

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

2004-05 Puget Sound Commercial and Recreational Salmon Fisheries

2. Name of applicant:

Washington Department of Fish and Wildlife, Intergovernmental Resource Management

3. Address and phone number of applicant and contact person:

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600 Capitol Way North, Olympia, Washington 98501

4. Date checklist prepared: May 28, 2004

5. Agency requesting checklist: Washington Department of Fish and Wildlife

6. Proposed timing or schedule (including phasing, if applicable):

June 16, 2004 through April 30, 2005

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. This 2004-05 fishery is currently being evaluated by NOAA for compliance with ESA. A long-term fishing plan (2004-2009 fishing seasons) is also being evaluated by NOAA for ESA compliance; SEPA associated with that long-term action will be completed once federal NEPA is complete.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

A federal Environmental Assessment was prepared by NOAA regarding 2003-04 season salmon fisheries in Puget Sound; those fisheries are similar to fisheries being proposed for 2004-05. An Environmental Impact Statement is being prepared by NOAA relating to their ESA decision on 2004-2009 Puget Sound salmon fisheries, the draft of which is currently available for public comment (69 Federal Register 20609) and can be found at: <http://www.nwr.noaa.gov/1sustfsh/salmon/SharvEIS.htm>. The Bureau of Indian Affairs is preparing and evaluating a federal Environmental Assessment for 2004-05 salmon fisheries in Puget Sound in relation to their support of tribal fisheries. The latter relates to fisheries managed by WDFW via the comanager relationship established pursuant to U.S. v. Washington litigation.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Yes. This 2004-05 fishery is currently being evaluated by NOAA for compliance with ESA. A long-term fishing plan (2004-2009 fishing seasons) is also being evaluated by NOAA for ESA compliance.

10. List any government approvals or permits that will be needed for your proposal, if known.

Incidental Take Statement under Section 7 of ESA

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Implementation of the 2004-05 State-Tribal Agreed-to Fisheries Document (2004-05 Comanager Fisheries Summary) developed in accordance with the Puget Sound Chinook Harvest Management Plan, the Comprehensive Coho Management Plan (PSTT and WDFW 1998), and harvest objectives for Puget Sound chum and steelhead under the U.S. v. Washington Puget Sound Salmon Management Plan.

Fisheries planned in 2004-05 include:

- Marine recreational salmon fisheries throughout Puget Sound (marine areas 5 through 13), beginning in June and extending through April 2005. These fisheries harvest primarily chinook and coho salmon, but also encounter other species depending upon time and area.
- Freshwater recreational salmon fisheries in most Puget Sound streams. Species retention rules vary by stream and time. Primary species include chinook, coho, sockeye, chum and steelhead. Note that freshwater fisheries directed at other species are covered by a separate Fisheries Management and Evaluation Plan under section 4(d) ESA, since chinook incidence in those fisheries is low.
- Chinook directed treaty and nontreaty commercial net fisheries in Bellingham/Samish/Lummi Bays (areas 7B,C,D), Tulalip Bay (Area 8D), East Kitsap (area 10E) and Elliott Bay (area 10A).
- Net fisheries in the Strait of Juan de Fuca and San Juan Islands directed at Fraser River sockeye and managed under authority of the Fraser River Panel of the Pacific Salmon Commission.
- Potential fisheries in area 10 and the Lake Washington system directed at Lake Washington sockeye salmon.
- Coho-directed fisheries in Bellingham Bay, Port Gardner/Port Susan (Area 8A), Mid-Sound (areas 10 and 11), and Hood Canal (areas 12 and 12B).
- Smaller coho-directed gillnet fisheries in Dungeness Bay (area 6D), Port Gamble Bay (area 9A), and Quilcene Bay (area 12A).
- Selective coho-directed reef net fishery in the San Juan Islands (area 7).
- Chum-directed gillnet and seine fisheries in the San Juan Islands, Bellingham Bay, Skagit Bay (area 8), Port Gardner/Port Susan, Mid-Sound and Hood Canal.

- Chinook, coho, sockeye, chum and steelhead net fisheries in freshwater areas, including Nooksack, Skagit, Stillaguamish, Snohomish Rivers, the Lake Washington system, Green, White, Puyallup, Nisqually, Skokomish, and Elwha Rivers.
- Tribal ceremonial and subsistence fisheries for all species

Refer to the 2004-05 comanagers fishery summary for details regarding planned fisheries and contingencies for the 2004-05 season.

These fisheries are conducted using a variety of fishing gear, including recreational hook-and-line and commercial purse seine, beach seine, drift gillnet, skiff gillnet, and reefnet. Gear descriptions are defined in WAC, and summarized below.

"Hook and line" is defined in WAC 220-56-100 as "the use of not more than one line with three hooks attached to a pole held in hand while landing fish, or the use of a hand operated line without rod or reel, to which may be attached not more than three hooks." "Hook" means one single, double or treble hook. A "single hook" means a hook having a single point. A "double hook" means a hook having two points on a common shank. A "treble hook" means a hook having three points on a common shank.

"Purse seine" is defined in WAC 220-16-075 as including all types of fishing gear consisting of a lead line, cork line, auxiliary lines, purse line and purse rings and mesh net webbing fashioned in such a manner that it is used to encircle fish, and in addition prevents their escape under the bottom or lead line of the net by drawing in the bottom of the net by means of the purse line so that it forms a closed bag.

Under WAC 220-47-301, (1) Lawful purse seine salmon nets in Puget Sound shall not exceed 1,800 feet in length along the cork line while wet and purse seine and lead combined shall not exceed 2,200 feet. Neither shall contain meshes of a size less than 3-1/2 inches, nor shall the meshes of the seine and lead be lashed together to form one continuous piece of webbed gear. It shall be lawful as part of the purse seine to have a bunt not more than 10 fathoms long which may contain mesh of a size not less than 3-1/2 inches. (2) It shall be unlawful to take or fish for salmon with purse seine gear in Puget Sound which contains mesh webbing constructed of a twine size smaller than 210/30d nylon, 12 thread cotton or the equivalent diameter in any other material.... (6) It shall be unlawful to take or fish for salmon with purse seine gear in Puget Sound unless at least four sections, each measuring no less than 12 inches in length, along the corkline in the bunt and within 75 fathoms of the bunt have no corks or floats attached. These four sections must be spaced such that one section is along the corkline in the bunt, within 5 fathoms of the seine net, and the other three sections must be spaced at least 20 fathoms apart along the corkline within 75 fathoms of the bunt.

WAC 220-47-319 specifies a special purse seine mesh size: It shall be unlawful to take, fish for or possess salmon taken with purse seine gear in any Puget Sound Salmon Management and Catch Reporting Area exclusive of sockeye and pink salmon management unless said purse seine gear is constructed so that the first 100 meshes below the corkline that are within 75 fathoms of the bunt, excluding the bunt, are of a size not less than 5 inches stretch measure.

