

Mooring Buoys

1.0 Summary of Activity

1.1. For all Fresh Waters excluding the Columbia River mainstem

Placement of mooring buoys for single boat, non-commercial use, provided that:

1. The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or habitat for listed or proposed species.
2. Buoys do not exceed 4 per acre.
3. Buoys are anchored securely and anchors are installed so that anchor lines do not drag.
4. Flotation shall be completely contained to prevent breakup.
5. Anchors shall be helical screw anchors where possible. If substrate is too hard, a 5-gallon bucket filled with cured concrete is used.
6. The vessel does not ground out at low water. [from NWP 10]
7. Work is done during approved work windows for listed species and forage fish.

1.2. For the Columbia River Mainstem including the Snake River and Baker Bay

Placement of mooring buoys for single boat, non-commercial use, provided that:

1. The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or habitat for listed or proposed species or prey/forage species (i.e., forage fish for pacific salmon).
2. Buoys do not exceed 4 per acre.
3. Buoys are anchored securely and anchors are installed so that anchor lines do not drag.
4. Flotation shall be completely contained to prevent breakup.
5. Anchors shall be helical screw anchors where possible. If substrate is too hard, a 5-gallon bucket filled with cured concrete is used.
6. The vessel does not ground out at low water. [from NWP 10]
7. Work is done during approved work windows for listed species and forage fish.
8. Work will not be done within one mile of a known steller sea lion haul-out.

1.3. For all Marine/Estuarine Waters excluding Baker Bay

Placement of mooring buoys for single boat, non-commercial use, provided that:

1. The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or habitat for listed or proposed species or prey/forage species (i.e., forage fish for pacific salmon).
2. Buoys do not exceed 4 per acre.
3. Buoys are anchored securely and anchors are installed so that anchor lines do not drag.
4. Flotation shall be completely contained to prevent breakup.
5. Anchors shall be helical screw anchors where substrate permits. If substrate is too hard, a 5-gallon bucket filled with cured concrete is used.
6. The vessel does not ground out at low water. [from NWP 10]
7. Work is done during approved work windows for listed species and forage fish.
8. Work will not be done within one mile of a known steller sea lion haul-out.

2.0. Programmatic Description

Individual permits (IPs), letters of permission (LOPs), and Nationwide Permit 10 (NWP 10) may authorize the placement of single-boat, non-commercial use, mooring buoys into navigable waters of the U.S in the State of Washington. This programmatic biological evaluation applies only to such activities. Work that cannot be designed or constructed to fit under this biological evaluation must go through individual informal or formal ESA consultation.

3.0. Project Location

In all navigable fresh and marine/estuarine waters only in the counties of Washington State where the National Marine Fisheries Service and U.S. Fish and Wildlife Service have concurred that the project is not likely to adversely affect listed species and designated critical habitat and will not jeopardize proposed species or destroy or adversely modify proposed critical habitat.

4.0. Project Description

Placement of mooring buoys for single boat, noncommercial use. This programmatic biological evaluation does not cover any interrelated and/or interdependent work activities in any of the designated critical habitat areas, except those activities distinctly specified.

Boat Moorage: Typical length of boats moored at mooring buoys is 22 feet long, with a maximum length of 65 feet. The boat is accessed by a small dinghy stored on the shoreline. Moorage of the boat at the mooring buoy is usually for only 6 months of every year, during the summer and fall when weather is less stormy.

5.0. Project Construction Description

Construction Equipment¹

The equipment used is the placement vessel, scuba equipment, and the helical anchor used to secure the buoy (discussed under methods).

Construction Methods

The buoy location is accessed by a small row boat or dinghy.

One to two scuba divers screw the helical anchor into the substrate. The depth for the placement of a mooring buoy is a minimum depth of 15 feet and a maximum depth of 30 feet at high water.

Materials Used

The buoy is typically 1- to 3-feet in diameter composed of a styrofoam ball with a plastic coating and a steel rod going through the center with key holes at the top and bottom for tying the vessel and attaching the anchor chain. Aluminum kegs may also be used as buoys.

A helical screw anchor will be used to anchor the buoy wherever this is possible. If the substrate doesn't allow for installation of a helical screw, the anchor can be a 5-gallon bucket filled with concrete. The number of anchors used depends on the size of vessel being moored and the strength of the currents in the area. The anchor is attached to the buoy by a nylon rope or chain and rope combination. The line length is based on the "scope" necessary for the location and its currents, averaging a 7:1 ratio of line length to depth. Determination of "scope" can be obtained from the U.S. Coast Guard or local boating association

Cleanup

Any left over material associated with placing the buoy will be collected and properly disposed.

Construction Timing

The placement of the mooring buoy and helical anchor can be completed in a matter of hours.

6.0. Action Area Description

The action area for the installation of a single-boat, non-commercial use, mooring buoy in all navigable fresh or marine/estuarine waters of Washington State includes the buoy, the boat to be moored at the buoy, the length of the chain/nylon rope, the swing of the boat and buoy from the anchor (a radius of 5

¹ Information about project construction methods provided by personal communication with John Pell, Navigation Expert, Corps of Engineers, Regulatory Branch, and Eric Winters, Chief of Floating Plan, Corps of Engineers, Navigation Branch on February 16, 2000.

feet), the helical anchor, a 25 feet radius² around the anchor for potential water quality impacts due to anchor placement, and a 1-mile above water radius for noise and visual impacts associated with installation activities. There is no interrelated and/or interdependent work in any upland or wetland areas that would be considered designated critical habitat.

7.0. Species and Habitat Information

7.1. Species Present

The plants, animals, insects, and fish present in the project area are provided in Table 1 through Table 4. Details on each species can be found in Appendix B.

