Road and the ability of tribal members to access reservation land on the north side of the river. Therefore, the Selected Alternative would have a long-term beneficial effect on the local minority and low-income populations.

### ***Resource Use Patterns***

#### Hunting, Fishing, Gathering

Olympic National Park was created in 1938 when consultation with treaty tribes was not required as it is today. In 1953, the coastal strip of land was added to the Olympic National Park through congressional action, and the existing Quileute Reservation became surrounded by Olympic National Park. Establishment of the boundary for the newly designated park lands led to a 50-year boundary dispute between the Quileute Tribe and Olympic National Park. In 2012, Congress passed Public Law 112-97 that settled the boundary dispute and led to limited treaty access to resources due to NPS's rules regarding harvest. Lands within the reservation, especially Thunder Field, became more important as a location to exercise treaty rights and harvest traditional resources for subsistence and ceremonial purposes. As part of the negotiated agreement, the tribe gave up its right to hunt in the Thunder Field area using firearms, which has limited the tribe's ability to hunt certain game. Thunder Field also provides an important access point for tribal fishermen to the Quillayute River, especially for those without motorized boats. It

also provides areas of more mature forest vegetation communities for gathering certain plant species.

Quileute tribal fishing seasons are managed by the tribe. Fishing seasons and other regulations are determined each year based on conditions and expected returns. The in-river gill net fishery typically operates year-round, with effort variable depending on season. For example, in 2020, gill net fishing at Reach 3 was open 3 days per week from April 6 to May 20, 2 days per week from May 25 to August 25, a half-day per week from August 31 to November 9, and 4.5 days per week between November 16 and December 11.

Recreational fishing on the Quillayute River and its tributaries is also important for non-tribal residents and visitors. Data for the level of use of Reach 3 by recreational fishermen are not available; however, winter steelhead creel surveys (WDFW 2021) demonstrate that bank and boat-based anglers are common throughout the Bogachiel and Quillayute rivers, at least during the steelhead season when surveys were conducted; for example, a total of 677 angler interviews were conducted between December 9, 2019 and March 25, 2020. Recreational fishing opportunities lead to direct benefits to the local economy by increasing visitation and supporting local guide companies.

Under the Selected Alternative, construction activities would create temporary disturbances in Reach 3 that may inhibit hunting, fishing, and gathering. Barge traffic on the lower Quillayute River could disrupt tribal fishing practices if it occurs during times when nets are set.

However, once constructed, the project would halt erosion at Thunder Field and maintain the existing forested areas over the long term that provide opportunities for hunting, fishing, and gathering. Improvements to fish habitat and to fish passage success during low flows would likely improve salmonid populations, which would lead to more opportunity for fishing success not only at Reach 3, but also throughout the drainage. These benefits would be realized by both tribal and non-tribal fishermen. Therefore, the Selected Alternative would have a long-term beneficial effect on hunting, fishing, and gathering.

### Recreation

The Quileute Reservation is adjacent to Olympic National Park on the northern, southern, and eastern boundaries. The Quileute Reservation and Olympic National Park both contain scenic and recreational attractions including forested lands, fishing, camping, hiking, sightseeing, viewing of marine mammals and birds, use of ocean beaches, surfing, and boating. Recreational amenities attract tourism to the reservation, and tribal enterprises such as the Quileute Oceanside Resort and the Quileute Harbor Marina provide a source of revenue for the local economy. For tribal members, Thunder Field provides access to the Quillayute River for many of these recreational amenities and activities.

Under the Selected Alternative, a temporary disruption to recreational users would occur during construction. During this time, there would be limited access to Thunder Field by tribal members due to the volume of construction traffic on Thunder Road. Over the long term, the project would lead to a beneficial effect on recreation at Thunder Field by protecting the area from further erosion, improving access to the river with improved walkable fishing access and improved parking area.

### Transportation Networks

The Quileute Reservation is connected to the regional transportation network via WA-110, which continues to the reservation boundaries and terminates in La Push. WA-110 connects to U.S. Highway 101 15 miles east of the reservation. Both U.S. 101 and WA-110 are two-lane highways and provide the only road access in and out of the reservation. Thunder Field is accessed through the lower village and Thunder Road. Reach 3 is also accessible from the north off of Mora Road, a spur of WA-110 that begins 5.6 miles away from La Push. Mora Road provides access to private land on the north side of the river and to Olympic National Park land adjacent to Reach 3 where the Mora Ranger Station, Mora Campground, and Rialto Beach are located. There is access to the campground from Mora Road, as well as a maintenance road. Mora Road also provides access to tribal land on the spit at the mouth of the Quillayute River. In July and August 2019, NPS traffic counts recorded about 8,900 and 17,500 vehicles entering the park on Mora Road, respectively, including staff, recreation, and non-recreation traffic (NPS 2021).

Under the Selected Alternative, construction activity would result in temporary disruption of the transportation networks as large trucks deliver equipment and materials to the staging areas. Use of the transportation network would follow a traffic control plan developed by the contractor and approved by the Washington State Department of Transportation and the Federal Highways Administration. Flaggers on La Push Road would regulate traffic during helicopter operations to ensure public safety. Thunder Road would be closed to non-construction-related traffic for approximately 1 month. Mora Road could benefit from decreased bank erosion, preserving access. Therefore, a temporary adverse effect would occur to the transportation network during construction, but no short-term or long-term effects are anticipated.

