# **North Shore Levee West Segment**

Hoquiam, Washington

# Biological Evaluation Essential Fish Habitat Evaluation – CLOMR Submittal

April 17, 2020





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# **1.0 Introduction**

KPFF is partnering with the City of Hoquiam proposing to accredit the North Shore Levee West Segment project through the Federal Emergency Management Agency (FEMA) to mitigate flood risk and reduce flood insurance costs. A large portion of landowners in the City of Hoquiam are low in elevation in the floodplain and therefore face annual flood risks. The FEMA Flood Insurance Rate Maps designate these areas as Zone AE with given Base Flood Elevations. KPFF along with the City of Hoquiam seek FEMA approval that the project design meets the standards for accreditation through a Conditional Letter of Map Revision (CLOMR) which will reduce flood risks and decrease the burden of flood insurance premiums for residents. The purpose of this Biological Evaluation is to satisfy consultation requirements under Section 7 of the Endangered Species Act (ESA) in support of the CLOMR application to FEMA.

This project has not been associated with any previous ESA consultations. Throughout the process of a nearby project, the North Shore Levee, the City of Hoquiam and KPFF have coordinated closely with Federal, State, and local regulatory staff to identify and resolve issues of concern.

# 2.0 **Project Description**

The goal of this project is to provide additional flood protection for the City of Hoquiam residents—particularly those close to the Hoquiam River. The project area is linear with each segment of the levee being one of three (3) types (sheet pile, earthen, concrete). The levee is 5.2 miles long and is within the City of Hoquiam, WA limits. The project area is in Sections 1, 2, and 35, Townships 17N and 18N, and Range 10W. The proposed levee will be located along the left bank of the Hoquiam River. The closest waterbodies are Little Hoquiam River, a tributary to the West Fork Hoquiam and the East and West Forks of Hoquiam River which merge and empty into Grays Harbor located south of the project area. The proposed levee is located in Water Resource Inventory Area (WRIA) 22 (Lower Chehalis) and is within the Grays Harbor watershed (Hydrologic Unit Code 17100105) (Please see Figure 1).

The proposed levee will be comprised of three (3) different levee types within each segment: earthen, concrete, and sheet pile. The surrounding environmental conditions will influence the preferred levee design so that it is the least environmentally-impacting.

The project is divided into the following general construction sequence:

- Utility and structure accommodation: Prior to construction, affected curbs, fences, utilities, and outbuildings will need removal or relocation.
- Traffic Control: Aligning with a traffic control plan, devices such as signage, lighting, and detour directions will be located within the right-of-way.
- Temporary Erosion and Sedimentation Control (TESC) Best Management Practices (BMPs): General TESC BMPs will be installed after traffic control devices have been implemented. BMPs are described in more detail in Section 4.0 of this report. TESC BMPs will remain in place for the duration of the construction and will only be removed once construction activities are completed.
- Clearing and Earthwork: Although the alignment is predominantly in hardscape area, the project will require the removal of some vegetation along the work area. Earthwork that imports fill onto uplands will occur to increase the ground elevation along the levee alignment in previously-disturbed areas.

- Levee Construction: For earthen levee portions, a trench will be excavated along earthen portions of the levee and the trench will be backfilled with low-permeability structural fill to make a foundation. The fill will be compacted as the levee is constructed to ensure stability. For concrete levee portions, fill materials will need to be imported and placed over the foundation. Sheet piles will be driven into the ground to suitable depth to withstand anticipated forces based on geotechnical and structural recommendations.
- Stormwater Conveyance: The project proposes to utilize majority of the existing stormwater conveyance pipes, backflow protections, pump stations, and outfalls. Additional backflow devices will be installed to prohibit the backflow of floodwaters into protected areas. The 10th Street pump station will be relocated to within levee protection, upgraded to increase pumping capacity, and the outfall will be upgraded
- Mitigation and Restoration: In areas of disturbed soils, native grass seed will be used for stabilizing soils and bare slopes. In affected areas near the waterways, native vegetation will be planted in addition to soil stabilizing grasses. Where it is not feasible to install tree and shrubs due to levee standards, adjacent areas will be identified and improved as compensation.

# 3.0 Site Description

The North Shore Levee West Segment project is approximately 5.2 miles long and will provide protection to the residents of Hoquiam from coastal and riverine flooding associated with Grays Harbor and the Hoquiam River respectively. The baseline conditions of the proposed levee footprint were assessed via site visits and aerial imagery. The levee will be constructed in a location that will maximize residential protection while minimizing construction impacts.

The proposed levee upstream extent will originate on the south shoreline of the Little Hoquiam and Hoquiam River's confluence. The proposed levee alignment consists of approximately 5.2 miles through mostly developed residential and industrial areas, with a small portion in forested areas. Of the 5.2 miles of levee alignment, 2.8 miles utilizes natural high ground, resulting in 2.4 miles of proposed levee improvements. Proposed improvements include concrete flood walls, sheet pile flood walls, earthen levees, a raised access road, and stoplog closures that establish a barrier for flood relief. The levee structure varies in height from between 0 feet and 6 feet to establish a top levee elevation of 15.0 feet.

The project is entirely located within the City of Hoquiam in Grays Harbor County, Washington. The north terminus of the levee alignment starts at the intersection of Highway 101 and Queen Avenue and heads northeast along Queen Avenue. The levee follows the Hoquiam River meander south utilizing existing high ground, proposed earthen levee, concrete, and sheet pile structures. At the mouth of the Hoquiam River and Grays Harbor, the levee alignment turns west, utilizing portions of high ground where it reaches the south terminus at Paulson Rd.

Grays Harbor is an estuary for six rivers (Chehalis, Hoquiam, Humptulips, Wishkah, Johns, and Elk) and several smaller creeks and tributaries within the Chehalis River Basin. The harbor is approximately 15 miles long and 13 miles wide at the widest point. The Chehalis River Basin drains about 2,170 square miles and includes portions of Lewis and Thurston Counties; limited areas of Pacific, Cowlitz, Mason, Wahkiakum, and Jefferson Counties; and most of Grays Harbor County.

# 4.0 Proposed Best Management Practices (BMPs) and Minimization Measures

The most significant action for impact avoidance was to situate the alignment to avoid any aquatic areas including wetlands, Ordinary High Water Mark, swales or outfalls.

## 4.1 General Conservation Measures

During all phases of construction, best management practices will be used to minimize adverse impacts on surrounding systems and wildlife. These are to include but are not limited to the following:

- All construction related debris and waste within 150 feet of the riparian area will be gathered and removed daily.
- In areas where the levee will be constructed adjacent to existing riparian areas, excavation activities will be minimized and focused on areas only where work is necessary.
- Checking equipment for leaks and other problems that could result in the discharge of petroleum-based products or other material into waters of Grays Harbor.
- All construction work and related activities will follow local, State and Federal regulations.
- In areas where levee construction abuts steep slopes or with potential suspended sediment pathways to aquatic resources, appropriate erosion and runoff containment practices will be used to minimize sediment run-off into Hoquiam River.
- Levee structure siting will occur in the pre-determined footprint.
- Levee construction will be completed during the approved work window to ensure there are no effects on aquatic species in the Hoquiam River.

