Draft Environmental Assessment

Bogachiel River Advance Measures
Flow Deflection Groins and Containment Berm
Clallam County, Washington
October 7-22, 2000

June, 2003

US Army Corps
of Engineers®
Seattle District

Draft October 7-22, 2000 Bogachiel River PL 84-99 Emergency Advance Measures Project Environmental Assessment

Responsible Agency: The responsible agency for the PL 84-99 Emergency Advance Measures project is the U.S. Army Corps of Engineers, Seattle District.

Abstract:

This Environmental Assessment (EA) evaluates the environmental effects of the October 7 – 22, 2000 emergency construction of a containment berm and flow deflection groins to allay imminent flooding danger and erosion potential to State Route 110 at the Bogachiel River near La Push, Washington. The U.S. Army Corps of Engineers, Seattle District, performed the work under the *advanced measures* emergency authority of Public Law 84-99 (33 USCA 701n). *Advanced measures* are activities performed prior to flooding or flood fighting to protect against loss of life and damages. Advance Measures projects are considered temporary and require the project work to be incorporated into permanent features at the site at a later date or otherwise removed. This authority also allows for *after-the-fact* environmental documentation when emergency situations do not permit enough time for the completion of the necessary environmental documents prior to construction.

The project constructed 6 flow deflection groins and a containment berm that is approximately 1,400 feet in length and up to 5 feet high. Woody material from on and off-site was also placed within and near the flow deflection groins. The work was not a major Federal action and did not significantly affect the quality of the human or natural environment. The Corps used best management practices to minimize potential adverse effects to aquatic and terrestrial resources.

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

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Comments due by: July 31, 2003

TABLE OF CONTENTS

List of Figures

List of Tables

1. INTRODUCTION

This document evaluates the environmental effects of the construction of a containment berm and flow deflection groins to allay imminent flooding danger and erosion potential to State Route 110 at the Bogachiel River near La Push, Washington. The U.S. Army Corps of Engineers (USACE) with the Quileute Tribe as the local sponsor accomplished the work. The project was constructed October 7, 2000 to October 22, 2000. This project is authorized under the Advance Measures authority of Public Law 84-99, which requires the project work be incorporated into permanent features at the site at a later date or otherwise be removed. The USACE is currently investigating options for future projects that will incorporate the Advanced Measures (AM) project features into a permanent project at the site.

1.1 Location and Setting

The project is located on the right (westerly) bank of the Bogachiel River, approximately 6 miles east of the settlement of La Push, Washington, within Clallam County. A location map can be found in Figure 1.

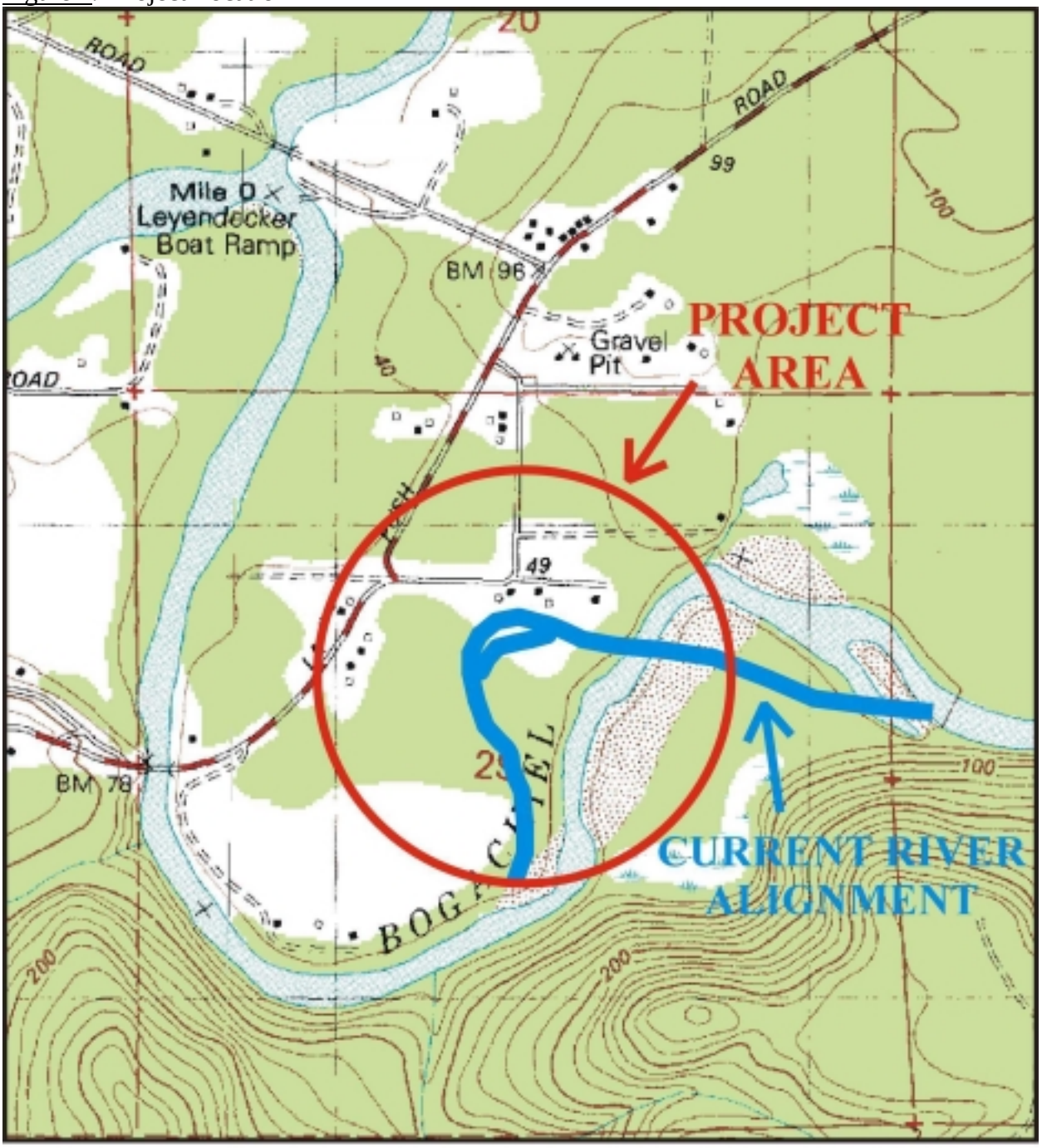
1.2 Background

The Bogachiel River eroded its right bank on an outside meander bend just upstream of the Highway 110 bridge near La Push, Washington. The erosion increased dramatically during the 1999/2000-winter season, causing severe damage and condemnation of a nearby home. The erosion potential threatened Highway 110 (Old La Push Road) and water lines that supply the Quileute Tribe in La Push. As a result of erosion in 1999/2000, the unmodified bank height was approximately 4-5 feet lower than in 1993. This resulted in the bank overtopping even during relatively minor floods. Floodwaters inundated farm, pasture and forest lands westerly for approximately one-half mile, to and across Highway 110 to a depth of up to 5 feet, continuing overland an additional one-half mile where it then reentered the river. In addition to the threat of continued, marked bank erosion, headcutting (Photo 2, Appendix B) was rapidly progressing westerly toward Hwy 110 from the initial breech of the riverbank. Without the completion of the emergency advanced measures, there was significant potential for the next overbank flooding to result in progressive headcutting and the destabilization of the roadway, public water lines and utilities.

The over-bank flooding cuts off the only practicable road access to the Quileute Reservation, the community of La Push, U.S. Coast Guard Station and a portion of Olympic National Park. There is no alternate land route available for emergency assistance. The river rises quickly, reaching flood stage without warning.

With no Corps assistance, bank erosion and headcutting would have continued, eventually reaching SR 110 and the water supply lines. In addition, floodwaters would have continued to inundate the road on a regular basis, isolating La Push and the Quileute Reservation. In the absence of an AM project, the Quileute Tribe and Clallam County would have been advised to pursue the recommended alternative with USACE assistance. Both Washington State Department of Transportation (WSDOT) and Seattle District discussed the situation with the Federal Highway Administration (FHWA). However, FHWA indicated that their emergency funding is depleted; and that this project does not meet their criteria for emergency assistance.