Table 1. Sensitive Terrestrial Animals and Insects Potentially Occurring in Designated Project Areas

Species Name <i>Scientific Name</i>	Status	Fresh Water Areas (excluding the Columbia River mainstem)	Mainstem Columbia River Area (including Snake River and Baker Bay)	Marine/Estuarine Water Area (excluding Baker Bay)
Brown Pelican <i>Pelecanus occidentalis</i>	E	X	X	X
Marbled Murrelet <i>Brachyramphus marmoratus</i>	T	X	X	X
Northern Spotted Owl <i>Strix occidentalis</i>	T	X		X
Short-Tailed Albatross <i>Phoebastria albatrus</i>	E	X	X	X
Western Snowy Plover <i>Charadrius alexandrinus</i>	T	X	X	X
Canada Lynx <i>Lynx canadensis</i>	T	X		
Columbia White-Tailed Deer <i>Odocoileus virginianus leucurus</i>	E	X	X	
Gray Wolf <i>Canis lupis</i>	E	X		
Grizzly Bear <i>Ursus arctos horribilis</i>	T	X		
Pygmy Rabbit <i>Barchylagus idahoensis</i>	E	X	X	
Woodland Caribou <i>Rangifer tarandus caribou</i>	E	X		
Oregon Silverspot Butterfly <i>Speyeria zerene hippolyta</i>	T	X	X	X

² The determination of impact area for potential water quality impacts is based on personal communication with John Malek, Sediment Management, Environmental Protection Agency, on May 10, 2000. Mr. Malek stated that typically turbidity impacts of a pile driving, anchor placement or the like would not exceed a 15-foot radius, a 25-foot radius is the maximum extent of impact, regardless of substrate type and currents at a project site.

Table 2. Sensitive Marine Animals Potentially Occurring in Designated Project Areas

Species Name <i>Scientific Name</i>	Status	Fresh Water Areas (excluding the Columbia River mainstem)	Mainstem Columbia River Area (including Snake River and Baker Bay)	Marine/Estuarine Water Area (excluding Baker Bay)
Blue Whale <i>Balaenoptera musculus</i>	E			X
Fin Whale <i>Balaenoptera physalus</i>	E			X
Humpback Whale <i>Megaptera novaeangliae</i>	E			X
Sei Whale <i>Balaenoptera borealis</i>	E			X
Sperm Whale <i>Physeter macrocephalus</i>	E			X
Killer Whale <i>Orcinus orca</i>	E			X
Steller Sea Lion <i>Eumetopias jubatus</i>	T		X	X
Green Sea Turtle <i>Chelonia mydas</i>	T			X
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	E			X
Loggerhead Sea Turtle <i>Caretta caretta</i>	T			X

Table 3. Sensitive Plants Potentially Occurring in Designated Project Areas

Species Name <i>Scientific Name</i>	Status	Fresh Water Areas (excluding the Columbia River mainstem)	Mainstem Columbia River Area (including Snake River and Baker Bay)	Marine/Estuarine Water Area (excluding Baker Bay)
Bradshaw's Desert Parsley <i>Lomatium bradshawii</i>	E	X	X	
Golden Paintbrush <i>Castilleja levisecta</i>	T	X	X	
Kincaid's Sulphur Lupine <i>Lupinus sulphureus ssp. Kincaidii</i>	T	X		
Marsh Sandwort <i>Arenaria paludicola</i>	E	X		
Nelson's Checker-Mallow <i>Sidalcea nelsoniana</i>	T	X	X	
Showy Stickseed <i>Hackelia venusta</i>	PE	X		
Spalding's Silene <i>Silene spaldingii</i>	PT			
Water Howellia <i>Howellia aquatilis</i>	T	X	X	
Wenatchee Mountain Checker-Mallow <i>Sidalcea oregana var. calva</i>	E	X		
Ute Ladies'-Tresses <i>Spiranthes diluvialis</i>	T	X	X	

Table 4. Sensitive Fish Species Potentially Occurring in Designated Project Areas

Species Name <i>Scientific Name</i> Evolutionary Significant Unit (ESU)/Distinct Population Segment (DPS)	Status	Fresh Water Areas (excluding the Columbia River mainstem)	Mainstem Columbia River Area (including Snake River and Baker Bay)	Marine/Estuarine Water Area (excluding Baker Bay)
Bull Trout <i>Salvelinus confluentus</i>				
Coastal/Puget Sound DPS	T	X		X
Columbia River DPS	T	X	X	X
Chinook Salmon <i>Oncorhynchus tshawytscha</i>				
Puget Sound ESU	T	X		X
Snake River Fall Run ESU	T	X	X	X
Snake River Spring/Summer-run ESU	T	X	X	X
Lower Columbia River ESU	T	X	X	X
Upper Columbia River Spring-run ESU	E	X	X	X
Upper Willamette River ESU	T		X	X
Sockeye Salmon <i>Oncorhynchus nerka</i>				
Ozette Lake ESU	T	X		X
Snake River ESU	E		X	X
Coho Salmon <i>Oncorhynchus kisutch</i>				
Lower Columbia River/SW WA ESU	T	X	X	X
Chum Salmon <i>Oncorhynchus keta</i>				
Hood Canal Summer-run ESU	T	X		X
Columbia River ESU	T	X	X	X
Steelhead Trout <i>Oncorhynchus mykiss</i>				
Puget Sound ESU	T	X	X	X
Upper Columbia River ESU	E	X	X	X
Middle Columbia River ESU	T	X	X	X
Lower Columbia River ESU	T	X	X	X
Snake River Basin ESU	T	X	X	X
Upper Willamette River ESU	T		X	X

8.0. Activity History and Status

Table 5 is a breakdown of the number of Nationwide Permit 10 (NWP 10 – Mooring Buoys) verifications authorized by the Corps of Engineers. The breakdown is organized by year and waterbody. The waterbody includes all creeks, streams, and unnamed tributaries that flow into it. Each of the waterbodies is categorized as below.