Beach seine gear is defined as an "emerging commercial fishery" gear in WAC 220-47-427: (7) It is unlawful to take salmon with beach seine gear that does not meet the requirements of this subsection. (a) Beach seine salmon nets in Puget Sound shall not exceed 600 feet in length or 100 meshes in depth, or contain meshes of a size less than 3 inches or greater than 4 inches. (b) Mesh webbing must be constructed with a twine size no smaller than 210/30d nylon, 12 thread cotton, or the equivalent diameter in any other material.

"Drift gill net" or "drift net" gear is defined in WAC 220-16-040 as "a gill net of single web construction, not anchored, tied, staked, placed, or weighted in such a manner that it cannot drift."

In WAC 220-47-302, Puget Sound Gill nets are further defined: "(1) Lawful drift gill net salmon gear in Puget Sound shall not exceed 1,800 feet in length nor contain meshes of a size less than 5 inches. 2) Lawful skiff gill net salmon nets in Puget Sound shall not exceed 300 feet in length and 90 meshes in depth nor contain meshes of a size less than 5 inches. Nets must be retrieved by hand (no hydraulics may be used). Nets must be attended by the fisher at all times. (3) Drift gill nets and skiff gill nets shall be operated substantially in a straight line. Circle setting or setting other than substantially in a straight line shall be unlawful. (4) It is unlawful to take or fish for salmon with gill net gear in Areas 7 or 7A sockeye or pink fisheries unless said gill net gear is constructed so that the first 20 meshes below the corkline are composed of five-inch mesh white opaque minimum 210d/30 (#12) diameter nylon twine. (5) It is unlawful to take or fish for salmon with gill net gear in Areas 7 or 7A between the dates of September 30 and October 20 unless the gill net vessel has aboard and uses operable recovery boxes as described in [WAC 220-47-302(5) subsection (a)]."

"Skiff gill nets" are defined in WAC 220-16-046 as "a gill net of single web construction with floats along the corkline sufficient to float the net. A skiff gill net may be laid in part on shore, but may not be anchored, tied, or staked, nor have a lead line so heavily weighted that the net cannot drift."

"Reef net" gear is defined in WAC 200-16-080 as "a non self-fishing open bunt square or rectangular section of mesh netting suspended between two anchored boats fashioned in such a manner that to impound salmon passing over the net, the net be raised to the surface. The lead or leads of any "reef net" must be floating at all times, except under stress of tidal conditions, and shall not be fixed to any piling whatsoever, nor shall the lead or leads be constructed of any kind of mesh webbing. In the construction of any "reef net" no principle of a fyke net or fish trap may be employed."

Per WAC 220-47-303, "Lawful reef net salmon nets in Puget Sound shall not exceed 300 meshes on any side nor contain meshes of a size less than 3-1/2 inches nor utilize more than two leads. Each of said leads shall not exceed 200 feet in length measured from the bows of the reef net boats to the nearest end of the head buoys. The use of any false, detached or auxiliary lead shall be unlawful."

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Puget Sound fishing area is bounded on the east by the Cascade Mountain Range and on the west by the Olympic Mountains. Its northern part reaches the international boundary between the United States and Canada, and it ends at the base of the low hills of the Coast Mountain Range near Olympia. The surrounding land mass of the fishing area includes approximately 13,600 square miles, 20 percent of the State of Washington's total surface land mass (66,582 square miles).

The Puget Sound fishing area includes all marine waters of the State of Washington east of, and including the Strait of Juan de Fuca. The fishing area also includes all State of Washington freshwater tributaries of these marine waters east of the Strait of Juan de Fuca, and the freshwater tributaries of the Strait of Juan de Fuca east of, and including the Elwha River drainage.

There are 12 Washington counties within the fishing area. Major freshwater drainages that discharge to Puget Sound are listed in Table 1.

Strait of Juan de Fuca. This 90-mile long waterway between British Columbia (Canada) and Washington State, with an average width of 13 miles, extends from the Pacific Ocean at Cape Flattery to the vicinity of Port Townsend in the United States and Victoria in British Columbia. The fishing area includes only the waters of the United States. Washington counties Clallam and Jefferson border the southern portion of the Strait of Juan de Fuca. Major river systems draining into the Strait of Juan de Fuca include the Elwha River and the Dungeness River in Clallam County.

San Juan Islands. The northern portion of the fishing area includes the U.S. marine areas referred to as the Strait of Georgia, Rosario Strait and marine waters of the San Juan Archipelago. San Juan County is surrounded by these waters, and Whatcom and Skagit Counties border the area.

North Puget Sound. The northern portion of the fishing area, including marine areas referred to as Bellingham Bay, Samish Bay, Skagit Bay, Saratoga Passage, Port Susan, and Port Gardner are collectively referred to herein as North Puget Sound. Major drainages that enter North Puget Sound include the Nooksack, Samish, Skagit, Stillaguamish, and Snohomish Rivers. Counties with shorelines in this area include Whatcom, Skagit, Snohomish, and Island.

South Puget Sound. South Puget Sound is an inland, saltwater sound that extends south from Point Wilson near Port Townsend southwesterly to Budd Inlet, with other branches in Thurston and Mason counties. Major freshwater drainages within South Puget Sound include Lake Washington basin, Green, Puyallup, White, Nisqually, and Deschutes Rivers. Counties include King, Pierce, Thurston, Mason and Kitsap.

Hood Canal. This saltwater channel extends southwest from the vicinity of Port Ludlow in Jefferson County through Kitsap and Mason counties, to the Great Bend at Union, then northeast to Belfair in Mason County. Major freshwater drainages within Hood Canal include the Skokomish, Hamma Hamma, Dosewallips, Duckabush, and the Big and Little Quilcene Rivers.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other

Activity occurs over and within marine and fresh water bodies as described above.

b. What is the steepest slope on the site (approximate percent slope)?

N/a

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

N/a

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

N/a

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

N/a

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

N/a

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

N/a

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

N/a

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Fishing vessel emissions, quantities unknown, however fishing vessels make up a very low proportion of the recreational and commercial vessels transiting Puget Sound.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

N/a

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

N/a

3. Water

a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Physical area is described above; includes marine areas and many major streams within the Puget Basin.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Vessels operate on the surface of these waters; gear is operated within the water column.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

N/a

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

N/a

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The most likely pollutants attributable to the operation of fishing vessels are in the class of compounds known as polycyclic aromatic hydrocarbons (PAHs). These include diesel fuel, gasoline and lubricants that might be spilled directly into the water; unburned fuels and oils associated with the operation of two-cycle engines such as outboard motors; and deposition of the products of combustion from larger vessel engines. PAHs have limited solubility in water, and are typically not found free in the water column. Lighter fractions tend to come to the surface where they evaporate. Heavier versions tend to sink to the bottom and adsorb to sediments. These contaminants can reenter the water column if sediments are disturbed, and are known to cause problems for benthic organisms and fishes that are in direct contact with the sediments.