Figure 1. Project Location



Bogachiel River Advance Measures Flood Control Project Area,
Clallam County, Washington.
(Based on Quillayute Prairie, WA USGS 7.5 Quadrangle Map)

1.3 Project Purpose and Need

The purpose of this project was to prevent overtopping of the bank, arrest erosion, and to prevent headcutting of the river so as to protect SR 110 and the water line to La Push.

1.4 Authority

Public Law 84-99 (33 USCA 701n) authorizes the Corps of Engineers to provide advanced flood damage reduction measures. "Advanced Measures" (AM) are activities performed prior to flooding or flood fighting to protect against loss of life and damages. AM are supplemental to state, local, and community efforts rather than replacements for them. The declaration of a state of emergency or a written request by the governor is a prerequisite to furnishing AM. Quileute Tribal Chairman Russell Woodruff issued an emergency declaration for the situation on March 13, 2000. This March 13, 2000 Tribal declaration is attached as Appendix A, Page A-2.

AM projects are considered temporary and require the project work to be incorporated into permanent features at the site at a later date or otherwise removed. The USACE and the Quileute Tribe are currently investigating options for future projects that will incorporate the features of this AM project into a permanent project at the site.

2. DESCRIPTION OF THE ACTIONS TAKEN

The USACE constructed a berm, set back approximately 50 to 100 feet from the existing bank line. Three pairs of flow deflection groins were also constructed. The first set is located upstream of the eroding bank, and the second pair is located further downstream to deflect flow away from a newly formed scour hole. The third set is downstream of this location. The groins were set approximately 10 feet into the bank with a top width of 10 feet at bank elevation. Photo 5 in Appendix B shows an aerial photograph of the project as constructed.

The action area for the project extends from the project site downstream to the mouth of the Quillayute River and includes various areas such as staging areas and access roads.

The emergency project was approved and funded in August 2000. Construction was completed on October 22, 2000 at an approximate cost of $350,000. Equipment used was a hydraulic excavator, bulldozer, compactor and eight dump trucks.

Subsequent and future actions in relation to flooding and erosion problems along the Bogachiel River are not addressed in this report.

2.1 Federal Actions

2.1.1 Containment Berm

The project design included the construction of a berm set back approximately 100 feet from the existing bank line of the Bogachiel River, adjacent to Old La Push Road near the settlement of Three Rivers. The length of the berm is approximately 1,800 lineal feet elevation and constructed to equate preexisting 1993 bank elevation, determined to be 50 feet MSL. The height of the berm is approximately 5 feet, with a front slope of 2H: 1V and a back slope minimum of 4H: 1V. The top width is constructed at approximately 10 feet. Top and back slopes are armored with 18" minus riprap to lessen probabilities of scouring and failure from overtopping.

2.1.2 Flow Deflection Groins

Three pairs of groins were also constructed. The first set is located upstream of the eroding bank, and the second pair is located downstream to deflect flow away from a newly formed scour hole. The third set is also downstream. The groins were set approximately 10 feet into the bank with a top width of 10 feet at bank elevation, taper from the bank top width to a 3 feet top width. Each groin has a length equal to 25 percent to 40 percent of the wetted perimeter (approximately 45 feet). The groins were built with 4 to 6-foot rock and 36" minus riprap, intermixed with smaller riprap, to form a solid structure without significant voids. A rock apron using 36" minus riprap was also placed between each groin. Logs, selected on site, were placed between each pair of groins. (See Photo 4.)

2.2.2 Woody Debris Placement

During construction, woody material from on and off site was placed within/between the deflection groin structures. USACE and Washington Department of Fish and Wildlife personnel performed a visual survey of existing, on -site large, woody debris and jointly identified locations for placement. Woody material was also imported to the site so that up to three sound conifer logs were incorporated every 10 linear feet of groin waterward of the bankline.

3. NON-SELECTED ALTERNATIVES

Several alternative actions were considered before containment berm and flow deflection groins were selected. These alternatives include:

3.1 No Federal Action

This plan assumed that there would be no federal action to reduce flood damages and continued bank erosion along the Bogachiel River. In particular, it means that the Corps of Engineers would not build a project to reduce flood damages, nor would any other government agency step in to build a structural flood damage reduction project.

3.1.1 Effects of No Federal Action.

Without the project, bank erosion and headcutting would have continued, eventually reaching SR 110 and the water supply lines. In addition, floodwaters would have continued to inundate the

road on a regular basis, isolating the Quileute Reservation and La Push. There would be no change to present effects to fish and wildlife or their habitat from this plan. In the absence of an advance measures project, the Quileute Tribe and Clallam County would have been advised to pursue recommended alternative independently.

Impacts of the no action alternative also include:

- *Delays for emergency access to and from the Quileute, the community of La Push and portions of Olympic National Park*
- *Delays or unavailability from routine and emergency medical services (there are no medical services available in La Push).*
- *The U.S. Coast Guard would remain isolated in La Push during periods when State Highway 110 is flooded except for air and sea access.*
- *Loss of school attendance by students who reside in La Push (schools are located in Forks, WA).*
- *Loss of public transportation to and from La Push during regular periods of flooding.*
- *Temporary losses of access for the government and the public to a portion of Olympic National Park.*
- *Clallam County would continue to advise residents in La Push a impending flood, when known, and would offer emergency response when needed and when as available*
- *In the event that the erosion and/or head cutting bisects or severs State Highway 110, water supply to La Push would be cut-off.*
- *Very active erosion would continue on the bank, causing increased erosion and sedimentation to the river thereby decreasing water quality.*
- *Unknown debris, such as wrecked cars and other junk that are atop the eroding bank could enter the river resulting in hazards and water quality problems.*

3.1.2 Benefits and Costs of No Federal Action.

It is difficult to estimate a benefit-to-cost ratio for the no federal action plan. However, with this plan, the citizens of the Quileute Reservation and La Push area may still experience significant flooding of their sole access route, State Highway 110.

3.2 High-flow Channel with High Bank Restoration

This alternative would have provided a high-flow channel through the existing gravel bar on the opposite side of the channel. The gravel would have been removed and placed in the channel along the eroding bank. Access by the river to the current channel would be limited, forcing the majority of the flow through the new high-flow channel. A berm would have been built on the bank to reduce the frequency of overbank flooding. This alternative was eliminated because of environmental concerns of gravel movement, in-channel sediment deposition and adverse water quality effects, and potential fisheries impacts.

3.3 Bank Protection with Restoration of High Bank

Under this alternative riprap protection would have been placed along the eroding bank and a berm would be constructed along the length of the riprap to restore the elevation of the bank to the elevation of high ground on the upstream and downstream ends. This would halt the erosion as well as reduce the frequency of overbank flooding. This alternative was eliminated because it would require the importation of significantly more riprap material, thereby costing considerably more than the selected alternative while providing largely the same benefits. Detrimental environmental effects would be greater with this alternative than with the selected plan.

3.4 Raise and Protect State Highway 110

Under this alternative, State Highway 110 would be raised approximately 8 feet and riprap protection would be placed on the upstream side of the highway. This would require digging a trench approximately 18 feet deep at the base of the new roadway and filling it with riprap. This alternative was eliminated because of its high cost.

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Bogachiel River is one of the major rivers on the Olympic Peninsula. From its headwaters to it confluence with the Soleduck River, the Bogachiel is 51 miles in length. The upper portion is a pristine mountain river within Olympic National Park, with steep gradients, cascades, waterfalls, and rapids. The lower river is slower, wider and meanders through coastal forest with scattered agricultural and recreation development. The Bogachiel River has an outstanding anadromous fishery. Recreational boating opportunities exist on the lower river. Most of the Bogachiel River has excellent water quality, although clay banks along Lower River cause some discoloration through suspended sediment. The Bogachiel watershed is an important habitat for wildlife, including elk and bald eagles.

4.1 Action Area

The action area for the project extends from the project site downstream to the mouth of the Quillayute River, including various project needs such as staging areas and access roads.

4.2 Hydrology, Soils and Topography

Prior to construction of the project, the last flood in the area occurred on Dec. 15, 1999. During this flood, water overtopped the right bank of the Bogachiel flowing westerly, overtopped SR 110, and then reentered the Bogachiel River after traveling approximately ½ mile overland. A USGS stage gage on the Bogachiel River does not presently exist[1]. It should be noted that this area does not have a history of flooding at such a low frequency event. There are no known project effects on hydrology.

