

CENWS-PM-PL-ER

DRAFT

**ENVIRONMENTAL ASSESSMENT
NEAH BAY MARINA FISH GAP MAINTENANCE
NEAH BAY, WASHINGTON**



**U.S. Army Corps of Engineers
Seattle District Office
4735 East Marginal Way South
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1.0 AUTHORITY

The Neah Bay Marina and associated Fish Gap was authorized under Section 107 of the 1960 River and Harbor Act, as amended. Section 107 authorized the Secretary of the Army to allocate funds for planning, design, construction, and maintenance of small navigation projects when, in the opinion of the Chief of Engineers, such work is advisable. The project was requested by the Makah Indian Tribe, who represents the project's non-federal interest as a local sponsor.

2.0 PROJECT DESCRIPTION

2.1 Introduction

The purpose for this document is to address the potential environmental impacts associated with proposed maintenance dredging of the fish gap at Neah Bay, Clallam County, Washington by the Seattle District of the U.S. Army Corps of Engineers (USACE). Maintenance work is proposed to occur in early December 2009, to coincide with minus tides, and is expected to take no longer than eight days.

In 1995-96 the USACE constructed a commercial marina along the south shore of Neah Bay. Breakwaters were built for protection from storms along the north and eastern sides of the marina. The eastern breakwater was split into two sections at the request of both state and federal resource agencies to facilitate a "fish gap." The fish gap was to be maintained at an elevation of between 0' and -2' Mean Low Low Water (MLLW) to allow migrating salmon to pass through the marina and avoid being forced into deep water by the north marina breakwater. In addition, the gap also provides for the flushing of water from behind the breakwater into the Bay thereby improving water quality within the marina. Additional mitigation requirements for construction of the marina required the removal of approximately .5 acres of an intertidal rock fill (locally known as Evan's Mole), located approximately 2000 feet east of the marina site. The rock removed from Evans Mole was reused in the construction of the marina breakwater. After rock removal, dredged material was placed at the Evans Mole site to nourish the eroded beaches to the west of the previous fill through littoral drift.

2.2 Project Need

Since construction, the fish gap has required regular dredging to remove sediments which build up in the gap at a higher rate than anticipated, likely due to littoral drift being diverted into the gap by an outfall located just east of the breakwater (USACE 2002).). The removed sediment material is transported to the previous placement site at Evans Mole for littoral redistribution to eroded beach area to the west. The last dredging action occurred in February 2003, when approximately 2700cy of material was removed from the fish gap, transported to the Evans Mole site, and placed above Mean High Water (MHW) using a dump truck. After all sediment was deposited, the final grading (to include elevations below MHW) was completed.

Currently, the elevation in the fish gap ranges between +3' and +4' MLLW; fish passage and water exchange is not occurring. The Corps proposes to conduct routine dredging maintenance at the fish gap during the minus tide in early December 2009 to return the gap to the desired

elevation of between 0 and -2' MLLW. It is anticipated that approximately 5800cy of sediment would be removed from the gap and transported to the beach site at Evans Mole using the same technique (see Proposed Action below) as was previously found to be successful at limiting water quality impacts and nourishing the beach.



Figure 1: Current view of fish gap at low tide

2.3 Project Location

The Neah Bay Marina Fish Gap and Evans Mole are located on the southern shore of Neah Bay on Makah tribal lands in the town of Neah Bay, Clallam County, Washington, R15W, T33N, Section 11. Evans Mole, located approximately 2000 feet east of the fish gap, is the site of a former intertidal fill which was removed as mitigation during the construction of the Marina.

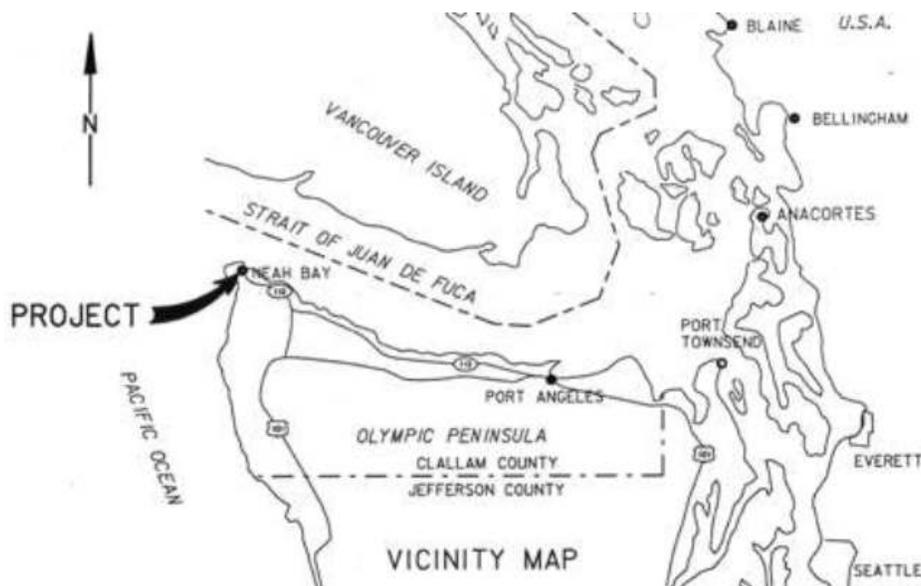


Figure 2: Neah Bay location at extreme northwest corner of Washington.



Figure 2: Project location

2.4 Proposed Action

In the first week of December 2009, to coincide with minus tides, routine maintenance dredging is proposed at the Neah Bay fish gap to bring the elevation within the fish gap back to the intended height of between 0 and -2 MLLW to allow migrating salmon to pass through the marina and avoid being forced into deep water by the north marina breakwater. Using excavators and bulldozers, approximately 5800cy of sediment is expected to be removed and transported via dump truck to the Evans Mole disposal site.

In-water work would be minimized by coordinating work with the lowest tides and creating a temporary berm to allow as much work as possible to occur ahead of the incoming tide. The excavator would remove material from inside this berm and place it on the breakwater at a higher

elevation. During the higher tide, sand would be loaded into dump trucks and transported to the Evans Mole site for placement. Large mounds would not be created and it would be side-cast along the beach as far as possible. The beach area would be returned to its original appearance after the project is completed. No “bath tub” holes would be left that could trap fish on outgoing tides. The entire project is expected to take no more than 8 days.

Best Management Practices (BMPs) would be implemented during the project, including working within the designated construction window (July 16 to March 1) to minimize effects to fish, working during the lowest tides possible, and utilizing construction sequencing techniques to limit in-water work and reduce impacts on water quality due to turbidity increases.