8.1. Marine

All marine waters within Washington State (i.e., Pacific Ocean, Willapa Bay, Grays Harbor, Strait of Juan de Fuca, Strait of Georgia, Puget Sound, Hood Canal, Sammish Bay, Skagit Bay, Totten Inlet, Dabob Bay, Commencement Bay, etc.). Because of the design of the Corps database, it was not possible to separate out tidal areas from the minor freshwater creeks, streams, and unnamed tributaries that flow into these waterbodies.

8.2. Fresh

All fresh waters within Washington State including all rivers, tributaries, lakes, and reservoirs (regardless of size) and excluding the Columbia River Mainstem. (i.e., Snoqualmie River, Skagit River, Puyallup River, Nisqually River, Cowlitz River, Yakima River, Wenatchee River, Snake River, Pend Oreille River, Lake Washington, Lake Sammamish, Lake Chelan, Moses Lake, Baker Lake, Spanaway Lake, etc).

8.3. Columbia River

Mainstem Columbia River within Washington State, including the Snake River, Baker Bay, and reservoirs/lakes (i.e. Lake Entiat, Lake Wallula, Franklin D. Roosevelt Lake, Priest Rapids Lake, etc.). Data for all tributaries are included under “fresh water” areas.

To determine the number of authorized mooring buoy verifications, all finalized permit actions were queried against the key word “NWP 10” and cross-referenced with the work type “buoy.” The cross-referencing ensures that the activity is properly categorized and each NWP 10 verification is only counted once. NWP 10 activities do not require “notification” to the Corps, therefore the data set below represents only those activities where the Corps was notified and a verification was actually issued. NWP 10 activities are for Rivers and Harbors Act Section 10 waters only, therefore the data represents activities authorized within navigable waters. The following data also includes before- and, when applicable, after-the-fact authorizations. The most accurate count for mooring buoys is shown in 1998. In 1998, the Corps contacted Washington State Department of Natural Resources (WDNR) to determine how many mooring buoys were authorized by the State. In comparing the Corps database with one PBE mooring buoys.doc year of data from WDNR (1998), the Corps database represents less than 1 % of the actual number of mooring buoys.

Table 5. Historical Record of Corps Authorization of Mooring Buoys

WATERBODY	1995	1996	1997	1998	1999
Marine	5	7	3	91	5
Fresh	0	3	0	7	0
Columbia River	0	0	0	0	0
TOTAL	5	10	3	96	5

* Data for the year 1998 includes 91 buoy verifications supplied to the Corps by the Department of Natural Resources.

As of August 2005, this programmatic has been used 53 times since authorization (August 8, 2001).

9.0. Environmental Baseline

The environmental baseline is provided in Appendix C.

10.0 Effects of the Action

10.1. Direct effects

Because the direct effects, whether associated with marine or freshwater areas, are relatively similar for all the listed or proposed species, the effects analysis does not distinguish between project area region/waterbody. Mooring buoys placed in open water have the potential to affect species associated with open water such as fish, marine mammals, and birds. Mooring buoys are placed at a minimum depth of 15 feet and a maximum depth of 30 feet mean high water. Listed or proposed fish species use at this depth is generally adult migration as juveniles stay closer to shore in the shallow waters. Effects to listed or proposed species associated with the placement of mooring buoys in any of the waters of the U.S. in Washington State are outlined below:

1. Water quality (anchor placement): Temporary water quality impacts may occur with the placement of the mooring buoys during installation of the helical anchor and a small amount of sediment is temporarily suspended in the water column. As the divers screw the anchor into the sediment, sediment suspension is unlikely to exceed a radius of 25 feet from the anchor and would settle out of the water column to background levels in no more than an hour, depending on sediment type and currents. If the anchor is not installed properly the anchor may pull out and drag along the substrate, causing additional sediment suspension. To be covered by this informal programmatic consultation, buoy anchors are installed so that the anchor line does not drag. Using this method of installation, all temporary water quality impacts associated with the anchor placement are insignificant and/or discountable.
2. Water quality (propwash): The boat placing the buoy is likely to cause some sediment suspension associated with propwash. The boat is stopped during anchor installation so the disturbance with the propwash is extremely minor. Any turbidity associated with propwash would also settle out of the water column to background levels in no more than an hour, depending on sediment type and currents. All temporary water quality impacts are insignificant and/or discountable.
3. Disturbance: The presence and operation of equipment (i.e., vessel) may have an effect on listed species. Construction activities could disrupt marine mammals, sea turtles, and murrelet nesting and foraging, causing animals to temporarily avoid the project area. However, construction activities would be short-term and potential impacts to listed species would be minimized by implementing timing restrictions (Appendix D and E) designed to avoid or minimize impacts.

10.2. Indirect effects

The effects resulting from a mooring buoy that are later in time could include oil or gas spills, disruption of migration, substrate disturbance, and angling pressure.

1. Water quality (contaminants): The operation of the boat may result in an insignificant and discountable amount of oil, gas, and paint leaching into the water. The boats at the mooring buoys are not fueled at the buoy but at fueling docks. Painting of the boats does not occur at the mooring buoy either. TBT, a pesticide, is sometimes found in paint used for boats. TBT is known to leach from the paint and into the water column in both marine/estuarine waters and fresh waters. Since 1998, the State of Washington has banned the use of TBT tainted paint on pleasure vessels. TBT tainted paint is still used on international commercial vessels. This

programmatic biological evaluation only covers mooring buoys for non-commercial pleasure craft. The only other chemical of concern in paint is copper. Copper does not leach from the paint into the water column.³ From regular operation of the vessel there will likely be some small amounts of oil or gas. There is the potential for the boat to be damaged from a storm or other unforeseen activity while moored at the buoy which could result in a greater amount of oil or gas leakage. One of the general implementation conditions of this programmatic biological evaluation requires immediate notification to the State oil spill response team in such an event.