Topography at the site consists of primarily flat terrain on the northern bank of the river at the project, as the area is mostly alluvial deposit. On the south bank, a high and steep slope contains the river. Soil composition at the site is primary alluvial solids with various gravel deposits intermixed atop hardened mud. There were no known effects to soils that were significant.

4.3 Vegetation

The project site is located in a coastal upland forest/pasture. Vegetation at and in the vicinity of the project site include lady fern (*Athyrium fexix-femina*), and sword fern (*Polystichum munitum*) red-osier dogwood (*Cornus sericea*), Nootka rose (*Rosa nutkana*), salmonberry (*Rubus spectabilis*), Sitka spruce (*Picea sitchensis*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*), and Himalayan blackberry (*Rubus discolor*), Evergreen blackberry, (*Rubus laciniatus*), and a variety of native and non-native grasses. Most prominent at the project site are, red alder (*Alnus rubra*), salmonberry (*Rubus spectabilis*) and Himalayan blackberry (*Rubus discolor*). Prior to construction and during the spring of 2000, large (up to 50" dbh) Sitka spruce (*Picea sitchensis*) were harvested, and this action was unrelated to the Federal action or this project; however, this action greatly exacerbated the erosion potential along the river at the project site.

Approximately one acre of young alder forest (dbh <8 inches) was cleared and one acre of mixed pasture/blackberry bramble was cleared for construction of the containment berm. The berm was hydro-seeded and the area covered by straw. Additionally, all cut alders were incorporated within or between the flow deflection groins on-site. Overall effects to vegetation were insignificant owing to the abundance of this sort of vegetation in the area.

4.4 Fish and Wildlife

The Bogachiel River supports several species of salmon and trout. Chinook salmon is the most important species to the Quileute Tribe. Trout species occasionally present are steelhead and cutthroat trout. The salmon species are the Chinook *(Oncorchynchus tshawytscha*), coho *(O. kisutch*), chum *(O. keta*), pink *(O. gorbuscha*), and sockeye *(O. nerka*).

The forests and pasture surrounding the project site along the Bogachiel River is frequented by a variety of wildlife species. Mammals include Roosevelt elk (*Cervus elaphus roosevelti*), American black bear (*Ursus americanus*), raccoon (*Procyon lotor)* Douglas squirrel

[1] The last gage on the Bogachiel River was removed after recording 4 years of data (1978-1981). A correlation of the Bogachiel River with the Calawah River was conducted to determine if the longer period of record for the Calawah River could be used for the Bogachiel River. Thirteen data pairs were used in the correlation of the two rivers and resulted in an R^2=0.8729, Calawah discharge = 0.8735*(Bogachiel discharge) + 3,592. This correlation is appropriate for use. With this correlation, the discharge on the Bogachiel for the Dec. 15, 1999 flood was estimated to be 15,350 cfs. This is approximately a 1.5-year event.

(*Tamiasciurus douglasi*), little brown myotis (*Myotis lucifugus*) and Columbia black-tailed deer (*Odocoileus hemionus*). Bird species could include bald eagles (*Haliaeetus leucocephalus*), marbled murrelets (*Brachyramphus marmoratus marmoratus*), and northern spotted owls *(Strix occidentalis caurina*), chestnut-backed chickadee(*Parus rufescens*).

Effects to fish and wildlife, if any, were temporary and primarily during construction. A decrease in sediment loading to the river by arresting or slowing of bank erosion likely has a positive effect to fish. Additional woody material added to the site also increased some fish habitat values. Overall effects, both adverse and favorable, are insignificant.

4.5 Threatened and Endangered Species

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

Table 1. Endangered Species in the Project Vicinity

Scientific Name	Common Name	Status
Haliaeetus leucocephalus	Bald Eagle	Threatened
Strix occidentalis caurina	Northern Spotted Owl	Threatened
Brachyramphus marmoratus marmoratus	Marbled Murrelet	Threatened

Information on known occurrences of endangered and threatened species in the project vicinity, and the impacts of the completed and proposed projects on these species are addressed in Appendix C, *Bogachiel River Advance Measures Project Biological Assessment*.

The bald eagle, marbled murrelet, and northern spotted owl are listed as threatened in Washington pursuant to the Endangered Species Act and can be found in coastal areas. These species were addressed in the BA dated August 22, 2000. A determination of no effect was mad for these listed species. The scope of work on this project did not change significantly since the BA was prepared; therefore, the determination of no effect to these listed species remained unchanged.

No anadromous fish runs in the Bogachiel River area are listed as threatened or endangered under the ESA. The Southwest Washington/Lower Columbia River ESU of the coho salmon and cutthroat trout are candidates for listing. This includes runs of this species in the Bogachiel River. The Washington Coast ESUs for Chinook salmon and steelhead have been evaluated, and listing is considered not warranted at present.

The closest bald eagle nest is about one mile from the project area so impacts from the project were not a concern to nesting behavior. These birds are diverse feeders and the Bogachiel River is not considered a primary foraging area for the nesting birds, so the project had no affect to bald eagles. Marbled murrelets have not been observed in the project area so the project did not affect murrelet foraging behavior. There is no suitable habitat for the northern spotted owl at of near the project site. The project had no known effect on northern spotted owls. Further detailed analyses of the species are contained in the referenced biological assessment.

4.6 Cultural Resources

There are no known cultural resources in the project area. On October 13, 2000, a Seattle District Corps of Engineers staff archeologist surveyed the project area. No archeological or historic sites were located in the area. In addition, the Quileute Tribe was contacted and they believe that there are no traditional properties in the project area. The proposed work as described had no impacts to cultural resources.

4.7 Water Quality

Water quality was not significantly impacted by construction activities. While a temporary increase in turbidity may have occurred during construction of the flow deflection groins, turbidity to the river over the long term will decrease owing to the reduction in bank erosion. The flow deflection groins decrease erosion, resulting in less sedimentation than occurred prior to completion of the project. During construction, no leakage or spills of hazardous materials occurred. Equipment did not enter the water and remained on dry ground at all times.

A Section 401 Water Quality Certification issued by the Washington Department of Ecology (Ecology No. Corps #BOG-1-00) was issued on October 6, 2000 for the project. Conditions of the certification include waterside debris removal, hydroseeding, large woody debris placement, and hazardous waste spill prevention and response measures.

The Clean Water Act Section 404(b)(1) evaluation for this project found that there were no significant adverse impacts to the aquatic ecosystem functions and values. Rather, it is expected that aquatic ecosystem functions and values may improve or stabilize over the long-term by this action.

4.8 Air Quality and Noise

Air quality meets the standards as set forth by the Washington Department of Ecology and was not permanently affected by the construction of the project. Noise was intermittent at the site and varied depending on the frequency of trucks arriving with the material and construction of the features. All noise factors were addressed for their effect on threatened and endangered species.

During construction, there was a temporary and localized reduction in air quality due to emissions from heavy machinery. These emissions did not exceed EPA's *de minimis* threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone) or affect the implementation of Washington's Clean Air Act implementation plan. Therefore, impacts were not significant.

Ambient noise levels increased slightly while construction equipment was operating. However, these effects were temporary and localized, and occurred only during daylight working hours. As a result, impacts were insignificant.

4.9 Utilities and Public Services

Failure to stabilize the erosion could have had a serious impact La Push water supply pipeline, which lies beneath and next to SR 110. Construction vehicles associated with the project may have disrupted local traffic. Such a disruption would have been temporary and highly localized; therefore impacts would have been insignificant.

4.10 Land Use

Land use in the project area is primarily rural residential and agricultural. There are scattered homes and farms in the surrounding area. The project caused no unique effects or impacts to land use. Evidence of past or ongoing timber harvest is apparent on the north bank of the river and less evident on the south bank. During early 2000, several large confers were illegally harvested from the north bank within 6 to 10 meters of the eroding bank. The presence of small communities or dispersed dwellings or farm structures is apparent from the project site.

Effects to land use from the action were favorable because grazing, farming and residential uses can continue with decreased potential for dangerous flooding.