### 4.2 Minimization Measures

Project construction will be completed in compliance with Washington State Water Quality Standards (Washington Administrative Code [WAC] 173-201A), including:

- Petroleum products, fresh cement, lime, concrete, chemicals, or other toxic or deleterious materials will not be allowed to enter surface waters or onto land where there is a potential for reentry into surface waters.
- Fuel hoses, oil drums, oil or fuel transfer valves, fittings, etc., will be checked regularly for leaks, and materials will be maintained and stored properly to prevent spills.

A spill prevention, control, and countermeasures (SPCC) plan will be prepared by the contractor and used during all near-water demolition and construction operations. A copy of the plan will be maintained at the work site.

- The SPCC plan will outline BMPs, responsive actions in the event of a spill or release, and notification and reporting procedures. The plan will also outline management elements, such as personnel responsibilities, project site security, site inspections, and training.
- The SPCC plan will outline the measures to prevent the release or spread of hazardous materials found on-site and encountered during construction but not identified in contract documents, including any hazardous materials that are stored, used, or generated on the construction site during construction activities. These items include, but are not limited to, gasoline, diesel fuel, oils, and chemicals.

• Applicable spill response equipment and material designated in the SPCC plan will be maintained at the job site.

# **5.0 Action Area**

This section defines the geographic area that could be affected by the direct and indirect effects of the proposed action. The Action Area is established based on:

- The physical footprint of the proposed project (Figure 5), which includes the limits of proposed construction activities, and
- The terrestrial noise generated during sheet pile installation and other upland construction activities.

The Action Area for the proposed levee was calculated using analyses of noise and potential water quality and habitat alteration impacts.

## 5.1 In-Water Impacts

The area of direct effect includes in-water work disturbance at the locations of existing outfalls in the levee alignment. This work will be performed across/below the OHWM. This work will include installing a de-watering system, removing the existing outfall, replacing the outfall pipe, installing a new outfall, and finally removing the dewatering system. The existing 10th Street pump station is the only site planned for this outfall improvement portion of the levee project. Best Management Practices will be followed to ensure any disturbance is minimal and temporary. Additionally, there is the possibility of indirect effects such as erosion/run-off however any of these potential affects will be avoided or minimized by using Best Management Practices listed in Section 4. Underwater Noise impacts are not expected during this project.

### **5.2 Terrestrial Impacts**

The area of direct effect for terrestrial habitat includes the area in the proposed levee footprint. Where the levee alignment is immediately adjacent to the riparian areas, it will generally be constructed of sheet pile or concrete and will be located in previously-disturbed areas at the edge of existing development, thereby minimizing impacts to vegetation. Most of the riparian area where the levee system will be constructed lacks native or other significant riparian vegetation. There is the potential for landscape and water quality impacts as a result of levee construction—these effects are expected to be possible within 200 feet of the proposed levee footprint. Noise from construction related activities are expected about 0.25 miles including sheet pile driving.

### 5.3 Noise Impacts

Noise from construction activities can cause disturbance over distances for many species. Construction-related noise will solely be terrestrial, with no aquatic noise impacts. Construction equipment will include typical machinery such as excavators and backhoes as well as a vibratory hammer to drive sheet piles. The vibratory hammer is expected to create the most noise during construction (101 dBA at 50 feet from the source). The project site was analyzed for potential noise impacts using a technique recommended by WSDOT (WSDOT 2019). That guidance includes information regarding average noise levels associated with construction equipment (Thalheimer 2000) and noise attenuation data from the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Guidance (FTA 2006). The proposed levee site is a mix of residential, industrial and heavily vegetated lands, which creates a "soft site" that would attenuate noise at an approximate rate of 7.5 dBA per doubling distance. Estimated background noise is 75 dBA for the length of the proposed levee based on local populations and ratios of vegetation to impervious surfaces. Noise impacts may vary slightly due to small changes in ambient noise as localized environments shift, however this noise impact action area will assume the greatest distance for the entirety of the proposed levee.

Distance from Source (feet)	Point Source Noise Hard Site (-6.0 dBA)	Background Sound
50	110 dBA	75 dBA
100	104 dBA	75 dBA
200	98 dBA	75 dBA
400	92 dBA	75 dBA
800	86 dBA	75 dBA
1600	80 dBA	75 dBA

Table	1:	Project-related	d	Terrestrial	Noise	Attenuation
1 01010	•••	1 10,000 10,000		1 011 0001101	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,

The Action Area for direct construction actions (i.e. sediment run-off, substrate disturbance, etc.) is estimated to extend 100 feet landward from the constructed levee. Noise impacts, in particular point source noise of sheet pile driving, may extend up to 0.25 mile. Attenuation factors will vary through the alignment but there are generally hard site conditions. Noise levels from heavy equipment (73-101 dBA) and stationary power equipment (68 to 88 dBA) should be within 0.25 mile.

# **6.0 Baseline Environmental Conditions**

The habitat in the proposed footprint of the levee is mixed developed hardscape, bare ground, or natural conditions within residential neighborhoods, industrial areas, or riverine riparian and wetland areas. The use of derelict railway corridor as often as possible will minimize vegetation clearing. There are no designated critical habitats in the proposed Action Area; however, Section 7 provides a review of potential impacts to listed species from indirect effects.

The alignment footprint contains no stream crossings and avoids wetland areas.

# 7.0 Status of Species within the Action Area and Critical Habitat

This section discusses the ESA-listed species and critical habitat known to occur, or with the potential to occur, within the action area, which includes portions of inner Grays Harbor. Information for this biological evaluation (BA) regarding listed species was obtained in July 2019 from:

- USFWS (USFWS 2017a and 2017b) web database;
- NOAA Fisheries (NOAA Fisheries 2017) web database;
- Priority Habitat and Species (PHS) on the Web (WDFW 2017a); and
- Salmonscape (WDFW 2017b)

