
APPENDIX D
ESSENTIAL FISH HABITAT

ESSENTIAL FISH HABITAT CONSULTATION

Action Agency: Washington State Ferries (WSF)

Project Name: WSF Capital, Repair, and Maintenance Projects

Essential Fish Habitat Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 94-265), requires federal agencies to consult with National Marine Fisheries Service (NMFS) on activities that may adversely affect Essential Fish Habitat (EFH).

The objective of this EFH assessment is to determine whether or not the projects described in this Biological Assessment Reference (BAR) may adversely affect designated EFH for relevant federally managed commercial fisheries species within the proposed action area. This assessment describes Minimization Measures associated with the activities in this BAR used to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the activities described in Chapter 2 of the BAR (Construction Methods).

Description of the Proposed Action

This consultation covers capital, repair, and maintenance projects proposed by WSF. All WSF terminals are within Pacific groundfish, coastal pelagic, and Pacific salmon EFH. Coastal pelagic fish are primarily associated with the open-ocean and coastal areas, and are not likely to occur near WSF terminals. WSF has found that the construction methods are similar for many types of projects and has described these methods in Chapter 2 of the BAR.

Species of fish with designated EFH are listed in Table D-1.

Table D-1
Species of Fishes and Life-History Stages with Designated EFH in Puget Sound

Species	Adult	Spawning/ Mating	Juvenile	Larvae	Eggs/ Parturition
Groundfish Species					
Arrowtooth flounder	X	X	X		
Big skate	X	X	X		X
Black rockfish	X		X		
Bocaccio			?	X	
Brown rockfish	X	?	?	X	

Species	Adult	Spawning/ Mating	Juvenile	Larvae	Eggs/ Parturition
Butter sole	X	X	X		
Cabazon	X	X	X	?	X
California skate	X				
Canary rockfish	?	?	X		
China rockfish	X		X		
Copper rockfish	X		X	?	
Curlfin sole	X				
Darkblotched rockfish	X		X		
Dover sole	X	X	X		
English sole	X	X	X	X	X
Flathead sole	X	X	X		
Greenstriped rockfish					
Kelp greenling	X	X	X	X	X
Lingcod			X	X	
Pacific cod	X	X	X	X	X
Pacific Ocean perch	X		X		
Pacific sanddab				X	X
Pacific whiting (Hake)			X		
Petrable sole	X		X		
Quillback rockfish	X		X	?	
Ratfish	X				
Redbanded rockfish	X				
Redstripe rockfish	?				
Rex sole	X				?
Rock sole	X	X	X		
Rosethorn rockfish	X		X		
Rosy rockfish	?				
Rougheye rockfish	X		?		
Sablefish			X		
Sand sole	X	X	X		
Sharpchin rockfish	X		?		
Shortspine thornyhead	X		X		
Spiny dogfish	X		X		X
Splitnose rockfish	X		X		
Starry flounder	X	X	X	X	X
Stripetail rockfish	X				
Tiger rockfish	X		X		
Vermilion rockfish	X	?	X		
Yelloweye rockfish	X				
Pacific Salmon Species					
Chinook salmon	X		X		
Coho salmon	X		X		
Puget Sound pink salmon	X		X		

Species	Adult	Spawning/ Mating	Juvenile	Larvae	Eggs/ Parturition
Coastal Pelagic Species					
Northern anchovy	X	X	X	X	X
Pacific sardine	X				
Pacific mackerel	X				
Market squid	X				
Northern anchovy	X	X	X	X	X

Notes:

? = uncertain, but attribute may apply to life stage

Table from NMFS website, <http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Groundfish-EFH/Index.cfm>

Potential Adverse Effects of Proposed Project

Specific adverse effects depend on the nature of the work being done. The majority of environmental effects of WSF projects are temporary, such as noise and turbidity.

Permanent effects to habitat may occur as a result of installing in-water and over-water structures. A discussion of typical project effects is included in Chapter 3 of the BAR. Table D-2 lists potential effects to EFH and Minimization Measures proposed to offset the effects of those activities on EFH.

Table D-2
Affected EFH by Project Element and Proposed Minimization Measures

Type of Work	Associated Effects				
	Noise	Turbidity	Change in Over-Water Coverage	Other Potential Effects	Minimization Measures*
Pile removal	X	X	X	Water quality (resuspended contaminants)	A, B, C
Pile repair		X	X		A, B, C
Pile installation	X	X	X	Water quality (turbidity)	A, B, D
Rock anchors and Cast-in-place concrete	X	X		Water quality (elevated pH)	A, B, D
New or replacement structures (and associated temporary structures)	X		X		A, B, D, E
Dredging	X	X		Water quality (resuspended contaminants)	A, B

Note:

* Letters correspond to general categories of Minimization Measures in the sections below.