4.11 Recreation

Recreational use of the Bogachiel River at the project site is seasonal and moderate at the project site. A boat ramp exists downstream adjacent to the Soleduck River confluence and significant angler access to this area of the river is made from this point. Most recreational angling originating from the Soleduck/Bogachiel boat ramp takes place on the Soleduck River. Another boat ramp exists approximately 3 miles upstream on the Bogachiel River from the project site

Recreational opportunities along the Bogachiel River have the potential to be popular enough to attract visitors from throughout or beyond the region. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, camping, photography, hiking, fishing and boating.

Effects to recreation values are insignificant because the site has been in a degraded condition compared with other locations nearby and uses to recreational resources and values are unchanged.

4.12 Hazardous, Toxic, and Radioactive Waste

There are no known hazardous, toxic, or radioactive waste sites in the project vicinity.

4.13 Aesthetics

Along the Bogachiel River, the landscape elements of landform, vegetation, water, color, and related factors are notable. Scenery and visual attractions are highly diverse over the majority of the river. In comparison to most areas along the river, the project location appears less attractive because of the ongoing bank erosion and from illegal logging at the project site. Constructed features of the project do not significantly affect the esthetics of the site or the river.

6. UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects associated with this project included: (1) a temporary and localized increase in noise, which may have disrupted wildlife in the area, (2) a temporary and localized disruption of local traffic by construction vehicles, and (3) a temporary and localized increase in turbidity levels in the Bogachiel River, which may have affected aquatic/estuarine organisms downstream.

7. COORDINATION

Coordination has taken place with the following agencies and entities:

- Washington Department of Ecology (Ecology)
- National Marine Fisheries Service (NMFS)
- U.S. Fish and Wildlife Service (USFWS)
- National Park Service (NPS)
- Environmental Protection Agency (EPA)
- Washington Department of Fish and Wildlife (WDFW)
- The Quileute Tribal Council
- Washington State Office of Archaeology and Historic Preservation
- Clallam County
- Washington Department of Transportation (WSDOT)
- Washington Department of Emergency Management
- Federal Highway Administration (FHWA)

Agency personnel were kept informed of site conditions and construction schedules throughout the planning for the project and during construction. Coordination meetings were held in La Push and in Port Angeles on, April 5, 2000, June 29, 2000 and July 17, 2000.

10. ENVIRONMENTAL COMPLIANCE

10.1 National Environmental Policy Act (NEPA)

Given the short time frame and design uncertainty associated with this emergency action, it was not practicable to complete NEPA documentation prior to the initiation of construction. Instead, this Draft Environmental Assessment (EA) was completed *after-the-fact*. This document will be coordinated with state and local agencies, and the Quileute Tribe for 30 days. A final EA incorporating comments and recommendations provided on the draft EA, as well as all additional compliance documentation will then be prepared.

10.2 Endangered Species Act, Section 7

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or endangered species. Prior to construction, a Biological Evaluation was prepared for the project. A finding of No Effect was determined for all potentially occurring threatened or endangered species. The National Marine Fisheries Service (NMFS) was notified of the project location and action and affirmed that there are not any species of interest to them at the project site and declined to participate in any further review. The USFWS was made aware

of the project and declined additional involvement following the findings of the Biological Assessment. The Biological Assessment is contained in Appendix C.

10.3 Clean Water Act, Sections 404, 401

Placement of rock to construct the flow deflection groins constitutes a discharge of fill material. A 404(b)(1) evaluation has been prepared for the project actions. Washington State Department of Ecology issued a Clean Water Act Section 401 water quality certification prior to construction. This included any work below the ordinary high water line. Coordination has been ongoing with Washington State Department of Ecology.

10.4 Rivers and Harbors Act, Section 10

Under Section 10 of the Rivers and Harbors Act, a navigable waterway is defined as those waters that are subject to the ebb and flow of the tide shoreward to the mean high water mark. The project did not restrict navigation or access to navigable waters, as the flow deflection groins do not impede the main flow of the river and all fill associated with the containment berm were placed above and/or landward of mean high water.

10.5 Coastal Zone Management Act

The Coastal Zone Management Act of 1972 as amended requires Federal agencies to carry out their activities in a manner, which is consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program.

Based on the evaluation provided in **Appendix D**, the Corps has determined that the proposed project is consistent to the maximum extent practicable with enforceable policies of the Clallam County's shoreline management program. The Washington Department of Ecology affirmed this determination in a letter dated October 6, 2000 to the Seattle District Corps of Engineers.

10.6 National Historic Preservation Act

The National Historic Preservation Act (16 USC 470) requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated.

On October 30, 2000, Washington State Office of Archeology and Historic Preservation concurred with the Seattle District assessment that no resources included in or eligible for inclusion in the National Register of Historical Places were affected by the project. A letter of concurrence from Washington State Office of Archeology and Historic Preservation is included in **Appendix A.**

10.7 Clean Air Act

The Clean Air Act requires states to develop plans, called State implementation plans (SIP), for eliminating or reducing the severity and number of violations of National Ambient Air Quality Standards (NAAQS) while achieving expeditious attainment of the NAAQS. The Act also requires Federal actions to conform to the appropriate SIP. An action that conforms with a SIP is

defined as an action that will not: (1) cause or contribute to any new violation of any standard in any area; (2) increase the frequency or severity of any existing violation of any standard in any area; or (3) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

This project is in response to a potentially life-threatening emergency that requires quick action on the part of the Corps thus, consistent with applicable guidance, conformity is presumed (EPA 1993, p. 63234). The Corps' after-the-fact determination is that emissions associated with this project did not exceed EPA's *de minimis* threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone).

10.8 Executive Order 11988, Floodplain Management

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy of the floodplain, and to avoid direct and indirect support of floodplain development where there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains."

Section 8 of E.O. 11988 notes that the order does not apply to assistance provided for emergency work essential to save lives or protect public property, health, and safety.

10.9 Executive Order 12898, Environmental Justice

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

The potentially affected community does include a minority population. A query of the EPA's SITEINFO database (EPA 2000) indicated that all 1990 census tracts within a 10 mile radius of the project site contained a population that is 85% Caucasian (94% within a 1 mile radius). The populations of the Quileute Tribe are not concentrated in the immediate project vicinity. No recent data on income levels in the immediate area is available. No TRI facilities, AIRS/AFS facilities, or RCRA sites are located within a 10 mile radius of project site. No CERCLA sites or NPDES sites are located within 10 mile of the project site.

The project does not involve the siting of a facility that will discharge pollutants or contaminants, so no human health effects would occur. No interference with Quileute treaty rights would result from the stabilization activities as construction does not physically interfere with fishing, or significantly impact fishery resources.

10.10 Wild and Scenic Rivers Act (P.L. 90-542, as amended) (16 U.S.C. 1271-1287)

The Bogachiel River is listed in the Nationwide Rivers Inventory (NRI), a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance. Under a 1979 Presidential directive , and related Council on Environmental Quality

procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments. The Bogachiel River was found to be eligible for designation as a wild and scenic river, and was therefore placed on the NRI. To be eligible as a scenic river, a river must be free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads. In addition, the river must possess one or more outstandingly remarkable values (ORV). The Bogachiel was found to have ORV's in scenery, recreation, fish and wildlife.

This presidential directive requires each federal agency, as part of its normal planning and environmental review processes, to take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory compiled by National Park Service (NPS). Because the Bogachiel River is listed in the NRI, the advance measures project may be reviewed by the Rivers and Trails Conservation Assistance Program of the National Park Service. Further, all agencies are required to consult with the National Park Service prior to taking actions that could effectively foreclose wild, scenic or recreational status for rivers on the inventory.

The advance measures action on the Bogachiel River does not adversely affect the eligibility for designation of the river for wild, scenic or recreational status because the project site has been one of the river's least aesthetically pleasing sections of shoreline owing to erosion, timber harvest, and degraded rural dwellings or structures. Additionally, recreation use at the site is minimal. The National Park Service's Rivers and Trails Conservation Assistance Program was consulted on the project prior to any construction. The NPS concurred with the Corps that the project would have no effect on the river's eligibility for designation as a wild, scenic or recreational river.