Central and South Puget Sound have been identified as areas where PAH contamination is significant. This contamination primarily resulted from historic use of creosote (a wood preservative) at specific locations, stormwater runoff from urban areas (petroleum product residues in runoff from parking lots and roadways), and the byproducts of combustion (wood burning, coal burning, and vehicle exhaust). Existing water quality problems attributable to polycyclic aromatic hydrocarbons are the result of a multitude of small, chronic contaminations, to which the operation of fishing vessels likely contributes.

Vessel operations in and around moorage facilities and in other shallow areas have the potential to stir up bottom sediments and cause short-term increases in turbidity in marine and freshwater areas. Boat wakes may contribute to bank erosion in some areas.

2004-05 fisheries are not expected to differ significantly in their potential impacts to water quality since, in general, fishing activity has only a limited impact on water quality compared to the myriad other sources of pollutant inputs to Puget Sound. Non-treaty commercial fishing vessels, alone, represent only one-tenth of one percent of the total vessels registered by Washington Department of Licensing in Puget Sound. Based on the total number of registered vessels in Puget Sound, fishing operations, either sport or commercial, do not represent a significant proportion of the total, and therefore probably do not represent a significant threat to water quality degradation. Indeed, recent decreases in fishing opportunity and effort, combined with increases in the non-fishing-related recreational boating population, mean that the proportion of fishing vessels, and therefore risk of water quality degradation attributable to fishing, is decreasing.

Most vessels are used for more than salmon fishing activity. This is probably most true for sport fishing vessels rather than for commercial fishing vessels, but the majority of fishing vessel activity within the Puget Sound fishing area is related to sport fishing. Both sport and commercial fishing vessels are used to harvest other resources (such as, shrimp, herring, crab, rock fish, and shellfish), and smaller vessels are used for other leisure activities (like family trips, diving, pleasure cruising, and water skiing). Even if fishing were not to occur, the reduction in vessel traffic would likely be low or immeasurable given the alternative uses available for these vessels.

b. Ground:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

N/a

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

N/a

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

N/a

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

n/a

4. **Plants**

a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- 4 water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Fish habitat potentially affected by salmon fishing within the Puget Sound fishing area includes benthic substrate and associated plant communities in marine areas where gillnets, purse seines and beach seines are used, especially in shallower areas or areas of eelgrass beds. Riparian habitat may be affected by wading fishermen, the wakes of fishing craft, or other mechanical disturbances caused during in-river fisheries.

Four of the five types of salmon fishing authorized in Puget Sound and the Strait of Juan de Fuca – sport, purse seine, beach seine, reef net, or gillnet – do not purposely operate in the benthic zone where marine plants occur. Beach seining is an exception, where a seine net is dragged along the bottom as it is hauled ashore. However, beaching seining generally occurs over sandy or pebbly substrates to avoid snagging on exposed rocks, therefore not occurring where impacts to marine plants are most likely to occur.

The sport fishing “mooching” technique involves bouncing weight and bait along the seafloor, so an occasional marine plant is snagged.

c. List threatened or endangered species known to be on or near the site.

N/a

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None

5. Animals

a. Circle any birds and animals ~~which~~ that have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other:

Table 1 Affected fish species in the Puget Sound fishing area

Species	ESA Status	Overall Health
Puget Sound chinook	Threatened (11/99)	Escapements increasing; productivity declining
Fraser River sockeye	N/a	Harvestable most years
Baker River Sockeye	Not Warranted	Depressed
Lake Washington sockeye	Not warranted	Increasing; harvestable most years
Fraser River pink	N/a	Harvestable most (odd-numbered) years
Puget Sound odd-year pink	Not warranted	Harvestable most (odd-numbered) years
Puget Sound even-year pink	Not warranted	Increasing
Puget Sound coho	Candidate	Harvestable most years
Hood Canal & JDF summer chum	Threatened (11/99)	Increasing
Puget Sound fall and winter chum	Not warranted	Harvestable most years
Puget Sound/Coastal bull trout	Threatened (11/99)	Directed recreational harvest in Skagit and Snohomish Rivers; some populations increasing, some still depressed
Puget Sound steelhead	Not warranted	Stable
Coastal chinook	Not warranted	Harvestable
Coastal coho	Not warranted	Harvestable
Lower Columbia River chinook	Threatened	Depressed
Upper Willamette River spring chinook	Threatened	Depressed
Columbia River chum	Threatened (11/99)	Depressed
Upper Columbia summer-fall chinook	Not warranted	Harvestable
Snake River fall chinook	Threatened (1992)	Increasing

Table 1 Affected fish species in the Puget Sound fishing area

Species	ESA Status	Overall Health
Flatfish: Pacific sandabs, butter sole, Dover sole, sand sole, starry flounder and other species,	Not Warranted	46% of Puget Sound marine recreational catch
Rockfish: copper, quillback, black, brown, and yellowtail	Not Warranted	30% of catch
Surf perches	Not Warranted	10% of catch
Pacific halibut	Not Warranted	2% of catch
Sculpins	Not Warranted	2% of catch
Spiny dogfish	Not Warranted	1% of catch
Lingcod	Not Warranted	1% of catch
Walleye Pollock	Not Warranted	Declining
"Forage" fish: herring, sandlance, smelt, juvenile hake and juvenile pollock	Not Warranted	Declining

Table 2 Presence and association of marine birds, mammals, marine invertebrates and other wildlife species with the marine habitats of Puget Sound.

Species	Bays and Estuaries	Inland Marine Deeper Waters	Marine Nearshore	Marine Shelf
Loons				
Red-throated Loon	◆□	◆□	◆□	◆□
Pacific Loon	◆□	◆□	◆□	◆□
Common Loon	◆□	◆□	◆□	◆□
Grebes				
Horned Grebe	◆□	◆□	◆□	◆□
Red-necked Grebe	◆□	◆□	◆□	◆□
Eared Grebe	◆□	□	◆□	□
Western/Clarke's Grebe	◆□	◆□	◆□	◆□
Fulmars and Shearwaters				
Northern Fulmar	□	□	□	◆□
Sooty Shearwater	◆□	◆□	◆□	◆□
Short-tailed Shearwater	□	◆□	◆□	◆□
Pelicans				
Brown Pelican **	◆□	□	◆□	□
Cormorants				
Double-crested Cormorant	◆□	◆□	◆□	□
Brandt's Cormorant	◆□	◆□	◆□	◆□
Pelagic Cormorant	◆□	◆□	◆□	◆□
Geese				
Snow Goose	◆□	□	□	□
Dabbling Ducks				
Northern Pintail	◆□	□	◆□	□
American Wigeon	◆□	◆□	◆□	□

Table 2 Presence and association of marine birds, mammals, marine invertebrates and other wildlife species with the marine habitats of Puget Sound.