A. General Minimization Measures to Protect Water Quality

- All WSF construction is performed in accordance with the current WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. Special Provisions contained in preservation and repair contracts are used in conjunction with, and supersede, any conflicting provisions of the Standard Specifications.
- WSF must adhere to the measures outlined in the Implementing Agreement (IA) with the Washington State Department of Ecology (Ecology)/Washington State Department of Transportation (WSDOT) Memorandum of Agreement (MOA) dated February 13, 1998 (to be superseded by any agreement that is more current than the 1998 IA)
- The contractor shall be responsible for the preparation of a Spill Prevention, Control, and Countermeasures (SPCC) plan to be used for the duration of the project. The plan shall be submitted to the Project Engineer prior to the commencement of any construction activities. A copy of the plan with any updates will be maintained at the work site by the contractor.
 - The SPCC plan shall be consistent with the Ecology/WSDOT IA, identify construction planning elements, and recognize potential spill sources at the site. The SPCC shall outline best management practices and responsive actions in the event of a spill or release, and identify notification and reporting procedures. The SPCC shall also outline contractor management elements such as personnel responsibilities, project site security, site inspections, and training.
 - The SPCC will outline what measures shall be taken by the contractor to prevent the release or spread of hazardous materials, either found on site and encountered during construction but not identified in contract documents, or any hazardous materials that the contractor stores, uses, or generates on the construction site during construction activities. These items include, but are not limited to, gasoline, oils, and chemicals. Hazardous materials are defined in RCW 70.105.010 under "hazardous substance."
 - The contractor shall maintain, at the job site, the applicable spill response equipment and material designated in the SPCC plan.
- No petroleum products, fresh cement, lime, concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter surface waters.

- WSF will comply with water quality restrictions imposed by Ecology (Chapter 173-201A WAC), which specify a mixing zone beyond which water quality standards cannot be exceeded. Compliance with Ecology's standards is intended to ensure that fish and aquatic life are being protected to the extent feasible and practicable.
- Wash water resulting from washdown of equipment or work areas shall be contained for proper disposal, and shall not be discharged into state waters unless authorized through a state discharge permit.
- Equipment that enters the surface water shall be maintained to prevent any visible sheen from petroleum products appearing on the water.
- There shall be no discharge of oil, fuels, or chemicals to surface waters, or onto land where there is a potential for reentry into surface waters.
- No cleaning solvents or chemicals used for tools or equipment cleaning shall be discharged to ground or surface waters.
- The contractor shall regularly check fuel hoses, oil drums, oil or fuel transfer valves, fittings, etc. for leaks, and shall maintain and store materials properly to prevent spills.

B. General Minimization Measures to Protect Habitat

- The contractor will be advised that eelgrass beds are protected under local, state and federal law. When work will occur near eelgrass beds, WSF will provide plan sheets showing eelgrass boundaries to the contractor. The contractor shall exercise extreme caution when working in the area indicated on the plans as "Eelgrass Beds." The contractor shall adhere to the following restrictions during the life of the contract. The contractor shall not:
 - Place derrick spuds or anchors in the area designated as "Eelgrass."
 - Shade the eelgrass beds for a period of time greater than 3 consecutive days during the growing season (generally March through September).
 - Allow debris or any type of fuel, solvent, or lubricant in the water.
 - Perform activities that could cause significant levels of sediment to contaminate the eelgrass beds.
 - Conduct activities that may cause scouring of sediments within the eelgrass beds or other types of sediment transfer out of or into the eelgrass beds.

- Any damage to eelgrass beds or substrates supporting eelgrass beds that results from a contractor's operations will be repaired at the contractor's expense.
- If beach access is required, use of equipment on the beach area shall be held to a minimum and confined to designated access corridors that minimize foot traffic on the upper beach.
- Projects and associated construction activities will be designed so potential effects to species and habitat are avoided and minimized.
- WSF will obtain Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife (WDFW) for each project and the contractor will follow the conditions of the HPA. HPA requirements are listed in the contract specifications for the contractor to agree to prior to construction and the HPA is attached to the contract such that conditions of the HPA are made part of the contract.

C. *Minimization Measures Employed During Pile and Structure Removal*

- A containment boom surrounding the work area will be used during pile removal to contain and collect any floating debris and sheen, provided that the boom does not interfere with operations. The contractor will also retrieve any debris generated during construction with a skiff and net, or other means of retrieval.
- The contractor will have oil-absorbent materials on site to be used in the event of a spill if any oil product is observed in the water.
- All creosote-treated material, pile stubs, and associated sediments will be disposed of by the contractor in a landfill that meets the liner and leachate standards of the Minimum Functional Standards, Chapter 173-304 WAC. The contractor will provide receipts of disposal to the WSF Project Engineer. Both waste facilities that accept creosote waste in Washington State dispose of the piling in a landfill where they are buried.
- Removed piles, stubs, and associated sediments (if any) shall be contained on a barge. The storage area shall consist of a row of hay or straw bales, or filter fabric, or other containment placed around the perimeter of the barge.