Table 2. Summary of Consistency of Project With Applicable Laws, Regulations and Policies

LAWS AND REGULATIONS RELATING TO THE PROPOSED ALTERNATIVES	ISSUES ADDRESSED	CONSISTENCY OF PREFERRED ALTERNATIVE
National Environmental Policy Act (NEPA) 42 *U.S.C. 4321 et seq.	Requires all federal agencies to disclose and evaluate the environmental effects of proposed actions and their alternatives and to seek to minimize negative impacts	N/A
Clean Water Act (CWA) 33 U.S.C. 1251 et seq.; Section 404	Requires federal agencies to protect waters of the United States. Disallows the placement of dredged or fill material into waters (and excavation) unless it can be demonstrated there are no practicable alternatives.	Consistent per 404(b)(1) Evaluation
Clean Water Act Section 401	Requires federal agencies to comply with state water quality standards.	Consistent with 401 Certification

Fish and Wildlife Coordination Act 16 U.S.C. 661 et seq.	Requires federal agencies to consult with the US Fish & Wildlife Service on any activity that could affect fish or wildlife.	Consistent
Endangered Species Act 16 U.S.C. 1531 et seq.;	Requires federal agencies to protect listed species and consult with US Fish & Wildlife or NMFS regarding the proposed action.	Agency concurrence received
National Historic Preservation Act 16 U.S.C. 461;	Requires federal agencies to identify and protect cultural and historic resources.	SHPO concurrence received
Wild and Scenic Rivers Act	Requires that "In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas." (Section 5. (d) of the National Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287)	Concurrence from National Park Service received
Executive Order 11988, Floodplain Management, 24 May 1977	Requires federal agencies to consider how their activities may encourage future development in floodplains.	Consistent
Executive Order 11990, Protection of Wetlands	Requires federal agencies to protect wetland habitats.	Consistent
Coastal Zone Management Act (CZMA) 16 U.S.C. 1451 et seq.; 15 CFR 923	Requires federal agencies to comply with state and local plans to protect and enhance coastal zone and shorelines.	Consistent to the maximum extent practicable
Washington Hydraulic Code	Requires proponents of developments, etc to protect state waters, wetlands and fish life.	Consistent with advisory requirements
Clean Air Act 42 U.S.C. 7401-7671g	Requires federal agencies to consult with state air pollution control agencies to assure that construction plans conform with local air quality standards	Consistent
Clallam County Flood Hazard Reduction Plan	Implement Projects which will result in innovative, comprehensive and permanent solutions to flooding problems while employing environmentally sensitive techniques	Consistent

11. CONCLUSION

This project was not a major Federal action significantly affecting the quality of the human environment, and therefore did not require preparation of an environmental impact statement.

12. REFERENCES

Environmental Protection Agency. November 30, 1993. *Determining Conformity of General Federal Actions to State or Federal Implementation Plans.* Federal Register 58(228): 63214

14. APPENDICES

Appendix A Requests for Corps Assistance and Declarations of Emergency, And Other Correspondence

QUILEUTE TRIBAL COUNCIL
POST OFFICE BOX 279
LA PUSH, WASHINGTON 98350-0279
TELEPHONE (360) 374-6163
FAX (360) 374-6311

March 13, 2000

Colonel James Rigsby
District Engineer
U.S. Army Corps of Engineers
Seattle District
P.O. Box 3755
Seattle, WA 98124

Dear Colonel Rigsby:

The Quileute Tribal Council requests Advanced Measures Assistance from the Seattle District, U.S. Army Corps of Engineers, under Public Law 84-99 to address the imminent potential for catastrophic flooding along the Bogachiel River.

The natural course of the Bogchiel River is changing, flooding SR 110 the only feasible roadway leading to the reservation and Coast Guard base. The flooding also threatens the reservation's water supply because the water supply line for the reservation runs alongside SR 110.

In March 1997 and December 1999, floods caused damage to the riverbank and SR 110. Following each of these floods, the road was closed for an extended period of time. The Federal Emergency Management Agency (FEMA) provided temporary assistance following the March 1997 flood; however, FEMA's efforts did not provide permanent relief. In December 1999, the County and the Tribe declared a state of emergency, seeking state and federal assistance ti find potential solutions.

The Advanced Measures Assistance program would allow the Corps to begin analyzing and performing the studies necessary to develop a solution before the next flood event. Unless immediate action is taken, the river will ultimately destroy the highway and interrupt the water supply, preventing access to the reservation and threatening the health and welfare of those living on the reservation.

In making your determination, we also ask the Corps to consider its federal trust responsibility for the Quileute Tribe. Thank you for your consideration of this request.

Sincerely,

Russell Woodruff, Sr., Chairman
Quileute Tribal Council

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Northwest Region
911 N.E. 11th Avenue
Portland, Oregon 97232-4169

IN REPLY REFER TO:

MAR 14 2000

Colonel James Rigsby, District Engineer
U.S. Army Corps of Engineers
Seattle District
P.O. Box 3755
Seattle, WA 98124

Dear Colonel Rigsby:

This letter is in regard to the Quileute Tribe's (Tribe) request to your office for Advanced Measures Assistance to address the serious potential for major flood along the Bogachiel River.

Historically, the Bogachiel River meandered around a state highway, SR 110, that serves as the only feasible access to the Quileute Reservation. In the last several years, the natural course of the Bogachiel River has been changing. These changes threaten the stability of this highway and the reservation's water supply because the water supply line runs alongside SR 110. In 1997, and again in 1999, floods extensively damaged SR 110 and closed the highway for an extended period of time.

The Tribe's request for emergency assistance is supported by the fact that the Quileute Reservation and the associated resources are subject to the federal trust responsibility. Continued flooding of the Bogachiel River threatens access to the reservation and endangers the health and safety of the residents. Immediate action is necessary to prevent interruption in the Tribe's water supply and destruction of the highway.

I urge your approval of the Tribe's request.

Sincerely,

Northwest Regional Director

SLADE GORTON
WASHINGTON
730 HART SENATE OFFICE BUILDING
(202) 224-3441
www.senate.gov/~gorton

United States Senate

WASHINGTON, DC 20510-4701

May 11, 2000

COMMITTEES
APPROPRIATIONS
BUDGET
COMMERCE, SCIENCE, AND TRANSPORTATION
ENERGY AND NATURAL RESOURCES
INDIAN AFFAIRS

Colonel James Rigsby
US Army Corps of Engineers
Attn: Anna Campbell
PO Box 3755
Seattle, WA 98124-3755
Re: section 14 project funding

Dear Colonel Rigsby,

I wish to lend my strong support to the Quileute Tribe's request for emergency streambank protection funding under Section 14 of the 1946 Flood Control Act as well as Advanced Measures Assistance under Public Law 84-99. As you know, the natural course of the Bogachiel River is shifting, and since 1997, the river has twice flooded SR 110, cutting off the only access to the Quileute Reservation and the Coast Guard Station at La Push.

To compound the danger of this situation, the tribe's water supply line runs parallel to SR 110. Therefore, the riverbank's weakness not only threatens access to the reservation, but also the health and welfare of those living and working in La Push. Obviously, section 14 would provide the essential funding mechanism for a long-term solution to this significant danger.

However, after talking with representatives of the tribe and the local community, I feel it is also necessary to expeditiously repair the cutaway riverbank as a stop-gap measure until permanent solutions can be carried out. I would hope that the Corps takes into account the uniqueness of this Peninsula watershed, and the high rainfall which triggered the recent flood events in 1997 and 1999, in determining the suitability of Advanced Measures Assistance for this project. It is entirely possible for such high rainfall to occur again this year.

I want to thank you and your staff for being so available to the local community. Please do not hesitate to contact Kent Craford in my Bellevue office if I can be of any further assistance, or if appears that funding may not be applied to the Bogachiel project by this summer.

Sincerely,

SLADE GORTON
United States Senator

1000 N.E. FOURTH STREET
SUITE #2310
BELLEVUE, WA 98004
(425) 451-0101

11120 GRAVELLY LAKE DRIVE SW
SUITE #8
LAKEWOOD, WA 98499-1346
(253) 581-1040

120 FEDERAL BUILDING
500 WEST 12TH STREET
VANCOUVER, WA 98660
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367 U.S. COURT HOUSE
W. 920 RIVERSIDE AVENUE
SPOKANE, WA 99201
(509) 353-2507

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YAKIMA, WA 98901
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KENNEWICK, WA 99336-2126
(509) 783-0640

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

Environmental Resources Section

Grant/dmg/3625

OCT 18 2000

Allyson Brooks, Ph.D.
State Historic Preservation Officer
Office of Archaeology and Historic Preservation
Post Office Box 48343
Olympia, Washington 98504-8343

Dear Dr. Brooks:

The U.S. Army Corps of Engineers, Seattle District (Corps) is currently constructing a small flood control feature on the Bogachiel River between Forks and La Push in Clallam County. The river is eroding its right bank just upstream of the Highway 110 bridge and now threatens the highway, the Old La Push Road, and water lines that supply the Quileute Reservation. Overbank flooding also cuts off the only viable access to the reservation and a U.S. Coast Guard Station. Although the Quileute Tribe is seeking a long-term solution to the problem, the Corps project described here is only an interim solution to flooding for at least the next year or two. The main elements of the Corps project consist of a 1,800 linear foot diversion berm and four in-water rock groins to protect against additional erosion along the cutbank.