2. **Water Quality (prop wash):** There may be temporary sediment suspension associated with prop wash when the moored vessel leaves and returns to the buoy. Sediment suspension would be similar to that from the boat when the anchor is installed. This temporary water quality impact will be insignificant and/or discountable.
3. **Habitat Access:** The vessel is typically moored at a depth of 30 feet HW , (around 15 feet LW for marine areas). There is a potential that the vessel, moored for more than 6 months of the year, would cause shading impacts that may disturb migration patterns of listed or proposed fish species, causing them to avoid the structure. At the depth the vessel is moored, only adults of the species would be utilizing the area, as juveniles stay closer into shore. Minor changes to adult migratory patterns of only a few feet (the length of the vessel) would not increase the risk of predation or migration as the adults would still remain within the extent of the main migratory corridor. In addition, no more than 4 buoys with moored vessels will be allowed per acre. Impacts to habitat access are insignificant and/or discountable.
4. **Habitat Health (substrate, vegetated shallows, predation):** To be covered by this informal programmatic consultation, the buoys will be placed so that the vessel will not ground out during low water, the vessel will not be moored over or adjacent to vegetated shallows, and no more than 4 buoys/vessels will be placed within one acre. Vegetated shallows provide refuge for juvenile salmonids and support forage species that the listed or proposed species are dependent upon, For example, herring spawn in eelgrass beds in marine areas. Boat activity near or adjacent to vegetated areas has been documented to damage and/or destroy the vegetated areas. (NOAA, 1998) By not allowing the vessel to ground at low water and ensuring that anchor is properly installed and the anchor and anchor line will not drag, the buoy and vessel moorage will not destroy the integrity of the substrate or damage or destroy benthic invertebrates that juveniles of the listed or proposed fish species are dependent upon for food. Vegetated shallows provide refuge for juvenile listed or proposed fish and support forage species that the listed or proposed species are dependent upon, such as invertebrates or herring spawning in eelgrass beds in marine areas. Since the vessel will not be moored over or adjacent to vegetated shallows, the shading of the vessel or disturbance from propwash will not impair vegetated shallows. Because the vessel is moored on a buoy, the vessel will move around the buoy with the currents, not remain in a fixed position. Since the vessel will be in motion and no more than 4 buoys/vessels are allowed per one acre area, there is no opportunity to create fixed predator habitat via shading. Using this method of installation, impacts to habitat health are insignificant and/or discountable.
5. **Predation:** Angling from moored boats could occur. This could lead to incidental hooking mortalities to listed or proposed fish species, especially if moorages are located over forage fish spawning areas. To be covered by this informal consultation, the anchor, buoy, and

³ Information on paint contaminants and their effects was obtained from personal communication with Stephanie Stirling, Dredge Materials Management Office, U.S. Army Corps of Engineers on May 9, 2000.

moored vessel are not to be located over or adjacent to (within 300 feet) forage fish spawning areas. In addition, most anglers fish while underway, not while their vessel is moored. Thus, these effects will be insignificant and/or discountable.

10.3. Others

For all other pathways and indicators not specifically mentioned above, the activity will not alter the present environmental baseline.

10.4. Determination of Effect

Activities covered by this document may affect certain threatened and endangered species, species proposed for listing as threatened or endangered, and designated or proposed critical habitat for those species (summarized in Table 6 through Table 9). The determinations for each species assumes the following (for all areas):

- The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State- designated noxious weeds) or habitat for listed or proposed species, or forage fish.
- Buoys do not exceed 4 per acre.
- Buoy anchors are installed so that the anchor line does not drag.
- Flotation shall be completely contained to prevent breakup.
- Buoy anchor is helical screw wherever possible.
- The vessel does not ground out at low water.

Brown Pelican (*Pelecanus occidentalis*)

The proposed activity “may affect, but is not likely to adversely affect” brown pelicans. In Washington, brown pelicans inhabit only coastal marine waters. The proposed activity could occur in coastal marine waters and could result in temporary displacement of brown pelicans during construction due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely. To minimize impacts work would be limited in Pacific and Grays Harbor Counties by the work window specified in Appendix E.

Marbled Murrelet (*Brachyramphus marmoratus*)

The proposed activity “may affect, but is not likely to adversely affect” marbled murrelets and their critical habitat. The proposed activity may result in temporary displacement of marbled murrelets during construction due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely. The proposed activity will not alter or impact critical habitat because activity would occur offshore or at the shoreline, away from old growth habitat. In addition, work would be prohibited in or near critical habitat areas and during sensitive nesting or foraging periods as described in Appendix E.

Northern Spotted Owl (*Strix occidentalis*)

The proposed activity “may affect, but is not likely to adversely affect” the northern spotted owl and its critical habitat. The proposed activity may result in temporary displacement of spotted owls during

construction due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely. The proposed activity will not alter or impact current spotted owl prey and habitat because activity would occur offshore or at the shoreline, away from old growth habitat. In addition, work would be prohibited in or near critical habitat areas and during sensitive nesting periods as described in Appendix E.

Short-Tailed Albatross (*Phoebastria albatrus*)

The proposed activity “may affect, but is not likely to adversely affect” short-tailed albatross. In Washington, short-tailed albatross inhabit only coastal and offshore marine waters. The proposed activity could occur in coastal or offshore marine waters and could result in temporary displacement of short-tailed albatross during construction due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely.

Western Snowy Plover (*Charadrius alexandrinus*)

The proposed activity “may affect, but is not likely to adversely affect” western snowy plover and its proposed critical habitat. Plovers inhabit only ocean beach areas in Pacific and Grays Harbor counties; southwest Washington is furthest known northern area for snowy plovers. Western snowy plover utilize open shoreline areas where little vegetation exists. The proposed activity could occur near ocean beaches and could result in temporary displacement of western snowy plover during construction due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely. To minimize impacts work would be limited by the work window and distance to nesting areas specified in Appendix E.

Canada Lynx (*Lynx canadensis*)

The proposed activity would have “no effect” on Canada lynx. The proposed activity would occur in navigable waters and would not occur near remote areas of the Selkirk Mountains or the Cascade Range where lynx occur. Because there would be no overlap of the proposed activity action area and Canada lynx or their habitat, the proposed activity would have no potential to affect Canada lynx.