- Excess or waste materials will not be disposed of or abandoned waterward of Ordinary High Water (OHW) or allowed to enter waters of the state, as per WAC 220-110-070. Waste materials will be disposed of in a landfill. Hazardous waste and treated wood waste will be disposed of by the contractor in a landfill that meets the liner and leachate standards of the Minimum Functional Standards, Chapter 173-304 WAC.
- Piling that break or are already broken below the waterline will be removed with a clamshell bucket. To minimize disturbance to bottom sediments and splintering of piling, the contractor will use the minimum size bucket required to pull out piling based on pile depth and substrate. The clamshell bucket will be emptied of piling and debris on a contained barge before it is lowered into the water. If the bucket contains only sediment, the bucket will remain closed, be lowered to the mudline, and opened to redeposit the sediment.
- Demolition and construction materials shall not be stored where high tides, wave action, or upland runoff can cause materials to enter surface waters.

D. *Minimization Measures Employed During Pile Installation, Pile Repair, and Installation of Structures*

- Creosote-treated timber piling shall be replaced with non-creosote-treated piling.
- The contractor will be required to ensure that wet concrete does not come in contact with marine waters.
- The contractor will be required to retrieve any floating debris generated during construction. Debris will be disposed of upland.
- Excess or waste materials will not be disposed of or abandoned waterward of OHW or allowed to enter waters of the state.
- ACZA-treated wood will be treated using the April 17, 2002 revised Amendment to Best Management Practices for the Use of Treated Wood in Aquatic Environments; USA Version-Revised July 1996-Western Wood Preservers Institute.
- Demolition and construction materials shall not be stored where high tides, wave action, or upland runoff can cause materials to enter surface waters.
- Hand tools or a siphon dredge will be used to excavate around piles to be replaced.

E. Minimization Measures Employed for Temporary Structures

- Temporary structures associated with facility closures during construction will be removed before the contractor demobilizes from the site or before the February 15 construction closure, whichever comes first.
- Temporary structures installed to maintain existing service to the facility will typically be replaced with the permanent structure within 2 years of installation.
- If temporary passenger-only service is required to maintain service during construction, WSF will develop operational criteria for vessels including maximum horsepower ratings, propeller diameters, and depth of propeller to centerline thresholds that the provider of the passenger-only service must meet to operate at temporary passenger only facilities to prevent scouring the seabed.
- If temporary floats are to be installed to provide passenger service in areas adjacent to eelgrass beds, floats will be designed to avoid shading of eelgrass beds, or will be installed in water depths to prevent scouring of eelgrass beds (based on propeller scour analysis prepared by the temporary vessel servicing the route).

Adverse Effects on Essential Fish Habitat for Groundfish

Groundfish EFH could be affected by the types of work listed in Table D-2. Short-term effects to EFH for groundfish may result from resuspension of contaminated sediments during creosote-treated pile removal. However, the long-term benefits of creosote removal are considered much greater than the temporary adverse effects. A detailed discussion of contaminant resuspension is in the BAR, Section 3.1. Minimization Measures to protect groundfish EFH are included in Table D-2.

Adverse Effects on Essential Fish Habitat for Salmonids

Potential effects to EFH for salmonids result from changes in overwater structure area, changes in underwater structural materials (such as replacement of a timber dolphin with one made of steel piling) that affect long-term water quality, and the establishment or removal of impediments to fish passage. Short-term effects to EFH can result from sediment deposition in projects generating high turbidity, such as dredging or pile removal. Minimization Measures employed to minimize adverse effects from the activities described in the BAR on salmon EFH are included in Table D-2.

Adverse Effects on Essential Fish Habitat for Coastal Pelagic Species

Potential effects to EFH for coastal pelagic species result from changes in overwater structure area, changes in underwater structural materials (such as replacement of a timber dolphin with one made of steel piling) that affect long-term water quality, and the establishment or removal of impediments to fish passage. Short-term effects to EFH can result from sediment deposition in projects generating high turbidity, such as dredging or pile removal.

Minimization Measures employed to minimize adverse effects from the activities described in the BAR on coastal pelagic EFH are included in Table D-2.

EFH Conclusion and Effect Determination

A Project Form (Appendix A) for each project will contain an effects determination for EFH for groundfish, salmon, and coastal pelagic species based on an analysis of the proposed activities.

APPENDIX E**EXISTING STORMWATER DRAINAGE AND TREATMENT FIGURES**