Species	Bays and Estuaries	Inland Marine Deeper Waters	Marine Nearshore	Marine Shelf
Sea Ducks				
Greater Scaup	◆□	◆□	◆□	□
Lesser Scaup	◆□	□	□	□
Harlequin Duck	◆□	□	◆□	□
Long-tailed Duck	◆□	◆□	◆□	□
Black Scoter	◆□	◆□	◆□	◆□
Surf Scoter	◆□	◆□	◆□	◆□
White-winged Scoter	◆□	◆□	◆□	◆□
Common Goldeneye	◆□	□	◆□	□
Barrow's Goldeneye	◆□	□	◆□	□
Bufflehead	◆□	□	◆□	□
Mergansers				
Red-breasted Merganser	◆	□	◆□	□
Osprey				
Osprey	◆□	□	◆□	□
Eagles				
Bald Eagle **	◆□	◆□	◆□	◆□
Oystercatcher				
Black Oystercatcher	◆□	□	□	□
Phalaropes				
Red-necked Phalarope	◆□	◆□	◆□	◆□
Red Phalarope	□	□	◆□	◆□
Gulls				
Bonaparte's Gull	◆□	◆□	◆□	◆□
Heermann's Gull	◆□	◆□	◆□	◆□
Mew Gull	◆□	◆□	◆□	◆□
Ring-billed Gull	◆□	◆□	◆□	◆□
California Gull	◆□	◆□	◆□	◆□
Herring Gull	◆□	◆□	◆□	◆□
Thayer's Gull	◆□	◆□	◆□	◆□
Western Gull	◆□	◆□	◆□	◆□
Glaucous-winged Gull	◆□	◆□	◆□	◆□
Glaucous Gull	◆□	◆□	◆□	◆□
Sabine's Gull			◆	◆
Black-legged Kittiwake			◆	◆
Terns				
Caspian Tern	◆□	□	◆□	□
Elegant Tern	◆□	□	◆□	◆□
Common Tern	◆□	◆□	◆□	◆□
Arctic Tern	◆□	◆□	◆□	◆□
Alcids				
Common Murre	◆□	◆□	◆□	◆□
Pigeon Guillemot	◆□	◆□	◆□	◆□
Marbled Murrelet **	◆□	◆□	◆□	◆□
Ancient Murrelet	□	◆□	◆□	◆□

Table 2 Presence and association of marine birds, mammals, marine invertebrates and other wildlife species with the marine habitats of Puget Sound.

Species	Bays and Estuaries	Inland Marine Deeper Waters	Marine Nearshore	Marine Shelf
Cassin's Auklet	□	◆□	◆□	◆□
Rhinoceros Auklet	◆□	◆□	◆□	◆□
Tufted Puffin	□	◆□	◆□	◆□
Marine Mammals				
Pinnipeds				
Steller Sea Lion **		◆	◆	◆
California Sea Lion	◆	◆	◆	◆
Harbor Seal	◆	◆	◆	◆
Northern Elephant Seal		◆	◆	◆
Otter				
Sea Otter	□	□	◆□	◆□
Baleen Whales				
Minke Whale	□	◆□	□	◆□
Gray Whale	◆□	◆□	◆□	◆□
Fin Whale **	□	□	□	◆□
Humpback Whale **	□	□	□	◆□
Toothed Whales and Dolphins				
Killer Whale	◆□	◆□	◆□	◆□
Pacific White-sided Dolphin	□	□	□	◆□
Short-finned Pilot Whale	□	□	□	◆□
Risso's Dolphin	□	□	□	◆□
Harbor Porpoise	◆□	◆□	◆□	◆□
Dall's Porpoise		◆	◆	◆
Turtles				
Pacific leatherback turtle **				◆
Benthic Invertebrates				
Rocky Intertidal: periwinkle snails, limpets, shore crabs, and barnacles; Nucella snails, hermit crabs, blue mussels, goose barnacles, Pisaster sea stars, and chitons; anemones, sea urchins, northern abalone, and scallops	◆		◆	
Rocky Subtidal: sea stars, anemones, urchins, abalone, and scallops; octopus, broken-back shrimp, and sea slugs	◆		◆	
Sandy Intertidal: sand dollars, crangon shrimp, basket whelks, and burrowing sea cucumbers; moon snails, clams including bent-nosed, sand, tellina, and heart cockles;	◆		◆	
Muddy Intertidal: gaper, geoduck, littleneck, Manila, bent-nosed, butter, soft-shelled clams, and heart cockle; Ghost shrimp	◆		◆	
Deeper water subtidal: brittle stars, mediaster sea stars, sea pens, and Dungeness, red, and helmet crabs.	◆		◆	

Present ◆ Generally Associated ◆ Closely Associated ◆

ESA-listed **

b. List any threatened or endangered species known to be on or near the site.

See above.

c. Is the site part of a migration route? If so, explain.

Yes, fishing occurs purposely within the migration routes of Pacific salmon. Whales and seabirds are also found migrating through the area.

d. Proposed measures to preserve or enhance wildlife, if any:

General salmon:

Subarea and nearshore closures for both sport and commercial fisheries; Protect milling fish from undue fishing pressure, and/or reduce impacts to other resources

Gear requirements such as species-specific gillnet mesh sizes; Specific gillnet mesh requirements allow targeting on one species (size) of salmon while repelling other species (sizes).

“Fish Friendly” certification is required for all commercial vessel operators fishing in areas 7 or 7A ; Ensures “best fishing practices” are understood by all fishers who are required to release fish

Special limited-participation commercial fisheries are implemented for gill nets and purse seines ; When full-fleet effort is not appropriate due to the risk of overharvest, or when on-board monitors are required

Wild salmon:

Mass marking to preserve access to hatchery fish – selective fisheries; Mass marking allows hatchery products to be distinguished in the fishery and on the spawning grounds. This benefits both fishing opportunity and assessment of hatchery straying.

Selective commercial gear –reefnet; Beach seines are being tested and implemented in order to improve survival of fish released.

Commercial purse seines, gillnets and reef nets use recovery boxes when release of certain fish is required; Allows fish to recover from handling prior to being released. Studies show released fish survive better when recovery boxes are used.

Reef net selective release; Reef net gear maintains a targeted fishery on abundant coho in Area 7 because survival from that gear of fish required to be released is very high.

Gillnets required to cut net meshes in order to release non-target species; Fish released from a gill net under typical methods do not exhibit high survival. Cutting meshes to release the fish significantly reduces trauma to the animal, and survival increases.

Special Recreational Handling Rule: In Areas 5-13: it is illegal to bring a wild salmon, or a species of salmon, aboard a vessel if it is unlawful to retain those salmon; This provision reduces trauma to released fish, thus increasing post-release survival.

Bull trout:

Bull trout release in all marine and most freshwater fisheries beginning in 1991; Reduced fishing-related mortality

Summer chum:

Recreational Fisheries in ocean area 4, Strait of Juan de Fuca, San Juan Islands, Admiralty Inlet, CRC Area 10, CRC Area 12 (Hood Canal); Release chum (dates differ, between July and September); fisheries within Puget Sound are subject to a special handling rule that prevents any fish required to be released from being brought on board a vessel.

Areas 1, 2, 3, 4, 4B, 5, 6C, 6 nontreaty and treaty commercial troll, and Areas 6, 7, 7A, 9A, 12, 12C, 12C treaty and nontreaty commercial net fishery: required to release summer chum; Reduces harvest mortality

Hood Canal hatchery beach seine fishery release of summer chum; fishing method allows release of chum with high survival.