Table 2 identifies the specie	s listed under the ESA	that are addressed in	this biological evaluation.
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Species Name		ESA Listing	Critical Habitat	
Common	Scientific	ESU or DPS	Status	
Names	Names			
		Fish		
Chinook salmon	(Oncorhynchus	Lower Columbia	Threatened	Designated, but
	tshawytscha)	River ESU	(NOAA Fisheries)	not in action area
		Upper Willamette	Threatened	Designated, but
		River ESU	(NOAA Fisheries)	not in action area
Chum salmon	(Oncorhynchus	Columbia River	Threatened	Designated, but
	keta)	ESU	(NOAA Fisheries)	not in action area
Bull trout	(Salvelinus	Coastal Puget	Threatened	Designated
	confluentus)	Sound DPS	(USFWS)	
Pacific Eulachon	(Thaleichthys	Southern DPS	Threatened	Designated, but
(Smelt)	pacificus)		(NOAA Fisheries)	not in action area
North American	(Acipenser	Southern DPS	Threatened	Designated
Green Sturgeon	medirostris)		(NOAA Fisheries)	
		Birds		-
Marbled murrelet	(Brachyramphus	N/A	Threatened	Designated, but
	marmoratus)		(USFWS)	not in action
Western snowy	(Charadrius	N/A	Threatened	Designated, but
plover	alexandrinus		(USFWS)	not in action area
	nivosus)			
Streak Horned	(Eremophila	N/A	Threatened	Designated, but
Lark	alpestris strigata)		(USFWS)	not in action area
Yellow-billed	(Coccyzus	Western DPS	Threatened	Designated, but
cuckoo	americanus)		(USFWS)	not in action area

Table 2: United States Endangered Species Act listed species and critical habitat that may be affected by the North Shore Levee West Project

## 7.1 Salmonids and Char

### 7.1.1 Chinook salmon (Oncorhynchus tshawytscha)

Chehalis fall Chinook and spring Chinook are not warranted for listing (Determination March, 1998). Chehalis spring Chinook are identified as a stock based on their distinct spawning distribution and timing and early river entry. Chehalis fall Chinook are a native stock with wild production, although there are various non-native hatchery fall Chinook stocks introduced into the basin for a couple of decades prior to the 1970s. Spawning populations of Chinook salmon are distributed along the Pacific Coast of North America from the Ventura River in southern California to Point Hope, Alaska, and in northeast Asia from the Anadyr River south to Hokkaido, Japan (Wydoski and Whitney, 2003). Chinook salmon can be found throughout the year in the Salish Sea.

Factors leading to the decline of Chinook salmon populations in Puget Sound include:

- Degradation of spawning and rearing habitat due to human activities.
- Limited access to historic spawning habitat due to development activities.
- Altered stream flow regimes and water temperatures.
- Loss of riparian vegetation and soils that alter hydrologic and erosion rates.
- Increased sedimentation.

- Decreased large woody debris (LWD) in rivers and loss of potential recruitment of LWD.
- Filled estuarine rearing area.
- Channelizing and diking of rivers leading to loss of rearing and spawning habitat.
- Dams blocking access to historic spawning and rearing channels and altering hydrologic regimes, water temperature and sediment transport.
- Over exploitation of Chinook stocks by commercial and recreation fisheries have contributed to lower numbers of returning adult salmon.
- Introduction of non-native species have increased populations of predator and competitive species.
- Hatchery programs have led to competition between artificially produced fish with naturally reproduced fish.

#### Critical Habitat

The final designation of critical habitat for Puget Sound evolutionary significant unit of Chinook salmon was published on September 2, 2005 (70FR 52630) (Service, Chinook salmon Species Profile, 2019). Physical Biological Features (PBFs) of the nearshore marine critical habitat includes:

- Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.
- Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

#### 7.1.2 Chum salmon (Oncorhynchus keta)

The Pacific Coast Evolutionarily Significant Units (ESU) of the Washington Coast Chum (*Oncorhynchus keta*) is listed as Threatened under the Endangered Species Act, (59FR 46808) (Service, Chum salmon Species Profile, 2019). The Pacific Coast ESU includes Chum salmon from a large geographic area of considerable diversity. In the southern portion of the coastal ESU, neither the historic nor the present limit of spawning and distribution of Chum salmon is known with certainty. Thus, it is unclear whether the historic range has been reduced.

Chum salmon have a life history that includes spawning and incubation in rivers and upon emergence, followed by nearly immediate migration to saltwater to feed, grow, and mature before returning to freshwater to spawn. They are vulnerable to many stressors and threats including blocked access to spawning grounds and habitat degradation caused by dams and culverts.

Much of the Pacific coast has also been experiencing drought conditions in recent years, which may depress freshwater production even of species such as Chum salmon that spend only a brief time in freshwater. At this time, we do not know whether these climate conditions represent 1) a long-term shift in conditions that will continue to affect salmonids into the future or 2) short-term environmental fluctuations that can be expected to reverse in the near future.

#### Critical Habitat

There is no critical habitat was designated for Pacific Coast chum.

## 7.1.3 Bull trout (Salvelinus confluentus)

Coastal-Puget Sound bull trout was listed as Threatened by the US Fish and Wildlife Service (USFWS) in 1998 (Service, Bull Trout Species Profile , 2019). Bull trout in the Coastal-Puget Sound interim recovery unit exhibit anadromous, adfluvial, fluvial, and resident life history patterns. The anadromous life history form is unique to this unit. This interim recovery unit currently contains 14 core areas and 67 local populations (USFWS 2004b). Bull trout are distributed throughout most of the large rivers and associated tributary systems within this unit. With only a few exceptions, bull trout continue to be present in nearly all major watersheds where they likely occurred historically within this unit. Generally, bull trout distribution has contracted and abundance has declined especially in the southeastern part of the unit.

The current condition of the Bull trout in this interim recovery unit is attributed to the adverse effects of dams, forest management practices (e.g., timber harvest and associated road building activities), agricultural practices (e.g., diking, water control structures, draining of wetlands, channelization, and the removal of riparian vegetation), livestock grazing, roads, mining, urbanization, poaching and incidental mortality from other targeted fisheries, and the introduction of non-native species

#### Critical Habitat

Critical habitat for Coastal-Puget Sound bull trout was originally designated in 2005 (70FR 56212 56311) (Service, Bull Trout Species Profile, 2019) and revised in 2010 (75FR 63898 64070) (Service, Bull Trout Species Profile, 2019).

As of 2010, there is 19,729 miles of streams (which includes 754 miles of marine shoreline) as critical habitat for Bull trout in Washington, Oregon, Nevada, Idaho, and Montana. PBFs of the nearshore marine critical habitat include:

- Colder water temperature—they typically prefer water temperatures between 5 and 15 degrees Celsius.
- Cleanest stream substrates for spawning and rearing.
- Complex habitats—streams with riffles and deep pools, undercut banks, lots of large wood/logs for shelter and foraging.
- Habitat connection—rivers/lakes/oceans that connect to headwater streams for annual spawning and feeding migrations.

There is not designated critical habitat in the action area but the action area does contain primary constituent elements of bull trout critical habitat.