Columbia White-Tailed Deer (*Odocoileus virginianus leucurus*)

The proposed activity “may affect, but is not likely to adversely affect” Columbia white-tailed deer. Any construction noise or activities along the lower Columbia River from River Mile (RM) 50 to RM 52 may result in temporary displacement of Columbia white-tailed deer due to the associated noise and visual disturbance. Direct mortality or sub-lethal effects are unlikely. To minimize impacts, work will be prohibited in or near sensitive habitat areas as specified in Appendix E.

Gray Wolf (*Canis lupis*)

The proposed activity would have “no effect” on gray wolves. The proposed activity would occur in navigable waters and would not occur near remote areas of the Selkirk Mountains or the Cascade Range where gray wolves occur. Because there would be no overlap of the proposed activity action area and gray wolves or their habitat, the proposed activity would have no potential to affect gray wolves.

Grizzly Bear (*Ursus arctos horribilis*)

The proposed activity would have “no effect” on grizzly bears. The proposed activity would occur in navigable waters and would not occur near remote areas of the Selkirk Mountains or the Cascade Range where grizzly bears occur. Because there would be no overlap of the proposed activity action area and grizzly bear or their habitat, the proposed activity would have no potential to affect grizzly bear.

Pygmy Rabbit (*Barchylagus idahoensis*)

The proposed activity would have “no effect” on pygmy rabbits. Pygmy rabbits occur in the shrub steppe habitat of Douglas County, Washington. Such habitat occurs along the Columbia River mainstem. Activities, such as placing a navigational buoy, would occur offshore and would not affect habitats that support the pygmy rabbit. All activities will avoid suitable habitat and known populations of pygmy rabbit. Because there would be no overlap of the proposed activity action area and pygmy rabbit or their habitat, the proposed activity would have no potential to affect pygmy rabbit.

Woodland Caribou (*Rangifer tarandus caribou*)

The proposed activity would have “no effect” on woodland caribou. The proposed activity would occur in navigable waters and would not occur in or near the Selkirk Mountains where woodland caribou occur. Because there would be no overlap of the proposed activity action area and woodland caribou or their habitat, the proposed activity would have no potential to affect woodland caribou.

Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*)

The proposed activity “may affect, but is not likely to adversely affect” Oregon silverspot butterflies and their critical habitat. Oregon silverspot butterflies inhabit coastal salt spray marshes and open meadows. In Washington, Oregon silverspot butterflies may be extirpated. However, areas suitable for recolonization or reintroduction occur in southwest Washington. Activities near sand dune, salt-spray meadows or open field habitat in the Pacific coastal and Willapa Bay areas of Pacific County could impact the butterfly or their habitat. The early blue violet is a host species for the butterfly larvae, and no activity would be allowed where blue violet is detected by a plant survey conducted at the appropriate time of year. To minimize potential impacts work will be prohibited in or near sensitive habitat areas as specified in Appendix E.

Blue Whale (*Balaenoptera musculus*)

The proposed activity “may affect, but is not likely to adversely affect” whales. The blue whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of blue whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Fin Whale (*Balaenoptera physalus*)

The proposed activity “may affect, but is not likely to adversely affect” fin whales. The fin whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of fin whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Humpback Whale (*Megaptera novaeangliae*)

The proposed activity “may affect, but is not likely to adversely affect” humpback whales. The humpback whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of humpback whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Sei Whale (*Balaenoptera borealis*)

The proposed activity “may affect, but is not likely to adversely affect” sei whales. The sei whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of sei whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Sperm Whale (*Physeter macrocephalus*)

The proposed activity “may affect, but is not likely to adversely affect” sperm whales. The sperm whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of sperm whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Killer Whale (*Orcinus orca*) and Critical Habitat

The proposed activity “may affect, but is not likely to adversely affect” killer whales or their critical habitat. The killer whale occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of killer whales during construction due to the associated noise and visual disturbance. Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.

Steller Sea Lion (*Eumetopias jubatus*)

The proposed activity “may affect, but is not likely to adversely affect” steller sea lions and their critical habitat. In Washington, Steller sea lions inhabit pelagic areas of marine waters and occasionally move up the lower Columbia River to feed during the fall. Any work in marine waters or the lower Columbia River may result in temporary disturbance of Steller sea lions during construction due to the associated noise and visual disturbance. Activities could result in confusion, disruption of social cohesion, separation, alteration of travel, and interference with feeding or breeding. Work will be prohibited near or in critical habitat and will not be allowed within one mile of a known steller sea lion haul-out.

Green Sea Turtle (*Chelonia mydas*)

The proposed activity “may affect, but is not likely to adversely affect” green sea turtles. The green sea turtle occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of green sea turtles during construction due to the associated noise and visual disturbance. Construction noise and activity could interfere with travel and foraging.

Leatherback Sea Turtle (*Dermochelys coriacea*)

The proposed activity “may affect, but is not likely to adversely affect” leatherback sea turtles. The leatherback sea turtle occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of leatherback sea turtles during construction due to the associated noise and visual disturbance. Construction noise and activity could interfere with travel and foraging.

Loggerhead Sea Turtle (*Caretta caretta*)

The proposed activity “may affect, but is not likely to adversely affect” loggerhead sea turtles. The loggerhead sea occurs in marine areas where activities could occur. Any work in marine waters may result in temporary disturbance of loggerhead sea turtles during construction due to the associated noise and visual disturbance. Construction noise and activity could interfere with travel and foraging.

Bradshaw’s Desert Parsley (*Lomatium bradshawii*)

The proposed activity would have “no effect” on Bradshaw’s desert parsley. Bradshaw's desert parsley occurs in wet meadows. Populations of desert parsley have been identified near streams in Clark County, Washington. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore in navigable waters.