Wild steelhead:

Wild steelhead release; In 2004, the Washington Fish and Wildlife Commission required release of all wild (unmarked) steelhead in order to allow additional spawners.

~~To avoid seabirds and minimize their mortality:~~

Gillnets fishing in the San Juan Islands areas are required to use a net modified so that the top portion is visible to diving birds; Studies show that birds are able to avoid these nets, so entanglements are less frequent

Gillnets are not allowed to fish in areas 7/7A between midnight and 1 ½ hours after sunrise; Avoids times of highest feeding activity for diurnal foraging seabirds

Purse seine nets are required to leave at least four sections of 12+ -inch openings in cork lines; Allows birds encircled by the net to escape prior to the net's being closed

~~To deal with derelict gear:~~

Gillnet fishers are required to mark their nets with permanent identification; Allows net owner to be identified if net is lost

WDFW program for reporting derelict gear; programs for removal of derelict gear; Identify derelict gear for removal to eliminate associated impacts to habitat and biota

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

fishing vessel fuels

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

N/a

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

n/a

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Probably hazards associated with vessel operation

1) Describe special emergency services that might be required.

N/a

2) Proposed measures to reduce or control environmental health hazards, if any:

Assume Coast Guard regulation minimize hazards

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Vessel traffic; animal calls

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Vessel operation noise; typical fishing hours for purse seines area dawn to dusk; gillnets fish from dusk to midnight in northern areas, dusk to dawn in the remainder of the Sound, 24-hours in streams. Recreational fishing typically occurs during daylight hours.

3) Proposed measures to reduce or control noise impacts, if any:

None

8. Land and shoreline use

a. What is the current use of the site and adjacent properties?

The Puget Sound fishing area includes marine and freshwater systems, and associated riparian and nearshore areas. The majority of the surrounding land ownership is private (53%), followed by federal (36%), state/local (10%), and tribal (1%). In particular, most marine and freshwater shoreline, adjacent to which salmon fisheries occur, are under private ownership.

b. Has the site been used for agriculture? If so, describe.

N/a

c. Describe any structures on the site.

Facilities used in association with river fisheries are essentially all in place.

d. Will any structures be demolished? If so, what?

N/a

e. What is the current zoning classification of the site?

N/a

f. What is the current comprehensive plan designation of the site?

N/a

g. If applicable, what is the current shoreline master program designation of the site?

unknown

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

San Juan County Marine Stewardship Area, including Marine Biological Reserves, National Wildlife Refuge, Bottomfish Recovery Zones, Whalewatch Exclusion Zones and Sensitive Eelgrass Areas.

Brackett's Landing Shoreline Sanctuary/ Edmonds Underwater Park

Keystone Conservation Area

Admiralty Head Marine Preserve

Orchard Rocks Conservation Area

City of Des Moines Park Conservation Areas

South 239th Street Park Conservation Area

Colvos Passage Marine Preserve

Sund Rock Conservation Area

Octopus Hole Conservation Area

Waketick Creek Conservation Area

Titlow Beach Marine Preserve

Saltar's Point Conservation Area

Zee's Reef Marine Preserve

i. Approximately how many people would reside or work in the completed project?

n/a

j. Approximately how many people would the completed project displace?

N/a

k. Proposed measures to avoid or reduce displacement impacts, if any:

n/a

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Activities under the 2004-05 season fisheries are projected to have no perceptible adverse or beneficial effect on land ownership, land use or designated recreational areas within the Puget Sound fishing area. Construction activities directly related to salmon fisheries during the one-year duration of this action would likely be limited to maintenance and repair of existing facilities, and are not expected to result in additional impacts to riparian habitats associated with the 2004-05 fisheries.

Growth or decline in an economy is typically the propulsive force for land use changes. Because the proposed action is limited to one year, the probable economic consequences of the fishery would likely be too small to affect land use during that period.

Shoreline property owners can become concerned about trespass in the case of beach seining, recreational angling and other on-shore fishing methods.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

N/a

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

N/a

c. Proposed measures to reduce or control housing impacts, if any:

n/a

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

N/a

b. What views in the immediate vicinity would be altered or obstructed?

Some waterfront property owners can be concerned about impacts from the fishing activity on views adjacent to their property.

c. Proposed measures to reduce or control aesthetic impacts, if any:

n/a

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Nighttime gill net fishers use spotlights to inspect their nets for caught salmon, and to attempt to scare seals away from the net.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

N/a

c. What existing off-site sources of light or glare may affect your proposal?

N/a

d. Proposed measures to reduce or control light and glare impacts, if any: n/a

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Recreational fishing, recreational boating, sailing, SCUBA diving, and other boating-related recreational activities.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Recreational boaters are sometimes concerned with commercial fishing vessel traffic, and this concern caused the WDFW in the 1980's to begin to avoid opening nontreaty (marine) commercial salmon fisheries on Fridays, Saturdays or Sundays in order to avoid impacts to the bulk of recreational vessel traffic. Clearly, weekend days are preferred recreational boating days. The proposal is not projected to affect recreational boating and related marine recreational activities on Puget Sound.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Avoidance of weekend commercial fisheries, as noted above.

13. Historic and cultural preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

N/a

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

N/a

c. Proposed measures to reduce or control impacts, if any:

n/a

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Entire fishing area contains active vessel transit routes. Washington State Ferries and major commercial cargo vessels transit through fishing areas.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

N/a

c. How many parking spaces would the completed project have? How many would the project eliminate?

N/a

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways?
If so, generally describe (indicate whether public or private).

N/a

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Yes, see above.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

N/a

- g. Proposed measures to reduce or control transportation impacts, if any:

Commercial salmon fishing can cause impacts to marine transportation systems. High-effort fisheries can affect the progress of commercial deep-draft vessels in the Strait of Juan de Fuca, Rosario Strait, and within Puget Sound proper. Ferry traffic has sometimes been impeded during high-effort fishing times, when commercial fishing boats are densely packed into the open fishing area. Finally, fishing effort adjacent to the Hood Canal Floating Bridge has sometimes run afoul of transiting naval vessels.

Commercial fishers are highly aware of the vessel traffic lane and right-of-way rules, and few incidents have occurred considering the potential presented by short openings and restricted fishing areas.

WDFW works with U.S. Coast Guard and Navy, and Washington DOT to inform commercial fishers about vessel traffic and safety provisions. Since the late 1980s, WDFW has provided fishers with up-to-date information on areas of concern the safety of both vessel transit and automobile transportation infrastructure (ferries and bridges).

15. Public services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Regulatory enforcement is an important aspect of any industry, and fishing is no exception. WDFW and the Puget Sound Indian Tribes, as well as the Coast Guard and NOAA, each have capacities directed at enforcing fishing rules and laws. No additional enforcement is envisioned for the 2004-05 fisheries compared with previous years, except as developed by special arrangement among the comanagers.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

N/a

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity ~~which~~ that might be needed.