### 7.1.4 Pacific Eulachon (*Thaleichthys pacificus*)

The Southern Distinct Population Segment (DPS) of Pacific Eulachon was listed as threatened on 18 March 2010 (75 FR 13012). Eulachon are small, anadromous fish that typically spend three to five years in offshore marine waters and return to glacial-fed rivers to spawn in late winter and early spring in tidal portions of the rivers. In Washington, they are present predominantly in the mainstem Columbia River up to approximately Bonneville Dam. They spawn annually soon after arrival in the lower Columbia and the Cowlitz rivers, with irregular runs and spawning events in Willapa Bay (North, Naselle, Nemah, Bear, and Willapa rivers); the Copalis, Moclips, Quinault, Queets, and Bogachiel rivers; and the Humptulips, Chehalis, Aberdeen, and Wynoochee rivers that flow into Grays Harbor (75 FR 13012). Most Pacific eulachon production for the Southern DPS occurs in the Columbia River Basin (75 FR 13012). Professional opinions differ regarding the number of Eulachon in Grays Harbor. They have been previously described as "common" in the waters of Grays Harbor (Monaco et al. 1990) but are considered to occur only rarely in the sloughs of the Chehalis River estuary or the Chehalis system (75 FR 13012).

A recently published Grays Harbor Juvenile Fish Use Assessment, Recreation and Conservation Office (RCO) No.10-1412P Literature Review, Habitat Inventory, and Study Plan, mentions eulachon only to state that the species was not mentioned in a previous study (Sandell et al. 2011; as cited in HDR 2011). An updated Juvenile Fish Use Assessment document published in 2013 (Sandell et al. 2014) makes no mention of any eulachon presence at all.

The evidence cited above suggests that, while eulachon occur at least sporadically in Grays Harbor and the Chehalis River Basin, they are not expected to occur within the action area in great numbers, particularly not during the in-water work window, which avoids their peak run timing.

#### Critical Habitat

The waters of Grays Harbor are not designated as critical habitat for Pacific Eulachon, and no critical habitat occurs within the action area (76 FR 65324).

#### 7.1.5 North American Green Sturgeon (*Acipenser medirostris*)

Green sturgeon are widely distributed and spend the majority of their lives in nearshore waters and estuaries. Early life-history stages (< four years old) is in freshwater and after marine and estuarine periods adults return to freshwater in early spring and spawn in late spring to early summer when attaining 15 years of age or more and greater than 4 feet (130 cm) in length. The green sturgeon ranges from Mexico to at least Alaska in marine waters, and forages in estuaries and bays ranging from San Francisco Bay to British Columbia (NOAA Fisheries 2005).

There are two (2) DPSs of green sturgeon: the Southern DPS has been listed as a threatened species under the ESA (71 FR 17757), whereas the Northern DPS of green sturgeon remains a federal Species of Concern. NOAA Fisheries published a final rule on 7 April 2006 listing the Southern DPS as threatened (71 FR 17757), which took effect on 6 June 2006. While there is no evidence of current spawning or presence of eggs or larvae in the Chehalis River or other tributaries of Grays Harbor (NOAA Fisheries 2005), green sturgeon are known to congregate during summer months in coastal estuaries, such as Grays Harbor, Willapa Bay, and the Columbia River estuary. This indicates probable offshore migration along the Washington coast (NOAA Fisheries 2005). Adult green sturgeon are common in the seawater and mixing zones of Grays Harbor during high salinity periods, with the highest abundances from approximately July through early October (Monaco et al. 1990).

The species is not known to use the lower Chehalis River at any time (Deschamps et al. 1971). Green sturgeon may be present in Grays Harbor, possibly using estuarine habitat as forage areas during the summer.

#### Critical Habitat

NOAA Fisheries designated critical habitat for the Southern DPS of green sturgeon in October 2009 (74 FR 52300). Critical habitat was designated in three different habitats, including 1) freshwater riverine systems, 2) estuarine areas, and 3) nearshore marine waters. The areas designated comprise of approximately 320 miles of freshwater river habitat, 897 square miles of estuarine habitat, and 11,421 square miles of coastal marine habitat.

The "estuarine areas" designation includes all tidally influenced areas of Grays Harbor up to the elevation of mean higher high water (MHHW), including tributaries upstream to the head of tide (73 FR 52084-52110). The critical habitat designation defines the following geographically-relevant PCEs for estuarine habitats:

- 1. Food resources: Abundant prey items within estuarine habitats and substrates for juvenile, subadult, and adult life stages.
- 2. Water quality: Water quality, including temperature, salinity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages.
- 3. Migratory corridor: A migratory pathway necessary for the safe and timely passage of Southern DPS fish within estuarine habitats and between estuarine and riverine or marine habitats.
- 4. Depth: A diversity of depths necessary for shelter, foraging, and migration of juvenile, subadult, and adult life stages

### 7.2 Birds

#### 7.2.1 Marbled murrelet (*Brachyrampus marmoratus*)

Marbled murrelets (*Brachyramphus marmoratus*) were listed as Threatened under the Endangered Species Act by the USFWS in 1992. Marbled murrelets are year-round residents on Washington marine waters. These birds forage in sheltered waterways and harbors generally within 1.2 miles of shore, selecting feeding areas that are closer to shore than other alcid seabirds that forage in Washington waters.

Pacific sand lance (*Ammodytes hexapterus*) is the primary prey species of marbled murrelets, constituting over 65% of their diet, especially during the breeding season. Other prey species include pacific herring (*Clupea harengus*), seaperch (*Cymatogaster aggregate*), euphausiids, and other marine invertebrates.

Marbled murrelets breed from April 1 to September 15 and nest in mature and old growth forests within 60 miles of marine waters. Potential threats to marbled murrelet populations include loss of old-growth forest, disturbance during nesting, nest predation, oil spills, entanglement in gill nets, and disturbance during foraging.

Marbled murrelets forage and winter in marine habitats in Grays Harbor in relatively low densities with the highest numbers generally observed in fall. There are no appropriate marbled murrelet nest sites in the Action Area; however, these birds likely forage nearby.

#### Critical Habitat

Critical Habitat for the marbled murrelet was designated in 1996 to protect nesting areas with the physical or biological features (PBFs) described as 1) trees with potential nesting platforms and, 2) forested areas within  $\frac{1}{2}$  mile of the potential nest trees with a canopy height of at least  $\frac{1}{2}$  of the site potential tree height (81 FR 51348 51370) (Service, Marbeled Murrelet Species Profile, 2019).

Marine forage areas are not specifically designated as critical habitat however, forage habitat is implied as important through general PBFs including but not limited to the following:

- Space for individual and population growth and for normal behavior;
- Food, water, air, light, minerals or other nutritional or psychological requirements;
- Cover or shelter;
- Sites for breeding, reproduction, rearing of offspring; and
- Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

#### 7.2.2 Western snowy plover (Charadrius alexandrinus nivosus)

The Western snowy plover was listed as a threatened species by the USFWS in 1993. This small shorebird nests in coastal habitats, such as sand spits, dune-backed beaches, vegetated beach strands, open areas around estuaries, and beaches at river mouths. The largest concentrations of western snowy plovers are in southern California; the northernmost populations nest along the southern Washington coast. Some snowy plovers are resident, while others migrate to wintering areas. The northernmost wintering area known on the Pacific Coast is near Cape Shoalwater in Pacific County, Washington. Two (2) breeding sites are located in the state of Washington, one at Leadbetter Point in Willapa Bay and the other at Damon Point in Grays Harbor. The Damon Point site is outside the action area and is not expected to be affected by the proposed action.