This project was reviewed by a staff archaeologist and judged to warrant a cultural resources survey. A survey was conducted on 13 October, 2000 and no archaeological or historic sites were located within the proposed project area (enclosure). In addition, Quileute tribal members contacted during this study did not believe there were any traditional cultural properties in the project area. Accordingly, no further investigation is recommended for the current advanced measures project. A broader cultural resources assessment, however, will occur as part of the planning phase for the pending long-term project. We request your concurrence with our view that this interim undertaking will have no effect upon significant cultural resources.

Should you have questions or need additional information, please contact David Grant of my staff at (206) 764-3625.

Sincerely,

~~RICE~~/PM-PL-ER

Mark Ziminske, Chief
Environmental Resources Section

ZIMINSKE/PM-PL-ER
PM-PL File

Enclosure

STATE OF WASHINGTON

OFFICE OF COMMUNITY DEVELOPMENT

Office of Archaeology and Historic Preservation

420 Golf Club Road SE, Suite 201, Lacey • PO Box 48343 • Olympia, Washington 98504-8343 • (360) 407-0752
Fax Number (360) 407-6217

October 30, 2000

Mr. Mark Ziminske
Environmental Resources Section
Seattle District Corps of Engineers
PO Box 3755
Seattle, Washington 98124-3755

Log No.: 102300-11-COE-S
Re: Small Flood control feature-Bogachiel River

Dear Mr. Ziminske;

We have reviewed the materials forwarded to our office for the above referenced project. We concur with your determinations based upon Mr. Grant's assessment that no resources included in or eligible for inclusion in National Register of Historic Places will be effected by the proposed undertaking.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer. Should additional information become available, our assessment may be revised. In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity should be discontinued, the area secured, and this office notified.

Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 407-0771
email: robw@cted.wa.gov

Appendix B Photographs of the Project Site

Photo 1. Bank Erosion and Condemned Structure, February 2000

Photo 2. Sample Headcutting at Bogachiel River, February 2000

Photo 3. Bank Erosion Detail at Bogachiel River, February 2000

Photo 4. Equipment and Construction at Bogachiel River, October 2000

Photo 5. Aerial Photograph of Project at Bogachiel River

Appendix C Biological Assessment

BOGACHIEL RIVER ADVANCE MEASURES PROJECT
BIOLOGICAL ASSESSMENT
August 22, 2000

1.0 BACKGROUND

On May 11, 2000 the U.S. Fish and Wildlife Service (USFWS) identified the listed or proposed threatened and endangered species, candidate species and species of concern which may occur in the project vicinity (USFWS Reference 1-3-00-SP-1083). Included in this list were three species listed as threatened, bald eagles (*Haliaeetus leucocephalus*), marbled murrelets (*Brachyramphus marmoratus marmoratus*), and northern spotted owls *(Strix occidentalis caurina*). The National Marine Fisheries Service (NMFS) has been notified of the proposed project location and action and has affirmed that there are not any species of interest to them at the project site and have declined to participate in any further review. The potential impacts to these listed, proposed, and candidate species as a result of the Bogachiel River Advance Measures project are outlined in this biological assessment.

2.0 PROBLEMS AND PROJECT DESCRIPTION

The Bogachiel River is eroding its right bank on an outside meander bend just upstream of the Highway 110 bridge near La Push, Washington (Figure 1). The erosion has increased dramatically in the past year, and a nearby home has been condemned. The erosion now threatens Highway 110, the Old La Push Road, and water lines that supply the Quileute Tribe in La Push. As the erosion progresses, the bank height decreases. The current bank height is approximately 4-5 feet lower than it used to be. This causes the bank to be overtopped during relatively minor flood events. When this happens, the floodwaters run over Highway 110 to a depth of up to five feet, travel overland for approximately ½ mile and reenter the river. In addition to the threat from the bank erosion, headcutting is progressing rapidly towards the road from the location where the floodwaters reenter the river. There is a significant potential that the next occurrence of overbank flooding will cause the headcutting to progress to the road and wash it out along with the water supply lines.

The overbank flooding cuts off the only viable access to the Quileute Reservation, the community of La Push, a portion of Olympic National Park and a U.S. Coast Guard Station. There is no alternate route available for emergency assistance. The river comes up quickly and without warning.

In response to the situation, the Seattle District Corps of Engineers proposes to construct a berm set back approximately 100 feet from the existing bank line. The berm

elevation shall be constructed to the bank elevation that existed in 1993. The elevation has been determined to be 50 feet MSL. The height of the berm will be approximately 5 feet. The berm shall be built with a front slope of 2H: 1V and a back slope minimum of 4H: 1V. The top width shall be constructed at 10 feet. The top and back slope of the berm will be armored with an 18" minus to help reduce the chance of scour and failure due to overtopping. The approximate length of the berm is 1,800 lineal feet. See figure 2.

Two sets of groins will also be constructed. The first set will be located upstream of the eroding bank, and the second pair will be located further downstream to deflect flow away from a scour hole that is beginning to form. The groins shall be set approximately 10 feet into the bank with a top width of 10 feet at the bank elevation. The groins may be set back further into the bank if conditions require it. This decision will be made in the field during construction. The groins would then taper from the bank top width to a 3 feet top width at the terminus. Each groin will have a length equal to 25 percent to 40 percent of the wetted perimeter. The groins will be built with 4 foot to 6-foot rock and 36" minus riprap. A few of the select logs, which exist on-site, will be placed between each pair of groins. Personnel from the Washington Department of Fish and Wildlife will tag logs on site to be placed between the groins. Groin location and orientation may be changed in the field, as conditions require. Equipment to be used includes a large hydraulic excavator, D4 or equivalent bulldozer, and a dump truck for delivery. Construction of the groins will require construction of temporary access roads to the groin locations. Plans entail the placement of large woody material (LWM) between groins. WDFW personnel would supervise this work and mark LWM available onsite. Additional LWM would be delivered to the project only if available LWM proves inadequate. Specifications for the LWM is as follows: Under direction of WDFW personnel and site-specified, up to 3 sound conifer logs will be placed for every 10 linear feet of groin waterward of the bankline. The logs will be a minimum of 30 feet in length, 24 inches in diameter, with root wad attached. Final identification and quantification of LWM will be accomplished during an on-site review with staff from the Corps of Engineers and WDFW. Anchoring methodology of the LWM will be determined at the on-site review. See figures 3 and 4.

During construction, in-water work in the channel widening area will be kept to a minimum. A spill prevention plan will be set up to help avoid spills and program a response to handle spills in case one occurs. Where possible fish will be directed away from the area through the use of a bubble curtain. Silt curtains will be placed to minimize turbidity impacts.

Construction of the berm and groins will begin on October 6, 2000, and will take approximately one month to complete.

The action area for the project extends from the project site downstream to the mouth of the Quillayute R, including various project needs such as staging areas and access roads (if needed).

3.0 GENERAL PROJECT IMPACTS (DIRECT AND INDIRECT)

The construction of the project would result in a temporary increase in turbidity at the project site during construction of the groins. Fish and wildlife usage of the area would temporarily be disrupted during construction. In addition, the construction activities could also affect the Bogachiel River downstream of the project in the short term by releases of sediment. Minor releases of pollutants into the air from the construction equipment would occur.

There would be clearing of about 0.5 acres of second growth forest and shrub for construction of the berm. The condition of the forest and shrub habitat along the berm location is highly degraded from illegal logging, grazing and flooding. Only a few small deciduous trees (less than one dozen), primarily young alders, would be removed during construction. None of the trees that would be removed are suitable for nesting or perching by any of the listed species discussed in this BA. This is especially true since the project area is in cleared pasturelands and the trees that will be removed are scattered individuals on the pastures. There would be a minor impact to aesthetics from loss of vegetation. All adverse effects are anticipated to be temporary and minor.