Golden Paintbrush (*Castilleja levisecta*)

The proposed activity would have “no effect” on golden paintbrush. Golden paintbrush occurs in small populations in uplands in the Puget Trough, San Juan County, and Clark County. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Kincaid’s Sulphur Lupine (*Lupinus sulphureus ssp. Kincaidii*)

The proposed activity would have “no effect” on Kincaid’s sulphur lupine. Kincaid's sulphur lupine occurs in upland prairie habitat in southwest Washington. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Marsh Sandwort (*Arenaria paludicola*)

The proposed activity would have “no effect” on the marsh sandwort. Marsh sandwort may be extirpated in Washington, but marsh sandwort historically occurred in freshwater wetlands. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore in navigable waters.

Nelson’s Checker-Mallow (*Sidalcea nelsoniana*)

The proposed activity would have “no effect” on the Nelson’s checker mallow. Nelson's checker-mallow occurs in meadows and along streams in southwest Washington (Lewis and Cowlitz Counties). Surveys to determine the presence of Nelson's checker-mallow can help avoid and minimize potential impacts. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Showy Stickseed (*Hackelia venusta*)

The proposed activity would have “no effect” on showy stickseed. Showy stickseed occurs in open mountain sites composed of loose sand or talus slopes, areas where activities would not occur. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore in navigable waters.

Spalding’s Silene (*Silene spaldingii*)

The proposed activity would have “no effect” on Spalding’s silene. Spalding's silene occurs in upland grasslands in eastern Washington, areas where activities would not occur. Surveys to determine the presence of Spalding's silene can help avoid and minimize potential impacts. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore in navigable waters.

Water Howellia (*Howellia aquatilis*)

The proposed activity would have “no effect” on water howellia. Water howellia occurs in seasonal wetlands in the Puget lowlands and the Columbia basin (Pierce, Clark and Spokane Counties), primarily in small, vernal ponds, although some ponds may retain water throughout the year. Ponds would not be influenced or affected by proposed activity which occurs in navigable waters. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Wenatchee Mountain Checker-Mallow (*Sidalcea oregana var. calva*)

The proposed activity would have “no effect” on the Wenatchee mountain checker-mallow and its critical habitat. Wenatchee mountain checker-mallow occurs in wet meadows within a small region southeast of Leavenworth, Washington (Chelan County), areas that are not expected to be affected by the proposed activity, which occurs in navigable waters. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Ute Ladies’-Tresses (*Spiranthes diluvialis*)

The proposed activity would have “no effect” Ute ladies’-tresses. Ute ladies’-tresses can occur in wet meadows associated with meandering wetland complexes. Impacts to Ute ladies’-tresses are unlikely to occur as a result of the proposed activity since the activity is associated with navigable waters. It is unlikely that species or habitat would be affected by the proposed activity because construction would occur offshore, away from upland areas, and work would be prohibited in or near sensitive areas as specified in Appendix E.

Pacific Salmon and Bull Trout

Adult and juvenile salmonids utilize habitats within the action area as migratory corridors and rearing habitat and may be affected by construction activities. The proposed activity may result in temporary increases in suspended sediment during construction; however, turbidity is expected to be short-term. Proposed activity will not occur in or near vegetated shallows where listed salmonids or forage fish may occur and buoys will be anchored securely so that the anchor line does not drag.

The in-water work windows (see the Corps website and Appendix D) will minimize the chance that adult and juvenile salmonids are present during project construction, and forage fish spawning will be protected.

The proposed activity “may affect, but is not likely to adversely affect”:

- Snake River sockeye and their critical habitat
- Snake River spring/summer chinook and their critical habitat
- Snake River fall chinook and their critical habitat
- Snake River steelhead and their critical habitat
- Columbia River chum
- Columbia River bull trout
- Lower Columbia River steelhead
- Lower Columbia River chinook
- Middle Columbia River steelhead
- Upper Columbia River steelhead
- Upper Columbia River spring chinook
- Upper Willamette River chinook
- Upper Willamette River steelhead
- Ozette Lake sockeye
- Hood Canal summer chum
- Puget Sound chinook and their critical habitat
- Puget Sound steelhead
- Puget Sound/Strait of Georgia coho salmon
- Coastal/Puget Sound bull trout/dolly varden and their critical habitat

Table 6. Effect Determinations for Listed Terrestrial Animals and Insects

Species Name <i>Scientific Name</i>	Status	Determination	Rational for Determination
Brown Pelican <i>Pelecanus occidentalis</i>	E	May affect, but not likely to adversely affect	Any work near coastal marine waters and associated with the proposed activity may result in temporary displacement during construction due to noise and visual disturbance. To minimize impacts work would be limited in Pacific and Grays Harbor Counties by a work window (Appendix E).
Marbled Murrelet <i>Brachyramphus marmoratus</i>	T	May affect, but not likely to adversely affect	The proposed activity may result in temporary displacement during construction due to noise and visual disturbance. Work will be prohibited in or near critical habitat areas and during sensitive nesting or foraging periods (Appendix E).
Northern Spotted Owl <i>Strix occidentalis</i>	T	May affect, but not likely to adversely affect	The proposed activity may result in temporary displacement during construction due to noise and visual disturbance. Work will be prohibited in or near critical habitat areas and during sensitive nesting or foraging periods (Appendix E).
Short-Tailed Albatross <i>Phoebastria albatrus</i>	E	May affect, but not likely to adversely affect	In Washington, short-tailed albatross inhabit only coastal and offshore marine waters where temporary displacement during construction due to noise and visual disturbance has the potential to affect short-tailed albatross.
Western Snowy Plover <i>Charadrius alexandrinus</i>	T	May affect, but not likely to adversely affect	Plovers inhabit only ocean beach areas in Pacific and Grays Harbor counties where temporary displacement during construction due to noise and visual disturbance has the potential to affect western snowy plover. Work will be prohibited in or near critical habitat and sensitive nesting areas (Appendix E).
Canada Lynx <i>Lynx canadensis</i>	T	No effect	The proposed activity would not occur near remote areas of the Selkirk Mountains or the Cascade Range where lynx occur.
Columbia White-Tailed Deer <i>Odocoileus virginianus leucurus</i>	E	May affect, but not likely to adversely affect	Construction noise and activities along the lower Columbia River from River Mile (RM) 50 to RM 52 may temporarily displace Columbia white-tailed deer. Work will be prohibited in or near sensitive habitat areas as specified in Appendix E.
Gray Wolf <i>Canis lupis</i>	E	No effect	The proposed activity would not occur near remote areas of the Selkirk Mountains or the Cascade Range where grey wolves occur.