Western snowy plover are not documented or expected to occur at either the project site, nor does the Action Area provide any suitable nesting habitat. However, they are being considered in this biological evaluation because they are highly migratory and there is the possibility of their presence.

#### Critical Habitat

Critical habitat for snowy plover was designated on 19 June 2012 and includes a portion of terrestrial habitat in outer Grays Harbor that includes portions of the Oyhut wildlife management unit and Damon Point spit (also called Protection Island) (77 FR 36728). The designated unit includes sandy beaches that are relatively undisturbed by human or tidal activity (potential nesting habitat), large expanses of sparsely vegetated barren terrain, and mudflats and sheltered bays that provide ample foraging areas.

This area is outside of the action area and would not be affected by the proposed action.

### 7.2.3 Streaked horned lark (*Eremophila alpestris strigata*)

The streaked horned lark (*Eremophila alpestris strigata*) was listed as Threatened by the US Fish and Wildlife Service (USFWS) under the Endangered Species Act in 2013 (78 FR 61451 61503) (Service, Streaked Horned Lark Species Profile, 2019).

They are small, slender, long-winged birds with distinctive black "horns," which are actually feather tufts. The male's face and throat are yellowish. Adults have a black bib covering the chest and black whisker marks. Breeding is thought to occur at 1 year of age. Most Washington streaked horned lark populations over-winter in Oregon and begin to arrive at nesting grounds in late February; nesting begins in late March and continues into June. The nest consists of a shallow depression built in the open or near a grass clump and lined with fine dead grasses. The female commonly lays four greenish or grayish eggs speckled with brown. Incubation lasts 11 days and the young are able to fly within 9 to 12 days after hatching. Larks eat a wide variety of seeds and insects. It has been observed that they select habitats based on the structure of the vegetation rather than the presence of any specific food plants.

Streaked-horned larks are being included in this biological evaluation because Grays Harbor County is listed in its current range.

#### Critical Habitat

Approximately 1,941 acres of land were designated as critical habitat for the Streaked Horned Lark in 2013 (78 FR 61505 51589) (Service, Streaked Horned Lark Species Profile, 2019). The streaked horned lark nests on the ground in sparsely vegetated sites dominated by grasses and forbs. Historically this type of habitat was found in prairies in western Oregon and Washington, in dune habitats along the coast of Washington, on the sandy beaches and spits along the Columbia and Willamette Rivers, and in grasslands, estuaries, and sandy beaches in British Columbia.

Today the streaked horned lark nests in a broad range of habitats, including native prairies, coastal dunes, fallow and active agricultural fields, wetland mudflats, sparsely-vegetated edges of grass fields, recently planted Christmas tree farms with extensive bare ground, moderately- to heavily-grazed pastures, gravel roads or gravel shoulders of lightly-traveled roads, airports, and dredge deposition sites in the lower Columbia River. Wintering streaked horned larks use habitats that are very similar to breeding habitats.

There are many continuing threats to local streaked horned lark populations, the majority of these threats are connected to critical habitat. A few reasons for decline are:

- Loss of natural disturbance processes (such as fire and flooding) which is followed by the encroachment of woody vegetation;
- Invasion of coastal areas by nonnative beach grasses;
- Inbreeding depression;
- Incompatible management practices; and
- Aircraft strikes

There is not designated critical habitat in the Action Area.

#### 7.2.4 Yellow-billed cuckoo (*Coccyzus americanus*)

The yellow-billed cuckoo was listed as Threatened by the US Fish and Wildlife Service (USFWS) in 2014 (79FR59991 60038) (USFWS, 2019). Yellow-billed cuckoos are fairly large, slim birds. They migrate north in the summer to breed and then migrate south to Central America in the winter.

The mostly yellow bill is almost as long as the head, the thick and slightly down curved. They feed on insects and prefer habitats that have dense cover and nearby water sources such as woodlands and dense thickets along streams and marshes.

#### Critical Habitat

Critical habitat was later designated for the Western Distinct population in December 2014 (79FR 71373 71375) (USFWS, 2019). There is not currently any designated critical habitat in Washington State, but these birds are highly migratory and have been spotted in Grays Harbor County which is why they are included in this biological evaluation.

### 7.3 Additional Listed Species for Consideration

The species listed below and/or their designated critical habitat may have ranges that overlap with the project site and/or vicinity based on USFW species lists (<u>https://ecos.fws.gov/ipac/location/index accessed December 20</u>, 2019). However, these species are not likely to be present at the project site or proposed mitigation sites due to a lack of suitable habitat. These species are, therefore, unlikely to be affected by the proposed project. These species are included in Table 3 below.

Species Name		ESA Listing	Critical Habitat	
Common Name	Scientific Name	ESU or DPS	Status	
		Marine Turtles		
Loggerhead sea	(Carette caretta)	N/A	Endangered	Designated, but
turtle			(NOAA)	not in action area
Olive Ridley sea	(Lepidochetys	N/A	Threatened	Designated, but
turtle	olivacea)		(NOAA)	not in action area
		Birds		
Northern spotted	(Strix occidentalis)	N/A	Threatened	Designated, but
owl			(USFWS)	not in action area
Short-tailed	(Phoebastria	N/A	Threatened	Designated, but
albatross	albatrus)		(USFWS)	not in action area
Insects				
Oregon silverspot	(Speyeria zerene	N/A	Threatened	Designated, but
butterfly	hippolyta)		(USFWS)	not in action area

Table 3: Species listed but not addressed in Biological Evaluation

# Loggerhead (*Caretta caretta*), Green (*Chelonia mydas*), and Olive Ridley (*Lepidochelys olivacea*) sea turtles

Loggerhead, green, and olive ridley sea turtles occasionally occur off the coasts of Washington and Oregon. They occasionally wash ashore in Oregon and Washington, though Grays Harbor is not typically considered to be suitable habitat for sea turtles. These sea turtle species nest in tropical or subtropical areas, and generally migrate offshore during a portion of their lives. No designated or proposed critical habitat for any species of sea turtle occurs within the action area. The action area does not contain habitat for these three (3) species and they are not expected to occur within the action area. The proposed project will have no effect on them, and they are not addressed further.

#### Northern Spotted owl (Strix occidentalis)

The Northern spotted owl (*Strix occidentalis caurina*) was listed as Threatened under the Endangered Species Act (ESA) by the US Fish and Wildlife Service (USFWS) in 1990 (55 FR 26114 26194) (Service, Species Profile for the Northern Spotted Owl, 2019). The spotted owl inhabits structurally complex forests from southwest British Columbia through the Cascade Mountains and coastal ranges in Washington, Oregon, and California, as far south as Marin County. Past habitat loss and current habitat loss are some of the major threats to the spotted owl, even though loss of habitat due to timber harvest has been greatly reduced on Federal lands over the past two decades. Many populations of spotted owls continue to decline, especially in the northern parts of the subspecies' range, even with extensive maintenance and restoration of spotted owl habitat in recent years. Managing sufficient habitat for the spotted owl now and into the future is important for its recovery.