### ***Other Values***

#### Wilderness

The Reach 3 project lies partially within the Quileute Tribe's "Northern Lands," a 510-acre tract designated for conservation and partially within Olympic National Park. Proposed construction activities would not occur within designated wilderness; however, the coastal section of the Daniel J. Evans Wilderness is 0.2 mile to the north. While Reach 3 is generally undeveloped, it receives a moderate level of human use due to its proximity to the village of La Push and other recreational attractions such as Mora Campground and Rialto Beach.

Under the Selected Alternative, there would be temporary but no short-term or long-term effects to wilderness character. Noise generated by heavy-lift helicopters used for transporting materials to the Reach 3 project and from other construction-related activities such as the operation of heavy equipment and pile driving would have a temporary adverse impact on the following qualities of wilderness character: natural, undeveloped, and opportunities for solitude. Helicopter operations are anticipated to last approximately 3 days and pile driving would last several weeks. Therefore, the proposed action would have a temporary adverse effect on the natural, undeveloped, and opportunities for solitude qualities of wilderness character of a small portion of the nearby Daniel J. Evans Wilderness Area.



### Noise and Light

Reach 3 lies within undeveloped, forested land in the Quillayute River valley. However, noise and light from human activity are common in the area due to the relative proximity to La Push, Mora Road, and Mora Campground. Anthropogenic noise sources include automobiles, boat motors, and airplanes passing overhead. U.S. Navy jets, in particular, generate high levels of noise for short periods of time in this area. Nighttime light primarily comes from headlights from vehicle use on Thunder Road and Mora Road.

Under the Selected Alternative, construction activity would lead to a temporary increase of noise within the Reach 3 area. Vehicles, heavy equipment, chainsaws, pile drivers, and helicopters would generate noise while they are being operated during the day. These activities would be restricted at dusk and at dawn to minimize disturbance to marbled murrelets during nesting and fledging season. Night-time work would not be allowed, and quiet times between 10:00 p.m. and 6:00 a.m. would be observed for Mora Campground. Many factors determine how far away sound can be heard, including the source levels, the noise-absorbing characteristics of the site, and background sound levels. The forested nature of the site and surrounding areas would help to attenuate sound propagation, and the proximity of ocean surf may increase background sound levels on a regular basis. The City of Forks operates a small airport (airport identifier UIL) approximately 2.5 miles from Reach 3 and low-flying aircraft are not uncommon in this area; however, the heavy-lift helicopter proposed for this project would likely exceed the typical aircraft noise levels for a duration of approximately 3 days. Pile-driving activity, using either a vibratory driver or an impact driver, would be necessary for installing the timber piles elements of the large wood structures. Pile driving would occur over several weeks during the in-water work window. Therefore, construction activities that are part of the Selected Alternative would have a temporary adverse effect on noise levels in the local area.

### Visual

Reach 3 is in a wide section of the lower Quillayute River in an undeveloped forested part of the reservation and immediately adjacent to NPS lands. The construction area cannot be viewed from La Push; however, tribal fishermen, river users, campers at the Mora Campground, and travelers along Mora Road would have potential views of the construction area.

Under the Selected Alternative, small portions of Reach 3 would be cleared of vegetation and temporarily used for staging or access routes. These areas would be reseeded after construction activities have been completed. Excavated floodplain areas would also be cleared of existing vegetation but would eventually recolonize naturally with species that are appropriate for the conditions. Permanent impacts to visual quality would include the large wood structures. These features consist of engineered log jams that are designed to mimic the function of naturally occurring structures. Immediately after construction, these structures are anticipated to appear somewhat incongruous with the surrounding landscape, but over time, they would promote scour, deposition, and natural revegetation that would make them blend in and create visually appealing river features. Therefore, the Selected Alternative would have short-term adverse effects on visual resources in the immediate area but would result in a beneficial effect over the long term.

## Public Health and Safety

Tribal access to the Quillayute River at Thunder Field is currently impeded by the high, steep, eroding bank at the end of Thunder Road. The parking area is not maintained and has no barricade to keep vehicles from approaching too close to the unstable riverbank. Public access to Reach 3 on the north side of the river is possible only on foot through the Mora Campground; vehicle access to the river is possible upstream at Richwine Bar. On the river itself, there are very few log jams or other structures that extend into the river at normal flows, and thus, there are few hazards to boaters and other users of the river.

Under the Selected Alternative, the mainstem of the Quillayute River would be deflected away from Smith Slough and other relic channels at Thunder Field to reduce the risk of avulsion. Geomorphic changes at the Reach 3 project could also reduce erosion processes downstream, leading to a beneficial effect to safety on Mora Road. Improvements to the parking area, the new vehicle barrier, and walkable fishing access would reduce the hazardous conditions at Thunder Field while increasing access for tribal members. Large wood structures in the river would increase risk to fishermen, recreational boaters, and other river users by creating a potential for entanglement. This issue has been addressed in detail in a large wood risk assessment (Tetra Tech 2020c). The proposed large wood structures would not impede safe access to the Dickey boat launch.

## Indian Trust Assets

The Quileute Reservation includes 2,156 acres. The boundary with NPS land in Reach 3 was established recently in 2012 under Public Law 112-97 and involved a transfer of NPS land to the Quileute Tribe for the purpose of providing tsunami and flood protection. This area, known as the “Northern Lands,” is designated for conservation.

Under the Selected Alternative, the large wood structures and restoration features would be constructed both on trust land and on NPS land. The NPS has collaborated with the tribe on this project and no change in the current boundary would occur. The bank stabilization offered by the position of the proposed large wood structures would maintain the useable land area at Thunder Field. Thus, the Selected Alternative would have a long-term beneficial effect on Indian Trust assets.

## **Conclusion**

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent’s professional judgment that there will be no impairment of park resources and values from implementation of the Selected Alternative.

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