3.0 ALTERNATIVES

3.1 No Action Alternative

Under this alternative no maintenance work would be conducted at the fish gap. The elevation would remain above the intended 0 to -2 MLLW heights and fish would be unable to pass through the marina. In addition, water quality within the marina breakwater would likely continue to degrade as flow through is restricted by the elevations within the fish gap.

3.2 Dredge the Fish Gap

Under this alternative routine maintenance dredging would be conducted at the fish gap. Approximately 5800cy of sediments would be removed from the gap and placed at the Evans Mole disposal site to supplement the adjacent eroded beach. After project completion the elevation of the fish gap would be between 0 and -2’ MLLW. In-water work would be minimized to the extent possible by working during the lowest tides and using construction methods that would allow as much work as possible ahead of the incoming tide.

4.0 EXISTING ENVIRONMENT

4.1 Tides and Tidal Currents

Tides at Neah Bay are typical of the Pacific coast of North America. Such tides are exhibit two unequal highs and lows each day. The Strait of Juan de Fuca is subject to strong, irregular currents and to rip currents off prominent points such as Waadah Island. Tidal currents entering and leaving the harbor at Neah Bay through the entrance channel can exceed ½ knot (0.8 fps); however tidal current measurements conducted by the Corps of Engineers in 1986 indicate that currents in the vicinity of the marina are minimal, and seldom exceed 0.2 fps.

Tidal datums for Neah Bay, as published by the National Ocean Service, are as follows:

| <u>DATUM PLANE</u> | <u>ELEVATION REFERRED TO MLLW</u> |
|--------------------------|-----------------------------------|
| Highest Tide (Estimated) | 12.00 |
| Mean Higher High Water | 7.94 |

| | |
|-------------------------|-------|
| Mean High Water | 7.10 |
| Mean (Half) Tide Level | 4.33 |
| NGVD | 4.41 |
| NAVD88 | -0.68 |
| Mean Low Water | 1.57 |
| Mean Lower Low Water | 0.00 |
| Lowest Tide (Estimated) | -3.80 |

4.2 Sediments

In November 1986, twelve sediment samples were taken and analyzed for metals, sediment toxicity and organic compounds at two sites in Neah Bay. Analysis of the six samples taken near the closed Crown Zellerbach facility included one Puget Sound Dredged Disposal Analysis (PSDDA) Screening Level (SL) exceedance and six marginal detection exceedances for zinc. Analysis of an additional six samples taken at a beach west of Evans Mole were all well below PSDDA SLs, except for one marginal detection exceedance of 1, 2, 4-trichlorobenzene (USACE 1997). In May 1993, samples were taken from the area to be dredged for the new marina. The results found the material below PSDDA SL's making it suitable for open water disposal or beach nourishment. No more current data is available; however it may be assumed that sediment quality is relatively unchanged as no major developments have occurred along the shoreline or in the bay since that time.

4.3 Water Quality

The Makah Tribe has promulgated Tribal water quality standards which were approved by the Environmental Protection Agency (EPA) on 29 Dec 2006, in accordance with the Clean Water Act, 33 U.S.C. 1377(e). Marine waters in the Neah Bay project area assigned the following designated uses by the Makah Tribal Council:

- Ceremonial and religious use
- Cultural use
- Excellent quality salmon and other fish rearing, migration, and harvesting
- Clam, oyster, and mussel spawning, rearing, and harvesting
- Crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) spawning, rearing, and harvesting
- Wildlife habitat
- Primary contact recreation
- Commerce and navigation

These designated uses have specific water quality criteria for temperature, dissolved oxygen, pH, turbidity, bacteria limits, toxic materials, and religious or aesthetic values, see the Makah Tribal Water Quality standards for more information (Makah Tribal Council, 2006). Marine waters of Neah Bay shall meet or exceed these criteria for all designated uses.

4.4 Biological Resources

4.4.1 Vegetation

No vegetation is present within the fish gap or Evans Mole. The substrate is primarily sand at these sites which is not conducive to plant growth as it tends to shift throughout the year with tide, current, and weather changes. The breakwaters which create the fish gap are constructed of riprap and are sparsely vegetated with invasive species.

4.4.2 Marine Invertebrates

The composition and function of invertebrate communities are important in structuring the food web. The local invertebrate community is healthy as a result of relatively stable salinity gradients, strong tidal changes, clean water, sediments and substrate, and an abundance of primary producers. Among the invertebrates known in Neah Bay include the acorn barnacle (*Balanus glandula*), buckshot barnacle (*Cthamalus dalli*), thatched barnacle (*Semibalanus cariosus*), aggregating anemone (*Anthopleura elegantissima*), plumose anemone (*Metridium senile*), large eelgrass isopod (*Idotea resicata*), ochre sea star (*Pisaster ochraceus*), blood star (*Henricia leviuscula*), keyhole limpet (*Diodora aspera*), Sitka periwinkle (*Littorina sitkana*), checkered periwinkle (*L. scutulata*), turban snail (*Calliostoma costatum*), turret snail (*Batillaria zonalis*), the polychaete (*Capitella capitata*), mussels (*Mytilus* spp.), soft-shell clam (*Mya arenaria*), bent-nosed clam (*Macoma nasuta*), Baltic macoma clam (*Macoma balthica*), horse/gaper clams (*Tresus capax*), bivalves (*Transennella tantilla*, *Tellina* spp.), Pacific littleneck clam (*Protothaca staminea*), heart cockle (*Clinocardium nuttalli*), Dungeness crab (*Cancer magister*), graceful crab (*C. gracillis*), red rock crab (*C. productus*), yellow shore crab (*Hemigrapsus oregonensis*), purple shore crab (*H. nudus*), helmet crab (*Telmessus cheiragonus*), shielded-back kelp crab (*Pugettia producta*), porcelain crab (*Petrolisthes eriomerus*), coonstripe shrimp (*Pandalus danae*), spot prawns (*P. platyceros*), ghost shrimp (*Upogebia pugettensis*), skeleton shrimp (*Caprella californica*), (Cooney 1971, Jeffrey 1976, Simenstad *et al.* 1988, Shaw 1994).