#### Critical Habitat

Critical habitat for the Northern spotted owl was designated originally in 1991 (56FR 50701 50704) (Service, Species Profile for the Northern Spotted Owl, 2019) and a revised designation was finalized in 2012 (77FR 71875 72068) (Service, Species Profile for the Northern Spotted Owl, 2019).

Currently 9,577,969 acres in 11 units and 69 subunits across California, Oregon, and Washington are designated as critical habitat for the Northern spotted owl. Scientific research and monitoring indicate spotted owls generally rely on mature and old-growth forests because these habitats contain the structures and characteristics required for nesting, roosting, and foraging. Although spotted owls can disperse through highly fragmented forested areas, the stand-level and landscape-level attributes of forests needed to facilitate successful dispersal have not been thoroughly evaluated or described.

#### Short-tailed albatross (Phoebastria albatrus)

The short-tailed albatross is an extremely rare bird off Washington's coastline. Since the early 1990s, sightings have increased, and a few birds are reported annually off the west coast. Short-tailed albatrosses nest on islands off Japan and spend most of their lives at sea. USFWS lists for Grays Harbor County indicate that the species may occur off the coastline, but information regarding sightings along the coast of Grays Harbor is lacking.

Because of the lack of documented occurrences of short-tailed albatrosses in the action area and the rarity of their occurrence along the outer coast, the proposed project will have no effect on them, and they are not addressed further.

#### Oregon silverspot butterfly (Speyeria zerene hippolyta)

The Oregon silverspot butterfly (*Spyeria zerene hippolyta*) was listed as Threatened by the US Fish and Wildlife Service (USWFS) under the Endangered Species Act in 1980 (45 FR 44935 44939) (Service, Oregon Silverspot butterfly Species Profile, 2019). This is a medium-sized butterfly with a wingspan of approximately 2.2 inches. The upper surfaces are golden brown with numerous black spots and lines. Wing undersides are brown, orange-brown and tan with black lines and distinctive silver/black spots. Basal areas of the wings and body are covered in fine hairs. The Oregon silverspot butterfly is similar in appearance to two (2) other coastal subspecies of Speyeria zerene, the Behren's silverspot butterfly (S. z. behrensii) and Myrtle's silverspot butterfly (S. z. myrtleae), both of which are also federally listed.

The Oregon silverspot differs from the Behren's silverspot primarily by less dark basal suffusion on the upper sides of the wings and its relative smaller size. The Myrtle's silverspot is larger in size than the Oregon silverspot. Both the Myrtle's and Behren's silverspot butterflies occur well to the south of the Oregon silverspot.

The primary habitat characteristics important to the Oregon Silverspot are:

- Mild temperatures,
- Moderate rainfall,
- Frequent summer fog,
- Caterpillar host plants, and
- Adult nectar sources

The distribution of the Oregon Silverspot is highly dependent on the presence of these resources. They prefer areas with trees and large shrubs that can provide sheltered pockets that create favorable microclimates for favorable butterfly flight and resources.

#### Critical Habitat

Critical habitat for the Oregon silverspot butterfly was designated in 1980 (45 FR 44935 44939) (Service, Oregon Silverspot butterfly Species Profile, 2019). The designated critical habitat is in Lane County, Oregon.

### 7.4 WDFW Priority Habitats and Species

In addition to listed species, Table 4 below lists the following Priority Habitats and Species in the North Shore Levee West project area.

Species	Priority Area
Coho (Oncorhynchus kisutch)	Occurrence/Migration
Cutthroat (Oncorhynchus clarki)	Occurrence
Fall Chum (Oncorhynchus keta)	Breeding Area
Rainbow Trout (Oncorhynchus mykiss)	Occurrence/Migration
Steelhead (Oncorhynchus mykiss)	Occurrence/Migration
Chinook (Oncorhynchus tshawytscha)	Occurrence
Purple Martin ( <i>Progne subis</i> )	Breeding Area
Freshwater emergent wetland	Aquatic Habitat
Freshwater Forested/Scrub-Shrub Wetland	Aquatic Habitat

Table 4: WDFW Priority Habitat and Species in the North Shore Levee West project area

# 8.0 Effects Analysis

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02).

Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

### 8.1 Potential Direct Effects:

Summary of potential effects:

Construction Elements	Potential Direct Effect
Concrete Wall Levee Construction	Possible temporary increase in turbidity
	due to earth disturbing activities
	<ul> <li>Noise/acoustic impacts</li> </ul>
	<ul> <li>Disturbance of sub-surface habitat</li> </ul>
Sheet Pile Levee Construction	Possible temporary increase in turbidity
	due to earth disturbing activities
	<ul> <li>Noise/acoustic impacts</li> </ul>
	<ul> <li>Disturbance of sub-surface habitat</li> </ul>
Earthen Levee Construction	Possible temporary increase in turbidity
	due to earth disturbing activities
	Noise/acoustic impacts

Table 5: Summary of Potential Effect for North Shore Levee West Project Work

During **concrete wall levee construction** there is the possibility of increased turbidity due to earth disturbing activities. Though erosion control measures will be used to minimize run-off, there may be a minimal amount of sediment that gets into the Hoquiam River. This will cause increased turbidity in the localized area but due to the swiftness of the Hoquiam River these effects are expected to be minimal and temporary. There will also be the noise of foot traffic and construction machinery associated with this levee construction. Excavators and hand tools will be used to excavate the footprint of the concrete levee wall foundation and then to construct the framing until the concrete sets.

The loudest potential activity for noise impacts is the excavator, which generates approximately 80-90 dBA which would extend beyond the levee footprint by approximately 200 feet until it became indistinguishable from background ambient noise. The effects of this noise impact may affect local species movement but is not expected to be permanent. This action may disturb local sub-level vertebrates and invertebrates that serve as food for local species. However, the concrete wall will not be built at a great depth, so these effects are expected to be minimal and temporary.

During **sheet pile levee construction** there is the possibility of increased turbidity due to earth disturbing activities. Though erosion control measures will be used to minimize run-off there may be a minimal amount of sediment that gets into the Hoquiam River. This will cause increased turbidity in the localized area but due to the swiftness of the Hoquiam River these effects are expected to be minimal and temporary. There will also be the noise of foot traffic and construction machinery associated with this levee construction. The loudest piece of equipment to be used to this levee construction is a vibratory hammer.

The vibratory hammer produces noise at a level of approximately 101 dBA which extends the noise impact zone to approximately 800 feet beyond the levee footprint, at which point the noise would become indistinguishable from background ambient noise conditions.

Because this construction will require loud equipment, we do expect adverse effects on local species (including residents)—however these effects will be temporary and will only extend from those sections of the levee that will use this type of levee wall. This action may disturb local sub-level vertebrates and invertebrates that serve as food for local species.