Placement of the rocks to construct the groins would unavoidably cause brief increases in suspended sediment in the river. There would likely be positive effects to fishery habitat values from the groins, as the size of rocks to be used would offer cover for migrating fish (4-foot to 6-foot boulders).

3.1 INTERDEPENDENT AND INTERRELATED EFFECT

The project would result in the deflection of minor floodwaters away from Highway 110, and temporary storage of higher flood flows in front of the berm, protecting the highway until a more permanent solution can be found. No other interdependent or interrelated effects are associated with this project.

3.2 CUMULATIVE EFFECTS

The only possible future non-Federal effects envisioned are that the highway may be improved (though it is highly likely that Federal funds would be necessary). Because of frequent flooding in the area, no development is anticipated in the vicinity of the project.

4.0 PROJECT IMPACTS ON LISTED SPECIES

4.1 Bald Eagle

4.1.1 Habitat Requirements/Population Status

The bald eagle is listed as threatened in Washington on the Federal list of endangered, threatened, and proposed animals and plants. The bald eagle is found only in North America and ranges over much of the continent, from the northern reaches of Alaska and Canada down to northern Mexico. Bald eagles migrate to wintering ranges in Washington State in late October and are most commonly found along lakes, rivers, marshes, or other wetland areas west of the Cascades, with an occasional occurrence in eastern Washington.

The characteristic features of bald eagle breeding habitat are nest sites, perch trees and available prey. Bald eagles primarily nest in uneven-aged, multi-storied stands with old-growth components (Anthony, et al. 1982). Factors such as tree height, diameter, tree species, position on the surrounding topography, distance from water, and distance from disturbance also influence nest selection. Live, mature trees with deformed tops are often selected for nesting and nests are often re-used year after year (USFWS, 1981). Snags, trees with exposed lateral branches, or trees with dead tops are often present in nesting territories and are critical to eagle perching, movement to and from the nest and as points of defense of their territory. Perches used for foraging are normally close to water where fish, waterfowl, seabirds, and other prey can be captured.

Wintering habitat typically includes daytime perches in close proximity to an abundant food source (e.g., anadromous fish runs, waterfowl concentration areas) and communal night roosting areas (Steenhof 1978). Communal roosting habitat provides thermal and wind protection for wintering birds. Communal roosts typically occur in uneven-aged forest stands with some old-growth characteristics, and are frequently in areas sheltered by landforms and close to a rich food source (Anthony et al. 1982). Roost trees are typically the most dominant trees of the site (Anthony et al. 1982).

Bald eagles use most wintering sites from late October through March. Weather, photoperiod, and a shrinking food supply may stimulate eagles to move south in the fall. Movements by eagles within and between wintering sites along major river systems are common, and movement inland occurs as well.

4.1.2 Known Occurrences in the Project Vicinity

The closest nesting territory of bald eagles to the project site is about 1.4 miles northeast of the project area in T28N R14W Section 21 (USFWS, 2000). Bald eagles are year-round residents near La Push, and feed in the Quillayute River as well as other waters nearby (Horton, 1996). Bald eagles are a common at the mouth of the Quillayute River, 6 miles from the project site.

4.1.3 Effects of the Action

The construction of this project will not result in the removal of any trees that are known to be nesting trees, since the nearest nest is over 1 1/2 miles away

from the project site. This project will be constructed in the fall and winter avoiding bald eagle nesting just. In addition this project will have no effect to the prey sources of the bald eagle. It has been observed that the bald eagles near the action area feed on gulls more than other prey items, which also include waterfowl and fish (Horton 1996). McMillan (1996) feels that carrion (especially dead birds, which frequently wash up on the beaches) may be the most important food source for bald eagles along the coast. The construction of the project is a short term effect on the local environment; bulldozers, trucks, and related equipment will only be in place for approximately 30 days and then they are removed. Based on observations from Corps construction projects on the Yakima River (Scuderi, 1998), bald eagle use of river areas is not noticeably affected by the presence and operation of construction equipment such as excavators and dump trucks.

4.1.4 Determination of Effect

Due to the information provided in the above paragraph this project will have "no effect" on the bald eagle.

4.2 Northern Spotted Owl

4.2.1 Habitat Requirements/Population Status

The northern spotted owl (*Strix occidentalis caurina*) was federally listed as threatened throughout its range on July 23, 1990. Spotted owls can be found throughout the west slope of the Washington Cascades below elevations of 4,200 feet. Preferred owl habitat is composed of closed-canopy coniferous forests with multi-layered, multi-species canopies dominated by mature and/or old growth trees (Federal Northern Spotted Owl Recovery Plan). Habitat characteristics include moderate to high canopy closure (60-80%); large (>30" dbh) overstory trees; substantial amounts of standing snags, in-stand decadence, and coarse woody debris of various sizes and decay classes scattered on the forest floor (Gore et al. 1987, and others).

Owls do not build their own nests but rely on naturally occurring nest sites, such as broken top trees and cavities. In western Washington, spotted owls nest most often in cavities of trees with a dbh greater than 20 inches. In fact, there is much evidence that spotted owls require old-growth forests for reproduction (in FR, June 23, 1989) "found that 1282 [of 1502 owl observations] were in old-growth, 22 in mature forest, 131 in old-growth/mature forest, and 67 in stands less than 100 years of age, demonstrating an overwhelming preference for old growth."

4.2.2 Known Occurrences in the Project Vicinity

Due to the fragmented nature of habitat and lack of suitable habitat in and around the project area, no spotted owls are expected to occur in the project

vicinity. A review of the Washington State PHS database indicated no records for spotted owl in the area.

4.2.3 Effects of the Action

Because spotted owls are not present in the area and suitable habitat does not exist no effects on spotted owl are anticipated, no conservation measures are indicated at this time.

4.2.4 Determination of Effect

A determination of no effect is made since the project will not affect spotted owl habitat or its prey base, and the project is not located near any spotted owl nesting territories.

4.3 Marbled Murrelet

4.3.1 Habitat Requirements/Population Status

The marbled murrelet (*Brachyramphus marmoratus marmoratus*) was officially listed as a threatened species on October 1, 1992. Murrelets inhabit shallow marine waters and, like spotted owls, nest in mature and old growth forests. All nest locations in Washington have been located in old-growth trees that were greater than 32 inches in diameter at breast height (dbh) (Ralph et al., 1995). Nest stand characteristics generally include a second story of the forest canopy that reaches or exceeds the height of the nest limb, thereby providing a protective enclosure surrounding the nest site. A single, large, closed-crowned tree, which provides its own protective cover over the nest site may also be used by murrelets (Ralph et al., 1995). Large, moss-covered limbs (> 7 inches diameter) in tall trees are utilized for egg laying. Marbled murrelet nests have been located in stands as small as approximately seven acres (Hamer and Nelson, 1995) and are generally within 50 miles of marine waters. In Washington State, marbled murrelet abundance was found highest in areas where old-growth/mature forest comprised more than 30 percent of the landscape.

4.3.2 Known Occurrences in the Project Vicinity

Marbled murrelets nest in large trees that have horizontal branches at least 7 inches in diameter, and usually with a heavy growth of moss. Nest trees have so far been found only in old growth forests of at least 7 acres in size (U.S. Forest Service, 1996; Hamer and Nelson, 1995). As of 1993, only 18 stands on the Olympic Peninsula were found to be occupied by marbled murrelets (Hamer, 1995). Two formal surveys for marbled murrelets have been conducted in the La Push area (Raphael, et al, 1995; Taylor, 1996). Detections of marbled murrelets during these surveys are classified as status 4, which generally means the birds were heard or observed flying over (not landing or

perched), and the observer could not associate the detection with nesting in the immediate area (Taylor, 1996). These surveys were conducted 2-3 miles north of La Push (Taylor, 1996), as well as in the Second Beach area, about 1 mile south of La Push (Hamer, 1995). Hamer (1995) described the Second Beach survey area as "fairly marginal" habitat for murrelet nesting; on the other hand, a fledgling was found near the center of the town of La Push (Hamer, 1995). Nearly all of the forests near the La Push area--even on Olympic National Park lands--were blown down in the storm of 1921, which wiped out thousands of acres of forest near the coast (Horton, 1996). Thus, there is little old growth forest, even small patches, available for marbled murrelet nesting near the La Push area. One exception is the patch of forest on National Park land south of the Mora road, and just west of the National Park boundary, which is old growth hemlock (Horton, 1996). This patch, too, was disturbed, though not by the storm--loggers took out the largest spruce trees in the early 1900's, so what remains is a somewhat monotypic old growth stand (Horton, 1996). Nevertheless, the old hemlocks do meet the requirements for murrelet nest platforms, and the stand is considered to be a likely location for murrelet nesting (Horton, 1996). Several researchers indicated there are no known marbled murrelet nests near the coast (McMillan, 1996; Horton, 1996; Owens, 1996). One possible reason for this lack of nest data is that the area has not received the attention of formal surveys (Happe, 1996).