4.4.3 Fish

As a result of the combination of abundant food resources, multiple habitat types and clean environmental conditions within the Neah Bay region, the local fish community is both healthy and diverse. The diversity of fish is demonstrated by Simenstad *et al.* (1988) who documented Pacific herring (*Clupea harengus pallasii*), northern anchovy (*Engraulis mordax*), surf smelt (*Hypomesus pretiosus*), Pacific sandlance (*Ammodytes hexapterus*), tube-snout (*Aulorhynchus flavidus*), Chinook salmon (*Oncorhynchus tshawytscha*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), lingcod (*Ophiodon elongatus*), cabezon (*Scorpaenichthys marmoratus*), black rockfish (*Sebastes melanops*), brown rockfish (*S. auriculatus*), copper rockfish (*S. caurinus*), quillback rockfish (*S. maliger*), kelp greenling (*Hexagrammos decagrammus*), striped sea perch (*Embiotoca lateralis*), starry flounder (*Platichthys stellatus*), spotted ratfish (*Hydrolagus colliei*), sturgeon poacher (*Argonus acipenserinus*), Pacific cod (*Gadus macrocephalus*), Pacific tomcod (*Microgadus proximus*), white sturgeon

(*Acipenser transmontanus*), big skate (*Raja binoculata*), English sole (*Parophrys regulus*), Dover sole (*Microstomus pacificus*), rock sole (*Lipidoptsetta bilineata*), sand sole (*Psettichthys melanostictus*), speckled sand dab (*Citharichthys stigmaeus*), various species of sculpin (family Cottidae), stickleback (*Gasterosteus aculeatus*), penpoint gunnel (*Apodichthys flavidus*), and crescent gunnel (*Pholis laeta*), among others.

4.4.4 Marine Mammals

Twenty-one species of marine mammals are reported to occur in the Strait of Juan de Fuca, with nine occurring regularly. However, Neah Bay does not regularly support marine mammals, other than California sea lions feeding on discarded fish remains from the commercial fishing industry. Infrequently, sea otters, harbor seals, Steller sea lions, and even gray whales have been seen within the protected waters of the Bay (Calambokidis *et al.* 1987).

4.4.5 Birds

Neah Bay is an important overwintering site for a number of waterfowl, and has been known to support an estimated 50 species of waterfowl (USACE 1994). The more common birds that occur in Neah Bay include scaups, scoters, buffleheads (*Bucephala albeola*), black turnstones (*Arenaria melanocephala*), and various gull species. Outside of the protected waters of Neah Bay, important roosting sites include nearby Tatoosh Island and Seal and Sail Rocks, which are utilized by nesting pairs of gulls, cormorants, tufted puffins (*Fratercula cirrhata*), rhinoceros auklet (*Cerorhinca monocerata*), common murres (*Uria aalge*), and storm petrels (*Oceanodroma* spp.) (Wahl *et al.* 1981).

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*) populations surrounding Neah Bay have grown significantly in the past several years. Observations show that the eagles utilize trees and pilings in and around the bay and marina as perch sites (B. Buckingham pers. comm. 2002). There were 117 bald eagle nest trees in Clallam County as of 2001 (Stinson *et al.* 2001). A more current count is not available. In the region surrounding Neah Bay bald eagles are year-round residents. All currently known bald eagle nests are at least ½ mile from the project site.

4.5 Threatened and Endangered Species

The following species listed under the Endangered Species Act (ESA) may occur in the project area. Possible effects of the fish gap maintenance on these species are discussed in Section 5.5.

- Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*) Threatened.
- Hood Canal summer-run chum salmon (*Oncorhynchus keta*) Threatened.
- Steller sea lion (*Eumetopias jubatus*) Threatened.
- Marbled murrelet (*Brachyramphus marmoratus*) Threatened.
- Coastal/Puget Sound bull trout (*Salvelinus confluentus*) Threatened.
- Brown Pelican (*Pelecanus occidentalis californicus*) Endangered.
- Southern Resident Killer Whale (*Orcinus orca*) Endangered

- Eulachon (*Thaleichthys pacificus*) Proposed for listing as Threatened

Puget Sound Chinook Salmon

Juvenile Chinook salmon (*Oncorhynchus tshawytscha*) have been found within Neah Bay by Simenstad *et al.* (1988) and SAIC for the USACE (2003). The relatively small size of these fish strongly suggests that they came from local rivers in the vicinity of Neah Bay, such as the Hoko River. Fish coming from central Puget Sound would be much larger than those found by Simenstad *et al.* (1988). Juvenile Chinook from Puget Sound rear in their native river estuaries until ready to migrate to the open ocean and are therefore unlikely to utilize Neah Bay. Puget Sound juvenile Chinook salmon are more likely to migrate through the Strait of Georgia. However, Neah Bay may be used for feeding and refuge, when juveniles migrate through the Strait of Juan de Fuca prior to ocean migration.

In addition, Neah Bay is located along one of the migration routes for returning adult Puget Sound Chinook salmon. However, it is likely these fish primarily utilize Neah Bay for short periods of foraging and refuge while migrating to Puget Sound.

Hood Canal Summer-Run Chum Salmon

Juvenile chum salmon have also been found within Neah Bay (Simenstad *et al.* 1988). The relatively small size of these fish strongly suggests that they came from local rivers in the vicinity of Neah Bay, such as the Hoko River, and not Hood Canal. Hood Canal summer-run chum salmon (*Oncorhynchus keta*) rear in their native river estuaries until ready to migrate to the open ocean and are, therefore, unlikely to utilize Neah Bay, and more likely to migrate through the Strait of Georgia. If they instead migrate through the Strait of Juan de Fuca, Neah Bay may be used for feeding and refuge.

Neah Bay is located along one of the migration routes for returning adult Hood Canal summer-run chum salmon. However, it is unlikely that these fish utilize Neah Bay for anything but short periods of foraging and refuge on their way to Hood Canal.

Steller Sea Lion

While Steller sea lions (*Eumetopias jubatus*) are year-round residents in British Columbia, they are generally considered seasonal visitors to Washington State, and do not breed in this area (Calambokidis *et al.* 1987, Calambokidis and Baird 1994). Calambokidis *et al.* (1987) found a haul out area for this species on Tatoosh Island, approximately 6.5 miles from the Neah Bay marina, confirming what several others had found previously. The maximum number observed hauled out was 68. Yet the sea lions were seldom observed near Neah Bay. In a year-long study, Steller sea lions were observed on 16 occasions in the vicinity of Neah Bay, and only twice in the protected waters behind Waadah Island and the breakwater. According to Calambokidis *et al.* (1987), they were least often encountered near Neah Bay during the summer months (end of April through the end of August), by mid-September, they had arrived at the haul-out area on Tatoosh Island. In the vicinity of Neah Bay, none were observed by Calambokidis *et al.* (1987) during the months of August, September, November, January, February and June.