Species Name <i>Scientific Name</i>	Status	Determination	Rational for Determination
Grizzly Bear <i>Ursus arctos horribilis</i>	T	No effect	The proposed activity would not occur near remote areas of the Selkirk Mountains or the Cascade Range where grizzly bear occur
Pygmy Rabbit <i>Barchylagus idahoensis</i>	E	No effect	Pygmy rabbits occur in shrub steppe habitat. Activities, such as placing a navigational buoy, would occur offshore and would not affect habitats that support the pygmy rabbit.
Woodland Caribou <i>Rangifer tarandus caribou</i>	E	No effect	The proposed activity would not occur in or near the Selkirk Mountains where woodland caribou occur.
Oregon Silverspot Butterfly <i>Speyeria zerene hippolyta</i>	T	May affect, but not likely to adversely affect	Activities near sand dune, salt-spray meadows or open field habitat in the Pacific coastal and Willapa Bay areas of Pacific County could impact the butterfly or their habitat. Work will be prohibited in or near sensitive habitat areas as specified in Appendix E

Table 7. Effect Determinations for Listed Marine Animals

Species Name <i>Scientific Name</i>	Status	Determination	Rational for Determination
Blue Whale <i>Balaenoptera musculus</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Fin Whale <i>Balaenoptera physalus</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Humpback Whale <i>Megaptera novaeangliae</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Sei Whale <i>Balaenoptera borealis</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Sperm Whale <i>Physeter macrocephalus</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Killer Whale <i>Orcinus orca</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and/or stranding.
Steller Sea Lion <i>Eumetopias jubatus</i>	T	May affect, but not likely to adversely affect	Activity could result in confusion, disruption of social cohesion, separation, alteration of travel, and interference with feeding or breeding.
Green Sea Turtle <i>Chelonia mydas</i>	T	May affect, but not likely to adversely affect	Construction noise and activity could interfere with travel and foraging
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	E	May affect, but not likely to adversely affect	Construction noise and activity could interfere with travel and foraging
Loggerhead Sea Turtle <i>Caretta caretta</i>	T	May affect, but not likely to adversely affect	Construction noise and activity could interfere with travel and foraging.

Table 8. Effect Determinations for Listed and Proposed Plants

Species Name <i>Scientific Name</i>	Status	Determination	Rational for Determination
Bradshaw's Desert Parsley <i>Lomatium bradshawii</i>	E	No effect	Proposed activity occurs off-shore, therefore species or habitat would not be affected.
Golden Paintbrush <i>Castilleja levisecta</i>	T	No effect	Proposed activity would not occur in suitable habitat (upland areas).
Kincaid's Sulphur Lupine <i>Lupinus sulphureus ssp. Kincaidii</i>	T	No effect	Proposed activity would not occur in suitable habitat (upland prairie habitat).
Marsh Sandwort <i>Arenaria paludicola</i>	E	No effect	Marsh sandwort may be extirpated in Washington and activity occurs off-shore
Nelson's Checker-Mallow <i>Sidalcea nelsoniana</i>	T	No effect	Proposed activity occurs off-shore, therefore species or habitat would not be affected
Showy Stickseed <i>Hackelia venusta</i>	PE	No effect	Proposed activity would not occur in suitable habitat (open mountain sites composed of loose sand or talus slopes)
Spalding's Silene <i>Silene spaldingii</i>	PT	No effect	Proposed activity would not occur in suitable habitat (upland grasslands).
Water Howellia <i>Howellia aquatilis</i>	T	No effect	Proposed activity occurs off-shore, therefore species or habitat would not be affected
Wenatchee Mountain Checker-Mallow <i>Sidalcea oregana var. calva</i>	E	No effect	Proposed activity occurs off-shore, therefore species or habitat would not be affected
Ute Ladies'-Tresses <i>Spiranthes diluvialis</i>	T	No effect	Proposed activity occurs off-shore, therefore species or habitat would not be affected

Table 9. Effect Determinations for Listed, Proposed, and Candidate Fish Species

Species Name <i>Scientific Name</i> Evolutionary Significant Unit (ESU)/Distinct Population Segment (DPS)	Status	Determination	Rational for Determination
Bull Trout <i>Salvelinus confluentus</i> Coastal/Puget Sound DPS Columbia River DPS	T T	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.
Chinook Salmon <i>Oncorhynchus tshawytscha</i> Puget Sound ESU Snake River Fall Run ESU Snake River Spring/Summer-run ESU Lower Columbia River ESU Upper Columbia River Spring-run ESU Upper Willamette River ESU	T T T T E T	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.
Sockeye Salmon <i>Oncorhynchus nerka</i> Ozette Lake ESU Snake River ESU	T E	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.
Coho Salmon <i>Oncorhynchus kisutch</i> Lower Columbia River/SW WA ESU	T	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.
Chum Salmon <i>Oncorhynchus keta</i> Hood Canal Summer-run ESU Columbia River ESU	T T	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.
Steelhead Trout <i>Oncorhynchus mykiss</i> Puget Sound ESU Upper Columbia River ESU Middle Columbia River ESU Lower Columbia River ESU Snake River Basin ESU Upper Willamette River ESU	T E T T T T	May affect, but not likely to adversely affect	Proposed activity occurs in areas where fish may occur and potential impacts from turbidity, contaminants, and noise associated with construction could affect fish.