N/a

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:

[signed by Teresa Scott]
Natural Resource Policy Analyst,
Intergovernmental Resource Management Program,

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY

Washington Department of Fish and Wildlife

Date Submitted: May 28, 2004

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Please see response to question B.3(a)(6).

Proposed measures to avoid or reduce such increases are:

None

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Overall Harvest Outcomes Resulting from the 2004-05 Puget Sound Salmon Fishery

Projected Puget Sound harvests by species under 2004-05 Puget Sound Salmon Fisheries are listed in Table 3. Under 2004-05 fishing regime, a total of 2.38 million salmon are projected to be caught in Puget Sound salmon fisheries. Of these, about 6% are chinook, 21% sockeye, 18% coho, 55% chum and 0.1% steelhead.

Table 3 Expected U.S. Harvests By Species in 2004-05 Puget Sound Salmon Fisheries (landed catch of aggregated natural and hatchery origin fish).

fishina Area	Chinook	Sockeve	Coho	Chum	Commercial Steelhead
Strait of Juan de Fuca	7,892	300,000	49,658	176,000	na
San Juan Islands	11,928		7,425		na
Bellingham – Nooksack – Samish	26,706	na	38,026	62,700	532
Skagit	2076	na	36,801	97,300	
Stillaguamish – Snohomish	7,343	na	72,747	212,300	
South Sound	65,306	135,900	185,167	456,000	663
Hood Canal	16,040	na	34,670	383,600	0
Strait Tributaries	3	na	8,136	Na	739

Sources: Chinook FRAM 1604; Coho FRAM 1604; Chum and sockeye forecasts; steelhead average recent historic catches.

Impacts to Puget Sound Chinook

Summaries of expectations for Puget Sound chinook escapements and exploitation rates resulting from 2004-05 Puget Sound Salmon Fisheries are provided in Tables 4 and 5.

Under 2004-05 Puget Sound Salmon Fisheries, of the fourteen Puget Sound chinook management units (MU), only one (Snohomish) exceeds the Rebuilding Exploitation Rate (RER) set forth in the Puget Sound Comprehensive Chinook Management Plan – Harvest Component. Snohomish total exploitation rate is 29%, compared against an RER of 21%, and a Southern U.S. (SUS) rate of 13% compared to 15% SUS Critical Exploitation Rate Ceiling (CERC; the maximum allowed exploitation rate in southern U.S. fisheries under critical abundance). Snohomish populations are rated as Category 1 native populations, and are therefore of heightened concern in this regard. However, based on 2004-05 Puget Sound Salmon Fisheries, Snohomish natural spawners exceed the Lower Escapement Threshold (LAT; the threshold below which CERC applies) by 3.3 times, and the Upper Management Threshold (UMT) by double, thus buffering any concern based on exploitation alone, and shifting that concern to one of degraded productivity due to density of spawners.

Modeled exploitation rates were below the RER standards for ten populations by margins ranging from one to twenty percentage points. There is not yet an RER for the Nooksack spring populations, and the rate of 27%, combined with the chronic low natural origin escapement of these populations, causes some concern given this uncertainty. Still, only 6% of that 27% occurs in SUS fisheries, indicating that Puget Sound fisheries afford little opportunity to improve the numbers of spawners for these populations.

Table 4 Performance of 2004-05 Puget Sound Salmon Fisheries Relative to 2004-09 Harvest Management Plan (HMP) Rebuilding Exploitation Rates (RER).

Management Unit	HMP RER	Exploitation Rate	Projected Performance
Nooksack	Under Development	27%	☹
Skagit Summer/Fall	50%	38%	4
Skagit Spring	38%	33%	4
Stillaguamish	25%	23%	4
Snohomish	21%	29%	☹
Lake Washington (Cedar R.)	15% PT SUS	10%	4
Green	15% PT SUS	10%	4
White	20%	19%	4
Puyallup	50%	50%	☹
Nisqually	Na	76%	Na
Skokomish	15% PT SUS	12%	4
Mid-Hood Canal Tributaries	15% PT SUS	11.5%	4
Dungeness	10% SUS	4%	4
Elwha	10% SUS	4%	4

Source: 2004-09 HMP; Chinook FRAM 1604

Projected escapement for eleven MUs exceeded the LAT by 1 ½ to 8 ½ times. However, modeled escapement was 60%, 70% and 90% of LAT for the Nooksack, Mid-Hood Canal and Dungeness MUs (Table 6), indicating that these MUs are managed for CERCs and identified as in “Critical Abundance” status.

Table 5 Performance of 2004-05 Puget Sound Salmon Fisheries Relative to 2004-09 HMP Escapement Thresholds.

Management Unit	Plan LAT*	Plan UMT*	Projected Natural Escapement	Difference from LAT	Difference from UMT
Nooksack	1,000	2,000	570	⊖ 0.6	na
Skagit Summer/Fall	4,800	14,500	19,929	4.2	☺ 1.4
Skagit Spring	576	2,000	1,183	2.1	0.6
Stillaguamish	650	900	1,891	2.9	☹☹ 2.1
Snohomish	2,800	4,600	9,341	3.3	☹☹ 2.0
Lake Washington (Cedar R.)	200	1,200	414	2.1	0.3
Green	1,800	5,800	5,898	3.3	☺ 1.0
White	200	1,000	1,705	8.5	☺ 1.7
Puyallup	500	500	2,149	4.3	☹☹ 4.3
Nisqually	Na	1,100	2,079	Na	☺ 1.9
Skokomish	800	1,650 nat.	1,262	1.6	0.8
Mid-Hood Canal Tributaries	400	750	298	⊖ 0.7	na
Dungeness	500	925	461	⊖ 0.9	na
Elwha	1,000	2,900	2,310	2.3	0.8

Source: 2004-09 HMP; Chinook FRAM 1604

* LATs and UMTs are provided and evaluated on a population-specific basis; values presented in this table represent the total for the management unit.

In summary, implementation of 2004-05 Puget Sound Salmon Fisheries would exert exploitation rates above RER for one of thirteen MUs having RER objectives, however, escapement for that one MU exceeds not only LAT by 3 times, but UMT by double. Escapements are above LAT for eleven MUs, and above the UMT, in most cases by substantial margins, for seven MUs. Escapements are between 10% and 40% below LAT for three of fourteen MUs, and these continue to be of concern.

However, even if Puget Sound salmon fisheries were closed in 2004-05, neither Nooksack, nor Mid-Hood Canal nor Dungeness management units meet LAT. Nooksack exploitation would be only 4 percentage points lower if fisheries were closed, yielding only 11 more spawners distributed among the two populations. Mid-Hood Canal and Dungeness exploitations would be 8 and 3 percentage points lower, respectively, adding only 8 spawners to each population (that 8 distributed among the three mid-Hood Canal streams). Not only would escapements not achieve LAT for those three MUs under a “no fishing” scenario, it is not clear that the few additional spawners resulting from that scenario would benefit the stocks, given the variability in environmental conditions affecting the productivity (i.e. number and survival of progeny) of those spawners.