Marbled Murrelet

Marbled murrelets (*Brachyramphus marmoratus*) are usually found in nearshore marine areas where they feed primarily on small fish and invertebrates (WDW 1993). While they spend the majority of their time feeding in marine waters, they fly inland up to 52 miles to nest in old growth forests (WDW 1993). The historic nesting range of marbled murrelets included Cape Flattery, but the current nesting range on the Olympic Peninsula has shrunk to the higher elevations in the Olympic Mountains due to extensive logging (Klinger 1991, WDW 1993). Wahl *et al.* (1981) projected a nesting population of 4 pairs of marbled murrelets near Neah Bay, based on census data from 1978 and 1979. Recent sightings of marbled murrelets in the nearby vicinity of Neah Bay are uncommon. Chapman (1993) did not observe any marbled murrelets during her year-long surveys in the Neah Bay vicinity.

Coastal/Puget Sound Bull Trout

Two adfluvial forms of bull trout (*Salvelinus confluentus*) stocks have been tentatively identified within the Strait of Juan de Fuca, these include the Dungeness/Gray Wolf and Lower Elwha river systems (WDFW 1998). Run timing and spawning timing are unknown for both stocks at this time. There is no information regarding marine residence time or migration patterns for either stock. Bull trout within Puget Sound have been documented to migrate from their native river system to another river system nearby. It is therefore possible that bull trout from the Dungeness/Gray Wolf or Lower Elwha river systems could be found at Neah Bay. However, there are no major river systems that empty into Neah Bay to attract any migratory bull trout from another system. Furthermore, due to lack of documentation of migrating anadromous bull trout outside of Puget Sound, and the lack of information about these stocks, it is highly unlikely that bull trout from either one of these systems would be found at Neah Bay.

Brown Pelican

The California brown pelican (*Pelecanus occidentalis californicus*) is the Pacific coast form of a more widespread species. The breeding distribution of the subspecies ranges from southern California southward to Mexico. Between breeding seasons, the subspecies may range as far north as Vancouver Island (Gress and Anderson 1983). The brown pelican may be present in Neah Bay from June through March, when they are commonly seen flying along the rocks of the breakwaters. They have been noted feeding in Neah Bay during September. Pelicans tend to favor rocky shorelines for perching. The nearest known brown pelican nocturnal roost area is located in Willapa Bay, approximately 120 miles south of Neah Bay.

Southern Resident Killer Whale

Killer whales (*Orcinus orca*) are most abundant in coastal habitats of temperate waters, especially in the high latitudes, however these whales can adapt to almost any conditions, and appear to be at home in both open seas and coastal waters. Killer whales are seldom seen in tropical and offshore waters. Critical habitat was designated in November 2006 and includes the Strait of Juan de Fuca but not inside the northern breakwater of Neah Bay.

In the eastern North Pacific Ocean, three distinct forms, or ecotypes, of killer whales-- "residents," "transients," and "offshores"--are recognized (Ford *et al.*, 2000). The Southern Resident killer whale (SRKW) population contains three pods (or stable family-related groups)-- J pod, K pod, and L pod--and is considered a stock under the Marine Mammal Protection Act (MMPA). Their range during the spring, summer, and fall includes the inland waterways of

Puget Sound, Strait of Juan de Fuca, and Southern Georgia Strait. Whale range in the winter is less well known. The southern residents feed mostly on salmon.

Eulachon - Proposed for listing as Threatened

In March 2009, National Marine Fisheries Service (NMFS) proposed the listing of Pacific eulachon (*Thaleichthys pacificus*) as threatened under the ESA.

Eulachon are a small anadromous fish that migrate into some of the major river systems along the west coast of North America to spawn in the early spring (late February to May). The adult fish spend most of their lives in the nearshore water of the eastern Pacific Ocean and may range from California to Vancouver Island. Between 3 to 5 years in age, adult fish return to freshwater streams to spawn. All fish are believed to die soon after spawning. After hatching, larvae are carried downstream and out into the estuary where they feed on zooplankton. The closest known estuary which contains a major stock of eulachon is the Fraser River in British Columbia, approximately 85 miles northeast.

In 2005, eulachon were documented for the first time in the Elwha River. Eulachon abundance in the Elwha appears much lower than in other northwest rivers with documented eulachon runs. Current theories for fish presence in the Elwha include straying, and reestablishment of a remnant stock (Shaffer 2007). The local historic observations of eulachon in the Elwha (but not other Olympic Peninsula rivers) up until the mid 1970's, combined with the severely degraded habitat of the lower Elwha River, indicate that the Elwha eulachon are a remnant population (Shaffer 2007).

Details of their habits and habitat while in saltwater are unknown (Wydoski 2003). Distribution of eulachon in the ocean has been identified primarily through studies of eulachon as by-catch for shrimp trawlers. As a result, this information tends to be limited to locations where shrimp trawling has taken place. High catch levels have been noted in the areas along the southwest coast of Vancouver Island (Hay and McCarter 2000).

During the 2003 fish surveys of Neah Bay, two eulachon were caught out of the over 13,000 forage fish. It can be assumed that adult eulachon may be present throughout nearshore the waters of the Strait of Juan de Fuca, including Neah Bay, although in very low numbers.

4.6 Cultural Resources

Neah Bay is the tribal center for the Makah Indian Nation and Tribal Reservation, which consists of 27,200 acres of land at the northwest tip of Washington State and is bounded by the Pacific Ocean and the Strait of Juan de Fuca. The Makah were historically a maritime people that used local Western Red Cedar to make canoes and other tools. In the past, five permanent villages made up the Makah community. These villages were Bahaada, Deah (present day Neah Bay), Waatch, Sooes, and Ozette. The two ethnographically reported villages included Bahaada and Deah Village, which was located at the west end of the Bay adjacent to the present-day town of Neah Bay. Bahaada, the larger of the two villages, was located east of the boat harbor near Baadah Point at the mouth of Agency Creek (Trettevick 1999, Makah 2002). No recorded archeological sites exist within the immediate vicinity of the Neah Bay Marina (Bowe chop, pers. comm. 2002).

4.7 Air Quality

Air quality in the vicinity of Neah Bay is regulated by the State of Washington using the Washington Air Quality Advisory (WAQA) tool. There is a real-time monitoring station located within Neah Bay. In general, air quality in the area is considered good, and is only minimally impacted by automobile and boat emissions.

4.8 Noise

Ambient noise levels in the Neah Bay area are well within the Washington State Legislature Revised Code of Washington regulated noise levels. At the project site, natural sources such as wind and surf are the principal sources of sound, with occasional boat and vehicle traffic contributing to noise levels.