11.0 Essential Fish Habitat

Overview

Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act to establish new requirements for Essential Fish Habitat (EFH) descriptions in Federal fishery management plans and to require federal agencies to consult with NMFS on activities that may adversely affect EFH.

The Magnuson-Stevens Act requires all fishery management councils to amend their fishery management plans to describe and identify EFH for each managed fishery. The Pacific Fishery Management Council (1999) has issued such an amendment in the form of Amendment 14 to the Pacific Coast Salmon Plan, and this amendment covers EFH for all fisheries under NMFS jurisdiction that would potentially be affected by the proposed action. Specifically, these are the chinook, coho and pink salmon fisheries. EFH includes all streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon. Activities occurring above impassable barriers that are likely to adversely affect EFH below impassable barriers are subject to the consultation provisions of the Magnuson-Stevens Act.

The Magnuson-Stevens Act requires consultation for all federal agency actions that may adversely affect EFH. EFH consultation with NMFS is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of its location. Under Section 305(b)(4) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that adversely affect EFH. Wherever possible, NMFS utilizes existing interagency coordination processes to fulfill EFH consultations with federal agencies. For the proposed action, this goal is being met by incorporating EFH consultation to the Endangered Species Act Section 7 consultation, as represented by this biological evaluation.

Location

The location of the activity covered by this assessment has been described in detail earlier in this document (see Section 3).

Description of Proposed Activity

The activity covered by this assessment have been described earlier in this document (see Section 4).

Potential Adverse Effects of the Proposed Activity

Projects would occur in or along the edges of marine, estuarine, and freshwater waters. EFH for ground fish (Table 10), coastal pelagics (Table 11) and salmonids (Table 12) could be affected by proposed activity.

Ground Fish EFH

Effects to the environmental baseline that would impact groundfish species are discussed in detail in Section 10.

Coastal Pelagic EFH

Effects to the environmental baseline that would impact coastal pelagic species are discussed in detail in Section 10.

Salmon EFH

Effects to the environmental baseline that would impact salmon species are discussed in detail in Section 10.

EFH Conservation Measures

Conservation measures designed to protect listed species and those proposed as threatened or endangered will also help avoid and minimize impacts of the proposed activities on salmonid and groundfish EFH (see Appendix D, E, F, and G).

Conclusion

In accordance with EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act, the Corps has determined that the proposed activity would not adversely impact EFH utilized by Pacific salmon and groundfish. It has been determined that the proposed action will not adversely affect EFH for federally managed fisheries in Washington waters.

Table 10. Ground Fish Species with Designated EFH and the Life History Stages that May Occur in the Action Area (PFMC, 1998a).

GROUND FISH SPECIES	Adults	Spawning/ Mating	Large Juvenile	Small Juvenile	Larvae	Eggs/ Parturition
Leopard Shark	X	X	N/A	X	N/A	X
Soupin Shark	X	X	N/A	X	N/A	X
Spiny Dogfish	X		X	X	N/A	X
California Skate	X	X	N/A	X	N/A	X
Ratfish	X	X	N/A	X	N/A	
Lingcod	X	X	X	X	X	X
Cabezon	X	X	X	X	X	X
Kelp Greenling	X	X	X	X	X	X
Pacific Cod	X	X	N/A	X	X	X
Pacific Whiting (Hake)	X	X	N/A	X	X	X
Sablefish				X		
Jack Mackerel	X		N/A		X	
Black Rockfish	X			X		
Bocaccio				X	X	
Brown Rockfish	X	X	N/A	X		X
Calico Rockfish	X		N/A	X		
California Scorpionfish						X
Copper Rockfish	X		X	X		X
Kelp Rockfish				X		
Quillback Rockfish	X		X	X	X	X
English Sole	X	X	N/A	X	X	X
Pacific Sanddab			N/A	X	X	X
Rex Sole	X		N/A			
Starry Flounder	X	X	N/A	X	X	X

N/A - Not Applicable. Either the species does not have a particular life stage in its life history, or when EFH of juveniles is not identified separately for small juvenile and large juvenile stages. For many species, habitats occupied by juveniles differ substantially, depending on the size (or age) of the fish. Frequently, small juveniles are pelagic and large juveniles live on or near the bottom; these life stages are identified separately in the table when sufficient information is available to do so. When juvenile habitats do not differ so substantially or when information is insufficient to identify differences, EFH is identified only for the juvenile stage (small and large juveniles combined), and N/A is listed in the column for the large juvenile stage in the table (PFMC, 1998a).

Table 11. Coastal Pelagic Species with Designated EFH and the Life History Stages that May Occur in the Action Area (PFMC, 1998a).

COASTAL PELAGIC SPECIES	Adults	Spawning/ Mating	Large Juvenile	Small Juvenile	Larvae	Eggs/ Parturition
Northern Anchovy	X		X		X	X
Pacific Sardine	X		X		X	X
Pacific Mackerel	X		X		X	X
Jack Mackerel	X					
Market Squid	X	N/A		N/A	N/A	N/A

N/A - Not Applicable. Either the species does not have a particular life stage in its life history, or when EFH of juveniles is not identified separately for small juvenile and large juvenile stages. For many species, habitats occupied by juveniles differ substantially, depending on the size (or age) of the fish. Frequently, small juveniles are pelagic and large juveniles live on or near the bottom; these life stages are identified separately in the table when sufficient information is available to do so. When juvenile habitats do not differ so substantially or when information is insufficient to identify differences, EFH is identified only for the juvenile stage (small and large juveniles combined), and N/A is listed in the column for the large juvenile stage in the table (PFMC, 1998a).

Table 12. Salmonid Species with Designated EFH and the Life History Stages that May Occur in the Action Area (PFMC, 1998a).

PACIFIC SALMON	Egg	Larvae	Young Juvenile	Juvenile	Adult	Spawning
Chinook salmon	X	X	X	X	X	X
Coho salmon	X	X	X	X	X	X
Pink salmon	X	X	X	X	X	X