Impacts to Other Species

Coastal and Columbia River salmon: Under the 2004-05 Puget Sound salmon fishing regime, it is assumed that Puget Sound coho, sockeye and chum will be managed to meet or exceed their escapement goals. Catch of coastal and Columbia river salmon stocks in Puget Sound fisheries is extremely low, and does not affect their number of spawners.

Puget Sound summer chum: Impacts to summer chum from 2004-05 Puget Sound Salmon Fisheries are limited to incidental catches during fisheries directed at sockeye and coho. Planned fisheries include several provisions specifically designed to minimize summer chum impacts [refer to response to question 5(d)].

Puget Sound steelhead: Steelhead are rarely taken in ocean or Puget Sound marine commercial fisheries, and only occasionally taken in near-terminal fisheries or in-river commercial and recreational salmon fisheries. Harvests of steelhead under 2004-05 Puget Sound Salmon Fisheries are estimated to be approximately 1,900 fish, which is similar to catches in recent years.

Puget Sound bull trout: The current level of incidental bull trout harvest in commercial open-water fisheries (gill net and seine) within Puget Sound is unknown. However, none have been observed in over 2,100 sets (i.e. sessions of fishing with

the net) from fifteen years of observations of nontreaty commercial gillnet and purse seine operations throughout Puget Sound. Bull trout are also encountered during net and recreational fisheries in freshwater areas, also to an unknown level.

~~Groundfish:~~ Commercial net fishers targeting salmon may inadvertently take groundfish species, e.g. rockfish, ling cod, and Pacific halibut. However, this is typically disruptive of their salmon fishing, and is therefore avoided to the extent possible.

~~ESA listed pelican, sea lion, whales and turtle:~~ Occurrence of California brown pelican, Steller sea lion, humpback and fin whales, and Pacific leatherback turtles is rare in Puget Sound salmon fisheries, and no impact is anticipated.

~~ESA listed bald eagles:~~ Bald eagles do not interact with the Washington salmon gillnet fisheries. However, fall and winter spawning salmon, such as pink and chum, are critical food sources for wintering bald eagles, especially along the major spawning rivers of western Washington. Annual fishing is managed to achieve sustainable population levels for these species, and the spawning escapement of fall chum and pink salmon has increased over the last decade. This management strategy ensures that enough chum and pink salmon return annually to support the wintering eagle population.

~~Non-ESA listed marine mammals:~~ Under 2004-05 Puget Sound Salmon Fisheries, mortality levels of marine mammals would likely be similar to those observed during the 1990s, or considerably less because the length and number of fishery openings is less in 2004-05. Gillnet fisheries would be expected to result in the incidental capture of small numbers of harbor seals, harbor porpoise, and Dall's porpoise. Mortality rates would continue to be low compared to stock population levels, however, and management concerns would therefore not be warranted. Fishing at the projected level would not affect prey availability to killer whales.

~~Seabirds:~~ Monitoring of gillnet fisheries has shown that significant numbers of alcids can be entangled under certain circumstances in Puget Sound. Gillnets have mesh openings large enough (5 to 7 inches) to entangle seabirds, and are made of monofilament nylon line, which is virtually invisible to pursuit diving seabirds. However, not all marine birds are susceptible to the Puget Sound gillnet fishery due to their foraging methods, location or timing. Diurnal foraging pursuit predators such as cormorants, loons, and alcids like rhinoceros auklets, common murre, pigeon guillemots, and marbled murrelets are most vulnerable to gillnet entanglement. Alcids are the most common seabirds caught in coastal gillnet fisheries, with common murre and rhinoceros auklets the most commonly caught species.

The 2004-05 Puget Sound Salmon Fisheries would involve a fishery effort similar to (or substantially less than) the fishing that occurred during the 1990s, except seabird bycatch would likely be greatly reduced through the implementation of the WDFW-required "bird web" net design and dawn hours fishing restrictions. These measures may ensure that the annual gillnet mortality of Washington common murre does not exceed the maximum mortality to sustain a stable population, although continued research is needed to ensure this is the case. Bycatch mortality of rhinoceros auklets and pigeon guillemots was considered to be well below significance levels prior to implementation of the bird bycatch reduction requirements. The addition of these requirements should safely ensure the annual bycatch stays sufficiently low. Finally, the 2004 fishery in areas of high marine bird incidence is considerably shortened compared to effort in previous years.

~~ESA-listed marbled murrelets:~~ Entanglement risk to ESA listed marbled murrelets is limited to a few specific marine areas where they aggregate in summer and fall, and where significant drift gillnet fisheries co-occur, e.g. the southern San Juan Islands, Rosario Strait, and Hood Canal. Studies (Pierce et al. 1996; and Melvin et al. 1999) showed very low mortality to marbled murrelets from Puget Sound gillnet fisheries at that time, and subsequent changes to non-Indian fishing regulations, including timing and gear requirements, probably further reduce entanglement risk. In past consultation, the Fish and Wildlife Service determined that net fisheries in Puget Sound would not jeopardize the listed marbled murrelet population. Consequently, evidence suggests that Puget Sound gillnet fisheries as proposed under 2004-05 Puget Sound Salmon Fisheries will not substantially impact the marbled murrelet population.

~~Benthic invertebrates:~~ Four of the five types of salmon fishing authorized in Puget Sound and the Strait of Juan de Fuca – sport, purse seine, beach seine, reef net, or gillnet – do not purposely operate in the benthic zone where marine invertebrates occur. Beach seining is an exception, where a seine net is dragged along the bottom as it is hauled ashore. However, beach seining generally occurs over sandy or pebbly substrates to avoid snagging on exposed rocks, therefore not occurring where encounters of benthic invertebrates are most likely to occur. Further, captured marine invertebrates (e.g., crabs, sea stars) can be released unharmed. The sport fishing "mooching" technique involves bouncing weight and bait along the seafloor. An occasional sea pen, anemone, or sea star is snagged, but all are usually released unharmed. The only invertebrate observed during observation of 1,090 hookups during the 1997 and 1998 Puget Sound sport fishery was a single sea star. Purse seines sometimes bring up crab and other benthic organisms. Set gillnets that reach to the seafloor commonly capture crabs as a bycatch, although they are generally released alive. A growing concern, however, involves derelict gear such as gillnets that have been lost and continue to fish. See response to question D.4. for more discussion on derelict gear.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Provided above under question B.5(d)

3. How would the proposal be likely to deplete energy or natural resources?

N/a

Proposed measures to protect or conserve energy and natural resources are:

N/a

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Habitat Impacts from fishing Activity

The intent of the major marine salmon gear types (drift and set- gillnet, seine, troll, or sport) and fishing methods is to avoid any contact with the sea floor that would significantly disturb benthic invertebrate communities. Fishermen endeavor to avoid entanglement and abrasion to their fishing gear, and therefore expensive repairs or replacement, by minimizing bottom contact. However, such contact does occur on occasions of high fishing effort (forcing some fishers to fish in less desirable locations) or when fishers are targeting migrating salmon adjacent to topographical protrusions that affect current.