4.9 Recreation

Many tourists frequent the areas surrounding Neah Bay in pursuit of open space and recreation. Recreation occurring near the project site includes hiking, hunting, boating, fishing, crabbing, clam digging, beach combing, bird watching, kite flying, and picnicking.

4.10 Socioeconomic

The Makah Nation's present-day seafaring economy is centered in Neah Bay. While the Makah Tribe is comprised of over 2,300 members, only about half of its members live on the reservation. The population of Neah Bay is comprised of approximately 1,400 to 1,500 tribal and non-tribal people year round (MCRC pers. comm. 2002).

Fishing related activities have historically been the main source of income for the Makah Nation. The Neah Bay Marina harbors over 200 commercial and sport fishing vessels as well as numerous pleasure craft. While fishing is still a major component of income for the area, unemployment is as high as 75% in winter months and 50% in the busy summer months when the majority of sport fishing and tourism occur. The tribal council also employs people in municipal, enforcement, and forestry jobs. Unemployment in the rest of Clallam County averages approximately eight percent. The village and marina support numerous small businesses (MCRC pers. comm. 2002).

The difficult social and economic conditions of the Makah Indian Nation are, in part, due to its remoteness. The Reservation is extremely isolated from other communities within Clallam County, the Olympic Peninsula and Washington State in general. Clallam County's major commercial center and county seat, Port Angeles, is 75 miles from Neah Bay. Seattle is 225 miles away, and Forks, the closest city center, is 60 miles away (Trettevick 1999).

5.0 ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

5.1 Tides and Tidal Currents

5.1.1 No Action Alternative

Tides and tidal currents would not be affected by this alternative. The sediment elevation within the fish gap would remain above the level which allows for water flow through between the eastern side of the marina and the outer bay.

5.1.2 Dredge the Fish Gap

The project would return the elevation within the fish gap to the desired level and allow for fish passage and water exchange during all but the lowest tides. This would alter the current tidal influence in the immediate area of the fish gap. Placement of the sand at Evans Mole may alter the tidal currents in the immediate area of the disposal site.

5.2 Sediments

5.2.1 No Action Alternative

Sediment quality would not be affected by this alternative.

5.2.2 Dredge the Fish Gap

Effects on sediment quality associated with the project include minor changes in physical and conventional characteristics of surface sediments, and temporary reductions in dissolved oxygen in surface sediments. The proposed fish gap maintenance would not permanently alter the sediment substrate as it is anticipated that the newly exposed sediments would quickly develop similar physical and conventional characteristics of the sediments currently on the surface at both the fish gap and Evans Mole. There would be no long term effects to sediment quality from this project.

5.3 Water Quality

5.3.1 No Action Alternative

Water quality would not be affected by this alternative.

5.3.2 Dredge the Fish Gap

Only temporary and slight reduction in water quality would be expected from fish gap maintenance activities. Removal of sand from the gap and placement at Evans Mole could cause an increase in turbidity and reduced dissolved oxygen (DO) at the project site. However the work would be done at the lowest tide possible and in a sequence that would minimize in-water work. Any increase in turbidity or reduction in DO caused by these activities are unlikely but if they do occur would be localized and temporary. Tidal flushing within Neah Bay would also render any increase in turbidity negligible. The proposed project would not result in any long-term effects on turbidity levels within Neah Bay.

Water quality within the marina basin would likely improve due to the project as continuous flushing would occur between the outer bay and the protected marina waters and disperse contaminants likely present due to boat and fishing activities.

5.4 Biological Resources

Impacts to Threatened and Endangered species are addressed in Section 5.5.

5.4.1 Vegetation

5.4.1.1 No Action Alternative

Existing vegetation would not be affected by this alternative.

5.4.1.2 Dredge the Fish Gap

Fish gap maintenance would have no effect to existing vegetation at either the fish gap or Evans Mole. Both sites are currently devoid of vegetation and would remain unchanged after the project. There is road access to both sites and no vegetation would need to be removed to facilitate the project.

5.4.2 Marine Invertebrates

5.4.2.1 No Action Alternative

Marine invertebrates in the area would not be affected by this alternative.

5.4.2.2 Dredge the Fish Gap

It is expected that populations of the benthic community, specifically marine invertebrates, in the immediate vicinity would be reduced. However, the benthic and epibenthic species are expected to recover shortly after maintenance activities are completed. Past investigations completed for dredging work in Gray's Harbor have produced data that indicates that disturbed benthic communities recolonize quickly (SAIC 2005). It is likely that the same results would apply to the fish gap maintenance activities in Neah Bay. Since new communities would establish quickly at the project site, no long-term loss of biological productivity is expected. Impacts related to the project would be minor, temporary, and localized.

5.4.3 Fish

5.4.3.1 No Action Alternative

The fish community in the area would not be affected by this alternative.

5.4.3.2 Dredge the Fish Gap

Fish gap maintenance is not expected to have a significant effect on fish since the dredging would take place during the minus tide and in-water work would be minimized. However, temporary effects on fish communities are possible during excavation and placement activities from increased suspended sediment and reduced dissolved oxygen. If fish are in the vicinity, they are expected to avoid the project site, resulting in a temporary displacement of fish from the area. After the

conclusion of the project, these species should return immediately. Impacts to Threatened and Endangered fish are addressed in Section 5.5.

The local fish community would likely benefit from improved access through the fish gap and improved water quality within the marina basin.

5.4.4 Marine Mammals

5.4.4.1 No Action Alternative

Marine mammals would not be affected by this alternative.

5.4.4.2 Dredge the Fish Gap

Marine mammals are not likely to be affected by the fish gap maintenance. The project sites are near the shoreline in the protected waters of the Bay; areas rarely frequented by marine mammals (Calambokidis *et al.* 1987), except California sea lions. If California sea lions are present in the marina they are likely to avoid the construction area. Any impacts would be minor and temporary and the sea lions are expected to return after project completion.

5.4.5 Birds

5.4.5.1 No Action Alternative

Birds would not be affected by this alternative.

5.4.5.2 Dredge the Fish Gap

The project area is not notably utilized as foraging habitat for the majority of bird species known to inhabit the region. The temporary and very localized maintenance work would not have a substantive effect on the local populations of these birds, as they would be expected to avoid the work area and forage along undisturbed portions of the Bay. No nesting or roosting habitat would be physically altered. As a result, the project would have little or no effect on regional bird populations.