During **earthen levee wall construction** there is the possibility of increased run-off resulting in increased turbidity due to the excavation of the levee footprint and the creation of the earthen levee. Though erosion control measures will be used to minimize run-off there may be a minimal amount of sediment that gets into the Hoquiam River. This will cause increased turbidity in the localized area but due to the swiftness of the Hoquiam River these effects are expected to be minimal and temporary. There will also be the noise of foot traffic and construction machinery associated with this levee construction. Excavators and hand tools will be used to excavate the footprint of the earthen levee and then to for the placement and compaction of earthen fill. The loudest potential activity for noise impacts is the excavator, which generates approximately 80-90 dBA which would extend beyond the levee footprint by approximately 200 feet until it became indistinguishable from background ambient noise. The effects of this noise impact may affect local species movement, but is not expected to be permanent.

Construction Elements	Potential Indirect Effects
Concrete Wall Levee	Disruption in biological corridor
Construction	<ul> <li>Disruption in nutrient/sediment transport</li> </ul>
	Stormwater accumulation
Sheet Pile Levee Construction	Disruption in biological corridor
	<ul> <li>Disruption in nutrient/sediment transport</li> </ul>
	Stormwater accumulation
Earthen Levee Construction	Disruption in nutrient/sediment transport

Table 6: Potential Indirect Effects of North Shore Levee West Project Work

The existing land where the levee will be constructed varies between 10-15.2 feet in elevation so the finished levee will be between approximately 0-6 feet. Those sections that are 6 feet tall will have the most impact on direct and indirect effects of the levee construction.

The construction of the **concrete wall levee** may disrupt localized species movement, especially for those species that go between land and river frequently (i.e. river otters). Depending on the height of the segments of the concrete wall levees, the levee could adversely affect the movement in the biological corridor from the river to high ground. However, all levee construction will take place above the OHWM so there is anticipated to be room for any species traveling from the river to higher ground to climb up the bank and search for shelter. The concrete levee wall will also disrupt nutrient and sediment transport between the terrain and the river. This can be seen as a positive and a negative—the wall will block any excessive nutrient run-off preventing contamination issues in Hoquiam River, but the nutrient-rich sediment which adds to the river ecology will also be blocked. However, because the levee will be constructed above the OHWM, there will still be some transfer of nutrient-rich sediment from the terrain to the river ecosystem.

The construction of the **sheet pile levee** may disrupt localized species movement, especially for those species that go between land and river frequently (i.e. river otters). Depending on the height of the segments of the sheet pile levees, the levee could adversely affect the movement in the biological corridor from the river to high ground. However, all levee construction will take place above the ordinary high water mark so there will still be room for any species traveling from the river to higher ground to climb up the bank and search for shelter.

The sheet pile levee wall will also disrupt nutrient and sediment transport between the terrain and the river. This can be seen as a positive and a negative—the wall will block any excessive nutrient run-off preventing contamination issues in Hoquiam River, but the nutrient-rich sediment which adds to the river ecology will also be blocked. However, because the levee will be constructed above the ordinary high-water mark, there will still be some transfer of nutrientrich sediment from the terrain to the river ecosystem.

The construction of the **earthen levee** may disrupt localized species movement, especially those species that go between land and river frequently (i.e. river otters). Depending on the height of the segments of the sheet pile levees, the levee could adversely affect the movement in the biological corridor from the river to high ground. However, all levee construction will take place above the ordinary high-water mark so there will still be room for any species traveling from the river to higher ground to climb up the bank and search for shelter. The earthen levee may also disrupt nutrient and sediment transport between the terrain and the river. This can be seen as a positive and a negative—the wall will block any excessive nutrient run-off preventing contamination issues in Hoquiam River, but the nutrient-rich sediment which adds to the river ecology will also be blocked. However, because the earthen levee will be constructed above the ordinary high-water mark, there will still be some transfer of nutrient-rich sediment from the terrain to the river ecosystem.

# **9.0 Determination of Impacts for Listed Species**

Species	Effect	Take
Chinook Salmon (Oncorhynchus tshawytscha)	NLAA	None
Chinook Salmon critical habitat	Ν	IE
Chum Salmon (Oncorhynchus keta)	NLAA	None
Chum Salmon critical habitat	Ν	IE
Bull Trout (Salvnius confluentus)	NLAA	None
Bull Trout critical habitat	Ν	IE
Pacific Eulachon (Thaleichthys pacificus)	NLAA	None
Pacific Eulachon critical habitat	NE	
North American Green Sturgeon (Acipenser medirostris)	NLAA	None
North American Green Sturgeon critical habitat	Ν	IE
Marbled Murrelet (Brachyramphus marmoratus)	NLAA	None
Marbled Murrelet critical habitat	NE	
Western Snowy Plover (Charadrius alexandrinus nivosus)	NLAA	None
Western Snowy Plover critical habitat	NE	
Streaked Horned Lark (Eremophila alpestris strigata)	NLAA	None
Streaked Horned Lark critical habitat	Streaked Horned Lark critical habitat NE	
Yellow-Billed Cuckoo (Coccyzus americanus)	NLAA	None
Yellow-Billed Cuckoo critical habitat	N	IE

### 9.1 Effect and Take Analysis Summary

Table 7: Effect and Take for Listed Species Associated with the North Shore Levee West Project

### **Bull Trout**

The proposed North Shore Levee West project **may affect**, **but is not likely to adversely affect** the local populations of bull trout. There are bull trout located in Hoquiam River and in Grays Harbor, however all project work will take place above the OHWM and will therefore have minimal impact on the aquatic habitat of the Hoquiam River.

#### Critical Habitat Effects Determination

There is not any designated critical habitat for bull trout in the Hoquiam River so the proposed project will have **no effect** on bull trout critical habitat.

#### Pacific Eulachon (Smelt)

The proposed North Shore Levee West project **may affect**, **but is not likely to adversely affect** local smelt populations. They have been previously described as "common" in the waters of Grays Harbor (Monaco et al. 1990) but are considered to occur only rarely in the sloughs of the Chehalis River estuary or the Chehalis system (75 FR 13012). While eulachon occur at least sporadically in Grays Harbor and the Chehalis River Basin, they are not expected to occur within the action area in great numbers, particularly not during the construction window.

#### Critical Habitat Effects Determination

There is not any designated critical habitat for smelt in the action area.

#### **Marbled Murrelet**

The North Shore Levee West project is **not likely to adversely affect** the marbled murrelet. This bird species spends the majority of its life in marine waters. They do fly inland to nest but they prefer old-growth forests with complex canopies and thick cover.

The Action Area does not contain any of the preferred inland habitat for marbled murrelet and project construction will occur above the OHWM.

#### Critical Habitat Effects Determination

There is no critical habitat designated in the Action Area therefore the proposed project will have **no effect** on the marbled murrelet critical habitat.