The most common habitat impact that may result from actively-fished gear is scouring of the seabed or river bottom by the weighted line at the bottom of gillnets, purse seines and beach seines. Local effects may be observable, however it is not known whether impacts to the substrate, and its associated productivity, are detectable on a broad scale.

Isolated bycatch issues are associated with gear contacting the bottom, including the impacts to Dungeness crab and groundfish when gillnets and seines contact the bottom in their vicinity. For example, in Bellingham Bay in 2003, a number of Dungeness crabs were observed brought aboard seine vessels targeting hatchery chinook. Survival rates for discarded crab in Puget Sound are not known.

The beach seine is one gear type with intended sea bed contact, because nets are cast out and dragged back in to the beach. Beach seines are used particularly in Hood Canal, Port Gardner/Port Susan and South Puget Sound, however, these fisheries are small in size, limited to the nearshore shallow zone, and occur primarily in cobble beach areas without potential snagging rocks (where few invertebrates live on the seafloor surface). The impact of beach seine fisheries on nearshore/intertidal habitats and marine invertebrates has not been studied.

Fishing affects freshwater habitats in numerous ways. Woody debris removal from rivers and streams by recreational and tribal boat and bank anglers reduces in-stream cover, and reduces pool size and abundance for juvenile and adult salmonids. Anglers frequently lose lures in river salmon and steelhead fisheries when their lines become stuck or tangled. Because many artificial baits used in these fisheries are buoyant, they float above bottom where they may continue to attract (and hook) fish. Also, loss of fishing weights contributes lead to the river substrate.

Bank anglers can reduce riparian vegetation to improve bank access, which may reduce shade and cover, and cause water temperatures to rise. Studies have found a relationship between high-density shore angler use, a decrease in riparian plant diversity, and bank erosion. By wading shallow riffles, bank anglers also can trample spawning redds, which has the potential to cause high mortality of salmonids. Most information on redd disturbance is anecdotal; however, one study observed 46 to 49 percent mortality of alevins with only one or two passes by wading anglers per day. The extent or cumulative effect of this type of damage is not known.

Fish managers have been concerned with late-summer boating "wake wash", "inner-tubing" and wading in shallow water where such disturbance can increase bank erosion and erode redds from shallow gravel bars. Developing salmon eggs and alevins in the gravel can suffer high mortalities. In particular, situations have occurred in the Nooksack and Skagit Rivers that cause concern about injury to spring chinook redds, and emergency closures of specific sites has occurred in past years in order to reduce this impact.

Fish and Wildlife enforcement officers and citizen groups provide education to fishers regarding ways to lessen their impacts to the natural environment.

No data are currently available to help us quantify these effects. These are impacts that are relatively consistent throughout past fishing history and have probably not had long-term impact to the habitat when considered in context with impacts of

residential, commercial, municipal and transportation development. In addition, fishing seasons and effort are generally reduced from previous years and a commensurate reduction in impacts is anticipated.

Derelict Gear

Fishing gear in all types of salmon fisheries is lost as a result of entanglement with bottom structures, logs and debris, or because of storms, flood events and other occurrences. While lost fishing gear (i.e. drift gill nets in particular) is most commonly associated with marine fisheries, river set-nets are also lost. Salmon, other fishes, seabirds, mammals and other animals may become entangled in derelict nets or entangle in or ingest monofilament fishing line. Lost nets lying on the seabed continue to entangle fish or other species long after they are lost or abandoned.

Submerged gillnets typically drift until they become entangled on submerged features or structures, where they may impact bottom-dwelling organisms. Palsson reported recent investigations that suggest the direct and indirect effects of lost fishing gear likely outweigh the negative effects during actual fisheries from contact of the gear with bottom habitat or the incidental entanglement of fishes, mammals or birds.

A spring, 2004 project to recover derelict gear from waters of northern Puget Sound removed forty-five gillnets, several crab pots and one purse seine net from waters adjacent to Port Angeles, Dungeness Bay, Sequim Bay and Lopez Island. The derelict gillnets encountered were generally still capable of entanglement and mortality of marine mammals, seabirds, fish and invertebrates and likely presented a hazard to divers and vessel navigation. Evidence of significant impacts to seabirds, salmon, marine mammals, bottomfish and benthic invertebrates was found. This evidence confirms the belief that removal of this derelict gear, and prevention of further loss, is extremely important for ecosystem health, and complements other marine-nearshore habitat restoration activities.

Few, if any, nets are anticipated to be lost as a result of 2004-05 Puget Sound salmon fisheries, due to the mitigation provisions discussed in section B.5(d), the increased awareness of the impact among fishers and the general public, and the overall reduced number of fishing days and licensed gillnet operators in Puget Sound compared with past years.

Marine-Derived Nutrients

The input of nutrients into freshwater systems associated with the return of adult salmon is, at the simplest level, directly related to the biomass of spawners of all species. However, the processes by which juvenile chinook and other species benefit directly and indirectly from this source of nutrients comprise a highly complex transport web. At the current state of scientific inquiry into this issue, it is not possible to quantify the differences in growth and survival of juvenile chinook in a system that would result from levels of escapement of all salmon species, because survival is determined by a very complex array of physical and biological factors.

Nutrient loading is substantially affected by spawner density, which varies greatly between species and in different reaches of the rivers, and by stream flow, water temperature, and stream channel structure, which affect carcass retention time. Because of the variability in these factors, nutrient loading for Puget Sound systems is not estimated.

Since the proportion of chinook spawner biomass in most Puget Sound streams is low compared to other species, the chinook catches expected in the 2004-05 Puget Sound salmon fishery would have low or no effect on total nutrient loading, which would be primarily dependent on management objectives and production for the other salmon species. Spawning escapements for all salmon species projected to occur under 2004-05 fisheries would be very similar to, or slightly higher than, those that have actually occurred in recent years in Puget Sound. The potential for accrual of ecosystem benefits, however, is more dependent upon environmental conditions (e.g., the occurrence of scouring floods that flush carcasses from the freshwater system) than the number of spawned-out carcasses in any given year.

Proposed measures to protect such resources or to avoid or reduce impacts are:

- ◆ Net fishers avoid contact with the bottom.
- ◆ Enforcement of freshwater recreational fisheries discourages environmentally adverse activities.
- ◆ Gillnet fishers are required to mark their nets with permanent identification; Allows net owner to be identified if net is lost
- ◆ WDFW program for reporting derelict gear; programs for removal of derelict gear; Identify derelict gear for removal to eliminate associated impacts to habitat and biota
- ◆ Sufficient spawners are passed to spawning grounds to "fully seed" the available habitat; provides benefits not only for juvenile salmon, but for the ecosystem as a whole.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

See above

Proposed measures to avoid or reduce shoreline and land use impacts are:

See above

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

This proposal would not increase demands on transportation or public services/utilities.

Proposed measures to reduce or respond to such demand(s) are:

N/a

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

This action must comply with the Endangered Species Act, and will not go forward without Incidental Take Statement under Section 7 of ESA from NOAA.