Bald Eagle

All known eagles' nests are greater than ½ mile away from the project site. In addition, due to the timing of the proposed project (December) any young eagles would be fledged prior to commencement of project work, and therefore no disturbance to nesting eagles is expected. Adult eagles are highly mobile and would likely avoid the construction area. As a result, the project is expected to have little to no effect on the resident bald eagle population in Neah Bay.

5.5 Threatened and Endangered Species

A complete list of the threatened and endangered species that may occur in the Neah Bay area, and thus may be affected by the proposed project, are listed in Section 4.5. This section summarizes the potential impacts to each ESA-listed species and their designated critical habitat. A Biological Evaluation (BE) with comprehensive discussions regarding the effects of the proposed fish gap maintenance on these species and their designated critical habitat was prepared

to facilitate consultation under Section 7 of the Endangered Species Act, with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

5.5.1 No Action Alternative

Under this alternative the fish gap would continue to not function as intended. Juvenile salmonids would be forced into deepwater around the marina breakwater in order to pass the area. This may result in a sustained increase in juvenile salmonid mortality due to predation from species that inhabit the deeper water outside of the marina breakwater. In addition, water quality inside the marina would continue to degrade as no flushing would occur through the fish gap.

5.5.2 Dredge the Fish Gap

Effects to individual listed species under this alternative are discussed below.

Puget Sound Chinook Salmon

Increased turbidity, due to the project, could affect juvenile salmonids occurring in the immediate project area through temporary decreased visibility for foraging activities. However, total suspended solids (TSS) levels sufficient to cause such effects would be very minor and temporary in extent. In-water work would be minimized to limit adverse impacts to water quality. Adult salmonids are expected to avoid the project area. Juvenile salmonids, if present, are more likely to be influenced by the project as they stay close to the shorelines during migration and feeding. Impact to these fish would be minimized by working within the established work window (July 16 through March 1). Work accomplished within this window would minimize impact to the smallest of juvenile salmon which are likely to be present closest to the shoreline prior to July 15. After July, the relative size of sampled juvenile Chinook, >170 mm fork length, (NMFS, 2002) indicates that they are no longer obligate residents of the shallow nearshore habitat and would avoid the work area without harm. The USACE plans to conduct fish gap maintenance operations in early December. This start date has been selected in order to complete the in-water work during favorable tides and is within the designated work window.

Short-term impacts to benthic communities could result in disruptions to feeding for juvenile salmon within the small and localized project area. The anticipated quick recolonization of benthic invertebrates and the small area of the disturbance is not expected to result in a substantial impact on feeding activity.

As part of the proposal to list the Puget Sound Chinook salmon ESU (63 FR 11481), NMFS also designated critical habitat. The designated critical habitat does not extend westward of the Elwha River, and therefore does not include Neah Bay. As described above, the proposed project is not expected to affect Chinook salmon habitat in Neah Bay in a manner that would have adverse effects on Chinook salmon. Completion of the maintenance project would likely improve Chinook habitat by enabling passage of juvenile salmon through shallow water during all tides and improvement of water quality within the marina basin.

Chinook salmon and their habitats may experience minimal short-term impacts as stated above. Yet, no long-term effect on migration, reproduction, spawning, or feeding habitat is anticipated.

Hood Canal Summer-Run Chum Salmon

It is believed that Hood Canal chum salmon would only be in the area of Neah Bay for short periods of time (if at all) for foraging and to seek refuge on their way to Hood Canal and associated rivers. Maintenance activities would be conducted within the established construction window and in a way as to minimize in-water work and therefore, impacts to migrating Hood Canal summer run chum salmon are expected to be negligible.

Steller Sea Lion

Steller sea lions are uncommon in Neah Bay and no designated critical habitat occurs in the project area. In addition, Steller sea lions are highly mobile and if present would likely avoid the immediate site during maintenance operations. The construction may have a minor, temporary effect on their foraging and other behavior. The infrequency of species occurrence near Neah Bay, especially during the construction period, suggests that Steller sea lions would only be insignificantly, if at all, affected by fish gap maintenance activities.

Marbled Murrelet

Effects to marbled murrelets are anticipated to be insignificant due to the highly localized and temporary nature of the breakwater repair project and the relatively unlikely occurrence of the species in the project area. Any murrelets near the project should be able to easily avoid the site during maintenance work, and would be able to locate similar nearby habitat to utilize as foraging areas.

Coastal/Puget Sound Bull Trout

Water quality impacts (i.e. increased turbidity and decreased DO) to migrating anadromous bull trout, if present, are expected to be minimal in extent and duration. Completion of fish gap maintenance during the established fish window and at minus tides would minimize impacts to bull trout by operating during time periods not associated with peak periods migration. As a result, impacts to migrating anadromous bull trout are expected to be insignificant.

Brown Pelican

Pelicans are generally at their greatest vulnerability to disturbance during the breeding season. They are thought to be more adaptable in responding to a disturbance when not breeding since they are not held to a relatively limited geographic area as they are during the breeding season (Gress and Anderson 1983). As there are no breeding areas in Washington, any pelicans in the area of the project would be likely to easily avoid the construction, and any potential short-term direct affects would be minimal.

The proposed project would have no permanent effects on the brown pelican food base, although some localized, temporary dislocations of prey items and therefore disruption to foraging could be expected to result from benthic and forage fish disturbance and the

noise of heavy equipment. No known perching spots or night roost areas would be affected by maintenance work. As a result any impact to brown pelicans in Neah Bay is expected to be temporary and insignificant.

Southern Resident Killer Whale

Resident Killer Whales could be present in the Strait of Juan de Fuca during fish gap maintenance activities. However, the water depth between Waadah Island and Bahoda Point, at the entrance to Neah Bay, is approximately 20 feet. This depth likely restricts whale access to the bay. The proposed project would have no permanent effects on southern resident killer whale food base, which is primarily salmon or salmon habitat. No effect is expected to southern resident killer whales from the fish gap maintenance project.

Eulachon

There is no known eulachon population in or near Neah Bay; however it is possible that adult eulachon might enter the bay temporarily for foraging or refuge during migration east toward inland rivers for spawning. Temporary effects to fish are possible during maintenance activities. Increases in turbidity and reductions in DO may occur as a result of excavation and placement of sediments. These potential increases in turbidity are expected to be temporary and minor, with little potential to impact forage fish. Maintenance work would be conducted at the lowest tides possible to reduce likelihood of fish presence in the area and therefore effects to eulachon are anticipated to be negligible.

Eulachon, like, juvenile salmonids may benefit from the project due to increased access through the marina and improved water quality within the marina.

5.6 Cultural Resources

5.6.1 No Action Alternative

Cultural resources would not be affected by this alternative.