The above observations, combined with the detections by Hamer, suggest that marbled murrelets likely nest inland east of La Push, possibly in the Sol Du and Bogachiel River drainages, 15-40 miles inland (on National Forest and National Park lands, where old growth forest is more extensive and in larger, contiguous patches).

4.3.3 Critical Habitat

There is no critical habitat for marbled murrelet within six miles of the project area.

4.3.4 Effects of the Action

The previous paragraph states that old growth forest (and suitable marbled murrelet habitat) is more extensive along the Bogachiel River (which also implies that spotted owls may be present…). At the very least we should state that, while suitable habitat may exist near the project area, the project actions will not disturb any suitable habitat. An important point to make will be to show that the project would not occur during marbled murrelet nesting season (will it?).

4.3.5 Determination of Effect

A determination of no effect is made since there is no suitable marbled murrelet habitat within 6 miles of the project site and the project will be constructed outside the nesting season of marbled murrelets.

REFERENCES

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COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION

Bogachiel Advance Measures
Forks, WA
Clallam County, Washington

1.0 INTRODUCTION

The proposed Federal action applicable to this consistency determination is an Advance Measures assistance under Public Law 84-99 as a result of the threat of flooding over the access road to the Quileute Tribe in La Push, WA. Placement of a low berm (up to 5 feet in height) approximately 50 feet to 100 feet from the right bank of the Bogachiel River and placement of 4 rock groins within the river to deflect flows is intended to reduce the frequency of the flooding and subsequent road closures. This determination of consistency with the Washington Coastal Zone Management Act is based on review of applicable sections of the State of Washington Shoreline Management Program and policies and standards of the adopted Clallam County (Washington) Shoreline Management Master Program.

The proposed project is a temporary measure, not a permanent solution. It is primarily intended to provide relief from frequent flooding during the 2000/2001 winter season while a long term measure or solution is determined. A more permanent solution is anticipated in the near term.

2.0 STATE OF WASHINGTON SHORELINE MANAGEMENT PROGRAM

Primary responsibility for implementation of the State of Washington Shoreline Management Act of 1971 has been assigned to local governments. The applicable local government office responsible for Clallam County Shoreline Master Program as defined in RCW 90.58 and WAC 173.16.030 is Clallam County.

3.0 CLALLAM COUNTY SHORELINE MASTER PROGRAM

Clallam County has prepared a Shoreline Management Master Program, adopted June 30, 1976, as required by the Shoreline Management Act. The Clallam County Master Program, as amended, guides permit review for all relevant shoreline activities.

Corps of Engineers consistency determination is indicated in bold Italics.

3.1 Environment and Use-Element Policy

Chapter 3 of the Clallam County Master Program, as amended defines the environments and use- element policies for shorelines in the county. Appendix D of the

Clallam County Master Program, as amended defines the environment boundaries for water bodies with Clallam County. Appendix D lists the Bogachiel River as a Rural Environment.

3.2 Natural System Regulations

Chapter 4.10 Rivers, Streams and Creeks, Section C, Rural Environment

"Construction of dikes, levees and bulkheads should be done in such a way as to preserve the natural channel rather than constrict it into the conformation of a ditch."

The selected alternative does not alter the channel significantly. Proposed groins (4) will help deflect flows away from the eroding bank . The proposed project would not change the river bank except where the groins are set into the bank. Groins would not extend into the normal river channel further that one third of the channel width. The proposed temporary measures will not significantly change natural river migration during the life of the project because the set back berm is located 100 feet from the river, thereby allowing continued erosion at its present rate.

"Any such modification of the natural channel must be proven necessary for the protection of life and property."

The overbank flooding cuts off the only viable access to the Quileute Reservation, the community of La Push, a portion of Olympic National Park and a U.S. Coast Guard Station. There is no alternate route available for emergency assistance. The river comes up quickly and without warning. These "advanced measures" are activities performed prior to flooding or flood fighting to protect against loss of life and damages to property along State Highway 110. This project is in response to a potentially life-threatening emergency which requires quick action on the part of the Corps thus, consistent with applicable guidance. Delays or unavailability from routine and emergency medical services (there are no medical services available in La Push) could pose a life threatening problem for isolated persons.

3.3 Use Activity Regulations

Chapter 5.13 Jetties and Groins

Policies:

"Careful consideration should be given to the adverse effects which jetties and groins may have on sand movement particularly in regard to the location and design of these structures."

Movement of sand following placement of the proposed structures is not anticipated to be significant.

"Jetties and groins should be designed to cause the least practicable detraction from significant scenic view."

Along the Bogachiel River, the landscape elements of landform, vegetation, water, color, and related factors are notable. Scenery and visual attractions are highly diverse over the majority of the river. In comparison to most areas along the river, the project location appears less attractive because of the ongoing bank erosion and from illegal logging at the project site. Constructed features of the project would not significantly affect the esthetics of the site or the river.

"Special consideration should be given to the effects proposed jetties and groins will have on fish and wildlife."

The proposed work would have no effect to any federally listed threatened or endangered species. Effects to other fish and wildlife would be insignificant. In stream habitat values at and adjacent to the proposed groins is poor. Some fishery habitat values may be increased by the placement of the rock groins, as the proposed size of the materials is large enough to potential offer shelter to migrating fish. Large woody debris is also proposed to be placed between the rock groins under the direction of personnel from the Washington Department of Fish and Wildlife, potentially enhancing fishery habitat at the site.

"Special consideration should be given to the preservation and/or restoration of natural vegetation or other measures that may enhance fish and wildlife habitat."

Large woody debris is proposed to be placed between the rock groins under the direction of personnel from the Washington Department of Fish and Wildlife, potentially enhancing fishery habitat at the site. Vegetation at the site would not be removed unless it is unavoidable for the construction of the berm. Woody vegetation will be planted to offset woody vegetation removed. Blackberry brambles will not be restored.

Regulations:

Rural Environment: "Jetties and groins on rivers, streams and lakes may be authorized as a conditional use provided that the applicant can demonstrate the appropriateness of the design structure for the site and that alternative shore defense measures would prove more detrimental to the geohydraulics and natural resources within the water body than would the proposed structure."

Clallam County, Washington Department of Transportation, the Quileute Tribe, and Washington Department of Ecology concur that the proposed design is appropriate for the site given the budget and urgency of the problem. Concurrence with the project with permitting agencies is primarily because the project is a temporary emergency action, not a

permanent solution. The proposed alternative (berm with groins) is less detrimental to "geohydraulics" and natural resources than other potential alternatives (high bank revetment with groins and rip-rap bank protection, high flow channel excavation).

Chapter 5.16 Shoreline Protection

Policies:

"Where flood protection measures such as dikes are planned, they should be placed landward of the streamway, including associated natural wetlands directly interrelated and interdependent with the stream proper."

The proposed berm is located landward of the primary river channel. There are no wetlands within or immediately adjacent to the footprint of the proposed berm.

4.0 STATEMENT OF CONSISTENCY

Based on the above evaluation, it is determined that the advance measures flood protection structures (berm and groins) comply with the policies, general conditions, and activities as specified in the Clallam County Shoreline Management Master Program adopted June 30, 1976. The proposed action is considered consistent to the maximum extent practicable with the State of Washington Shoreline Management Program, policies, and standards of the Clallam County Shoreline Management Master Program.

This statement was prepared in consultation with Jeffrey Stewart, Washington Department of Ecology and Joel Freudenthal, Clallam County.