#### Western Snowy Plover

The North Shore Levee West project **may affect**, **but is not likely to adversely affect** the western snowy plover. Western snowy plovers are known to be located in Hoquiam (as well as the wider Grays Harbor County). They prefer sparsely vegetated sand beaches, beach dunes and river bars. The Action Area does not contain any of the Western snowy plover preferred habitat elements. The nearest documented location is on the coastal spit of Grays Harbor which is west of the action area. There is the possibility that plovers could be floating close to the mouth of the Hoquiam River during construction and would therefore be impacted by the construction noise. However if that were to occur any effects would be minimal and temporary.

#### Critical Habitat Effects Determination

There is no critical habitat designated in the Action Area therefore the proposed project will have **no effect** on the Western snowy plover critical habitat.

#### Streaked Horned Lark

The North Shore Levee West project is **not likely to adversely affect** the streaked horned lark. The historical range of the streaked horned lark included all of Western Washington but that range has decreased with habitat loss and breeding difficulties. There is still a local population in Grays Harbor County along the coastal spit Oyhut Wildlife Recreation Area. The Action Area does not contain any preferred habitat (prairies and open coastal environments) it is therefore unlikely that any will be encountered or impacted during levee construction.

#### Critical Habitat Effects Determination

There is no critical habitat designated in the Action Area therefore the proposed project will have **no effect** on the streaked-horned lark critical habitat.

#### Yellow-Billed Cuckoo

The North Shore Levee West project **may affect**, **but is not likely to adversely affect** the yellow-billed cuckoo. Historically the yellow-billed cuckoo was found throughout Washington but since their decline they mainly frequent southern states such as Texas, New Mexico and Nevada. There is a chance there is a local population in Washington which is why they are being included in this BA.

#### Critical Habitat Effects Determination

There is no critical habitat designated in the Action Area therefore the proposed project will have **no effect** on the yellow-billed cuckoo critical habitat.

# **10.0 Essential Fish Habitat (EFH) Evaluation**

#### 10.1 Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires Federal agencies to consult with NMFS on all activities that may adversely affect Essential Fish Habitat (MSA 305(b) (2)).

The 1996 amendments to the MSA resulted in a new emphasis on the sustainability of the nation's fisheries and established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a Federal fisheries management plan (FMP). Essential fish habitat is defined as "those waters and substrate fish need for spawning, breeding, feeding, or growth 38 to maturity" (NMFS, 2001). The objective of this EFH evaluation is to describe potential adverse effects to designated EFH for Federally-managed fisheries species within the proposed Action Area. It also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed project.

### 10.2 Identification of Essential Fish Habitat

The Pacific Fisheries Management Council (PFMC) has designated EFH for the Pacific salmon fishery. The Pacific salmon management unit includes Chinook (*Oncorhynchus tshawytscha*), and Coho salmon (*Oncorhynchus kisutch*). The EFH designation for the Pacific salmon fishery is defined as "those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem" (PFMC, 1999). Chinook and Coho salmon have listed essential fish habitat in the project area of North Shore Levee West. The PFMC has also identified the project area as one that may contain critical habitat for Finfish, Krill, Coastal Pelagic Species, and Groundfish for all life stages. Though these essential fish habitats are outside of the Action Area, there is the possibility of project construction resulting in erosion/run-off into the Hoquiam River which could affect these essential fish habitats.

#### 10.3 Effects of Proposed Action

The North Shore Levee West project is not within any essential fish habitat or critical habitat for listed species. The construction of the levee types may affect localized water quality but these effects will be minimal and temporary. Standard Best Management Practices make an overland runoff occurrences highly unlikely.

# 11.0 Summary

The North Shore Levee West project (which includes three types of levee wall construction along the Hoquiam River in the City of Hoquiam) is not within critical habitat for any listed species. This project **will alter existing environmental conditions but not substantially**. The levee construction may have temporary impacts in local water quality in the Hoquiam River but these effects are expected to be temporary. Additionally, though a permanent structure will be constructed, the impacts to local species movement will be minimal.

# **12.0 References**

- Association, N. O. (2017). *National Marine Fisheries Service, Habitat Conservation and Protection*. Retrieved from Essential Fish Habitat: https://www.habitat.noaa.gov/application/efhmapper/index.html
- Monaco, M. D. (1990). *Distribution and abundance of fishes and invertebrates in west coast esutaries, Volume 1: Data Summaries.* Rockville: Strategic Assessment Branch, NOA/NOAA.
- Sandell, T. F. (2013). Grays Harbor Juvenile Fish Use Assessment. Wild Fish Conservancy.
- Service, U. F. (2019). *Bull Trout Species Profile*. Retrieved from Environmental Conservation Online System: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E065
- Service, U. F. (2019). *Chinook salmon Species Profile*. Retrieved from Envionmental Conservation Online System: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E06D
- Service, U. F. (2019). *Chum salmon Species Profile*. Retrieved from Enviornmental Conservation Online System: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E09Q
- Service, U. F. (2019). *Marbeled Murrelet Species Profile*. Retrieved from Environmental Conservation Online System: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B08C
- Service, U. F. (2019). Oregon Silverspot butterfly Species Profile. Retrieved from Environmental Conservation Online Service: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=I01A
- Service, U. F. (2019). *Puget Sound Steelhead Species Profile*. Retrieved from Environmental Conservation Online Service: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E08D
- Service, U. F. (2019). *Species Profile for the Northern Spotted Owl*. Retrieved from Enviornmental Conservation Online System: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B08B
- Service, U. F. (2019). *Streaked Horned Lark Species Profile*. Retrieved from Environmental Conservation Service Online: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B0B3
- USFWS. (2019). *Environmental Conservation Online System*. Retrieved from Yellow-billed Cuckoo: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B06R
- USFWS. (2019). *Project Species List*. Retrieved from Information for Planning and Consultation--Project Profile: https://ecos.fws.gov/ipac/location/BBQBRVQFKFASLDBKSC47HPQGPI/resources#migr atory-birds
- USFWS. (2019). *Species Profile, Leatherback Sea Turtle*. Retrieved from Environmental Conservation Online: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=C00F

- USFWS. (2019). *Species Profile, Snowy Plover*. Retrieved from Environmental Conservation Online: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B07C
- Wildlife, U. F. (2019). Southern Resident Killer Whale. Retrieved from Environmental Conservation Online Service: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A0IL
- Wildlife, W. S. (2019). *PHS on the Web*. Retrieved from Priority Habitat Species: http://apps.wdfw.wa.gov/phsontheweb/
- WSDOT. (2019). Construction Noise Impact Assessment. Tumwater: WSDOT.

Wydoski, R. S. (2003). Inland Fishes of Washington. American Fisheries Society.





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Priority Habitats and Species Hoquiam, WA



# U.S. Fish and Wildlife Service National Wetlands Inventory



#### Wetlands

- Estuarine and Marine Wetland

Estuarine and Marine Deepwater

- **Freshwater Pond**

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Lake Other Riverine Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



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