5.6.2 Dredge the Fish Gap

No impacts to prehistoric cultural deposits are anticipated as a result of this project. Although a number of cultural resources sites are documented within the general vicinity of the project, they are outside of the project APE, as defined. The project APE lies within an area subject to erosional forces and is within the prism of an existing channel. Moreover, the fish gap has been dredged four times since construction in the mid-1990s. The nature of the undertaking (maintenance work entirely within an existing federal navigation project of long standing) is the type that has no potential to cause effects to historic properties. No archaeological monitoring is recommended. The Plans and Specifications and contract scope of work will include specific instructions to the Corps construction manager and construction contractor to ensure that any inadvertently discovered cultural material are not affected by this undertaking.

5.7 Air Quality

5.7.1 No Action Alternative

Air quality would not be affected by this alternative.

5.7.2 Dredge the Fish Gap

During the maintenance project, there would be a temporary and localized reduction in air quality due to emissions from operating equipment. These emissions are not expected to cause adverse health effects or result in violation of applicable air quality standards. Therefore, impacts would not be significant.

5.8 Noise

5.8.1 No Action Alternative

Noise levels would not be affected by this alternative.

5.8.2 Dredge the Fish Gap

Ambient noise levels would temporarily increase due to operation of equipment during maintenance work. Noise type would shift from natural sources, such as wind and surf, to equipment noise. However, effects on birds, wildlife, and humans would be temporary and localized, and would occur during hours which are designated by the Tribe for work in a residential area. Applicable noise ordinances would not be violated.

5.9 Recreation

5.9.1 No Action Alternative

Recreation would not be affected by this alternative.

5.9.2 Dredge the Fish Gap

During the maintenance work, the road between the fish gap and Evans Mole would see increase traffic with construction equipment moving between sites. This could have a temporary impact on recreational traffic in the area.

5.10 Socioeconomic

5.10.1 No Action Alternative

Socioeconomics would not be affected by this alternative.

5.10.2 Dredge the Fish Gap

Socioeconomics would not be affected by this alternative.

6.0 UNAVOIDABLE ADVERSE IMPACTS

The unavoidable adverse impacts of the proposed maintenance dredging of the fish gap include temporary stress and displacement of forage fish, temporary depression of benthic invertebrate populations in the dredged area, temporary traffic impacts on the road between the fish gap and Evans Mole, temporary water and air quality impacts, and noise disturbance to humans, birds, and marine mammals that may be present in the project area during construction. Given the

temporary, localized and discountable nature of these impacts, the effects are not considered significant.

7.0 AVOIDANCE AND MINIMIZATION OF EFFECTS

Adverse impacts would be avoided and minimized by using Best Management Practices (BMPs). For the fish gap maintenance project these would include:

- Constructing the proposed project during established in-water work window (July 16 – March 1)
- Efficient work scheduling and sequencing to limit the amount of work required below MLLW
- Placement of sediments at Evans Mole above MHHW during high tide and grading to final elevation at low tide to minimize turbidity effects.
- Appropriate sized equipment for the project would be utilized including excavators, bulldozers and dump trucks.
- All equipment would be cleaned prior to in-water construction work.
- Biodegradable hydraulic fluids would be used in machinery where appropriate.
- Refueling would not occur near the shoreline.
- Construction equipment shall be regularly checked for drips or leaks.
- At least one fuel spill kit with absorbent pads would be onsite at all times.

8.0 NATIVE AMERICAN TREATY RIGHTS

The proposed project has been coordinated with and is supported by the Makah Indian Tribe. The Tribe agrees the proposed project is not likely to interfere with the Makah Nations treaty fishing rights set forth in the Treaty of Neah Bay, 1855 (NWIFC 2002).

9.0 CUMULATIVE IMPACTS

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments, which would result from the effects of a proposed action when added to other past, ongoing, and reasonably foreseeable actions, regardless of what agency of government or person undertakes such other actions. Past actions at Neah Bay have resulted in considerable alteration of shoreline habitat, including significant changes in the littoral processes and wave patterns within the bay by the construction of the breakwater and armoring of almost the entire southern shore of the bay with riprap revetment.

The Corps' is currently proposing to conduct repairs to the North Breakwater in Neah Bay in summer/fall 2010. For this separate construction project, separate NEPA compliance will be prepared and submitted to the appropriate resource agencies in accordance with the regulations.

Other than the proposed repair to the North Breakwater, there are other potential future projects in Neah Bay by the Corps. The Makah Tribal Council submitted a request under Section 107 of the River and Harbors Act to the Corps' in April 2009, asking the Corps analyze the feasibility of maintenance dredging at the mouth of Neah Bay. In addition, the Corps has made a request for

funds to analyze the potential benefit of moving the existing outfall just east of the marina farther out into the bay to reduce the need for future maintenance dredging of the fish gap.

The Corps is not aware of any proposed non-federal projects in the vicinity of Neah Bay. Proposals for development or other projects that could have such impacts are limited by the sparsely developed nature of the surrounding area, and the lack of major commercial facilities or residential areas. In conclusion, the proposed Neah Bay fish gap maintenance project is not expected to have cumulative environmental impacts with other federal or non-federal projects. Therefore, this potential source of cumulative impacts is considered insignificant.

10.0 COORDINATION

Development and design of this project has been coordinated with involvement by the following agencies and entities:

- State of Washington Department of Fish and Wildlife (WDFW)
- U.S. Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- Washington Department of Natural Resources (WDNR)
- Washington State Historic Preservation Office (SHPO)
- Makah Tribal Council

The fish gap maintenance project would take place entirely on Tribal land. No state land or shoreline would be affected by the project.

11.0 ENVIRONMENTAL COMPLIANCE

11.1 National Environmental Policy Act

This Environmental Assessment (EA), prepared August 2009, is intended to achieve NEPA compliance for the proposed project. As required by NEPA, this EA describes existing environmental conditions at the project site, the proposed action and alternatives, potential environmental impacts of the proposed project, and mitigation measures to minimize environmental impacts.

11.2 Endangered Species Act of 1973 as amended (PL 93-205)

In accordance with Section 7(a)(2) of the Endangered Species act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must identify and evaluate any threatened and endangered species, and their critical habitat, that may be affected by an action proposed by that agency. The Biological Evaluation (BE) for the project, hereby incorporated by reference, comprises the Corps' evaluation of the proposed action's potential effects on threatened and endangered species. The BE determined that the proposed work may affect, but is not likely to adversely affect endangered or threatened species, including Puget Sound Chinook salmon, Coastal/Puget Sound bull trout, marbled murrelet, Hood Canal summer run chum, brown pelican, Stellar sea lion or eulachon. The BE determined the project would have no effect to Southern resident killer whale and that no critical habitat for any listed species was present in the action area. Formal consultation under Section 7 of the Act is not required.

11.3 Magnuson Fishery Conservation and Management Act

The Magnuson Fishery Conservation and Management Act requires Federal agencies to consult with the NMFS regarding actions that may adversely affect Essential Fish Habitat (EFH) for Pacific coast groundfish, coastal pelagic species, and Pacific salmon. An EFH determination was included in the BE submitted to the NMFS for review.

11.4 Marine Mammal Protection Act (MMPA)

The MMPA was enacted in 1972 and provides for the protection of all types of marine mammals and prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. No take or harassment of marine mammals is likely during the fish gap maintenance work. Any disturbance to marine mammals in the area would be temporary and insignificant.

11.5 Clean Water Act

Section 404 of the Clean Water Act authorized a permit program for the disposal of dredged or fill material into waters of the United States, and defined conditions which must be met by Federal projects before they may make such discharges. The Corps of Engineers retains primary responsibility for this permit program. The Corps does not issue itself a permit under the program it administers, but rather demonstrates compliance with the substantive requirements of the Act through preparation of a 404(b)(1) evaluation.

The Corps is preparing a 404(b)(1) evaluation to document findings regarding this project pursuant to Section 404 of the Act as well as Section 10 of the Rivers and Harbors Act of 1899. When completed, these documents can be found in Appendix B.

Section 401 of the Act requires federal agencies to comply with EPA or state water quality standards. EPA has delegated Section 401 regulatory authority to the Makah Tribal Council. This work requires a WQC from the Makah Tribal Council for compliance with Section 401 of the Clean Water Act. The request for this certification has been forwarded to the Tribe.

11.6 Washington State Hydraulic Project Approval (HPA)

No HPA is required, as this project is located on tribal lands.

11.7 Federal Coastal Zone Management Act (CZMA) Consistency Determination (16 USC 1456 et. seq.) and Washington State Shoreline Management Act

No CZMA Consistency Determination is required as the entire project is located on tribal land and is therefore excluded from the Act.

11.8 National Historic Preservation Act (16 U.S.C. 470)

The National Historic Preservation Act (16 USC 470) requires that the effects of proposed federal undertakings on sites, buildings structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated. The Neah Bay Fish Gap Maintenance Dredging project is Federal undertaking of the type which might affect historic properties. As such it is subject to the Section 106 process. The Corps, in order to comply with Section 106 of the NHPA has initiated historic properties studies for the proposed project. The APE for the project was defined as the dredging area, access roads, staging areas, disposal areas and all other areas where ground disturbing activity associated with this project. There are no recorded properties listed in, or eligible for listing in the National Register of Historic Places (NRHP) within the project area of potential effects (APE).

For Section 106 undertakings on tribal land, Section 106 requires consultation with the THPO in lieu of the SHPO. The Corps must also request tribal concurrence with determinations of eligibility. In 2002, the Corps consulted with Ms. Janine Bowechop, the Makah THPO, regarding 2002 maintenance dredging in the Neah Bay Marina. According to Ms. Bowechop, no recorded archeological sites exist within the immediate vicinity of the Neah Bay Marina (Bowechop, pers. comm. 2002). The Corps has initiated consultation with the Makah THPO for the 2009 project and anticipates concurrence with a finding of “No Historic Properties Affected” for this project.

11.9 Fish and Wildlife Coordination Act (16 U.S.C. 661)

The Fish and Wildlife Coordination Act (16 U.S.C. 661) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects. USACE’s consultation with USFWS regarding this project satisfies the requirements of this Act. A Fish and Wildlife Coordination Act Report is not required for maintenance work.

11.10 Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d)

The BGEPA prohibits the taking, possession or commerce of bald and golden eagles, except under certain circumstances. Amendments in 1972 added to penalties for violations of the act or related regulations.

No take of either bald or golden eagles is likely during the fish gap maintenance work. There are no know nests within a half mile of the project sites and the work would be completed during a time of year when no juvenile eagles are present.

11.11 Executive Order 12898, Environmental Justice

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

The project does not involve the construction or maintenance of a facility that would discharge pollutants or contaminants, so no human health effects would occur. Maintenance of these facilities would not affect property values in the area, or socially stigmatize local residents or businesses in any way. No interference with local Native American Nation's treaty rights would result from the proposed project; construction activities would not physically interfere with fishing, or impact fishery resources.

Coordination has occurred with the Makah Indian Tribe and efforts have been made to incorporate local concerns. Fish gap maintenance would not have an adverse effect on minority and low-income populations. Since no significant or adverse effects are anticipated to result from the project, it has been determined that no disproportional impacts would occur.

12.0 CONCLUSIONS

Based on the above analysis, the proposed 2009 Fish Gap Maintenance at Neah Bay, Washington is not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of an environmental impact statement.

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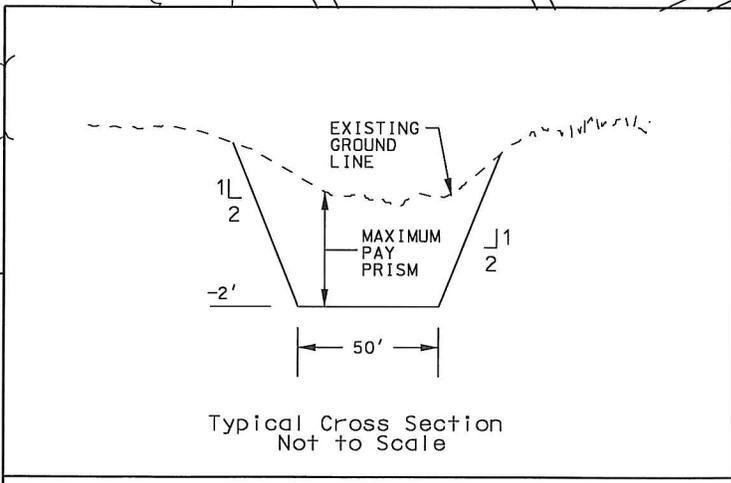
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APPENDIX A

Project Drawings



U. S. Army Engineers District, Seattle
 Corps of Engineers
 Seattle, Washington
 Neah Bay Fish Gap Excavation
 Neah Bay, Washington
 Fiscal Year 2009 Excavation
 Reference Number
 Public Notice: CENWS-OD-TS-NS-33