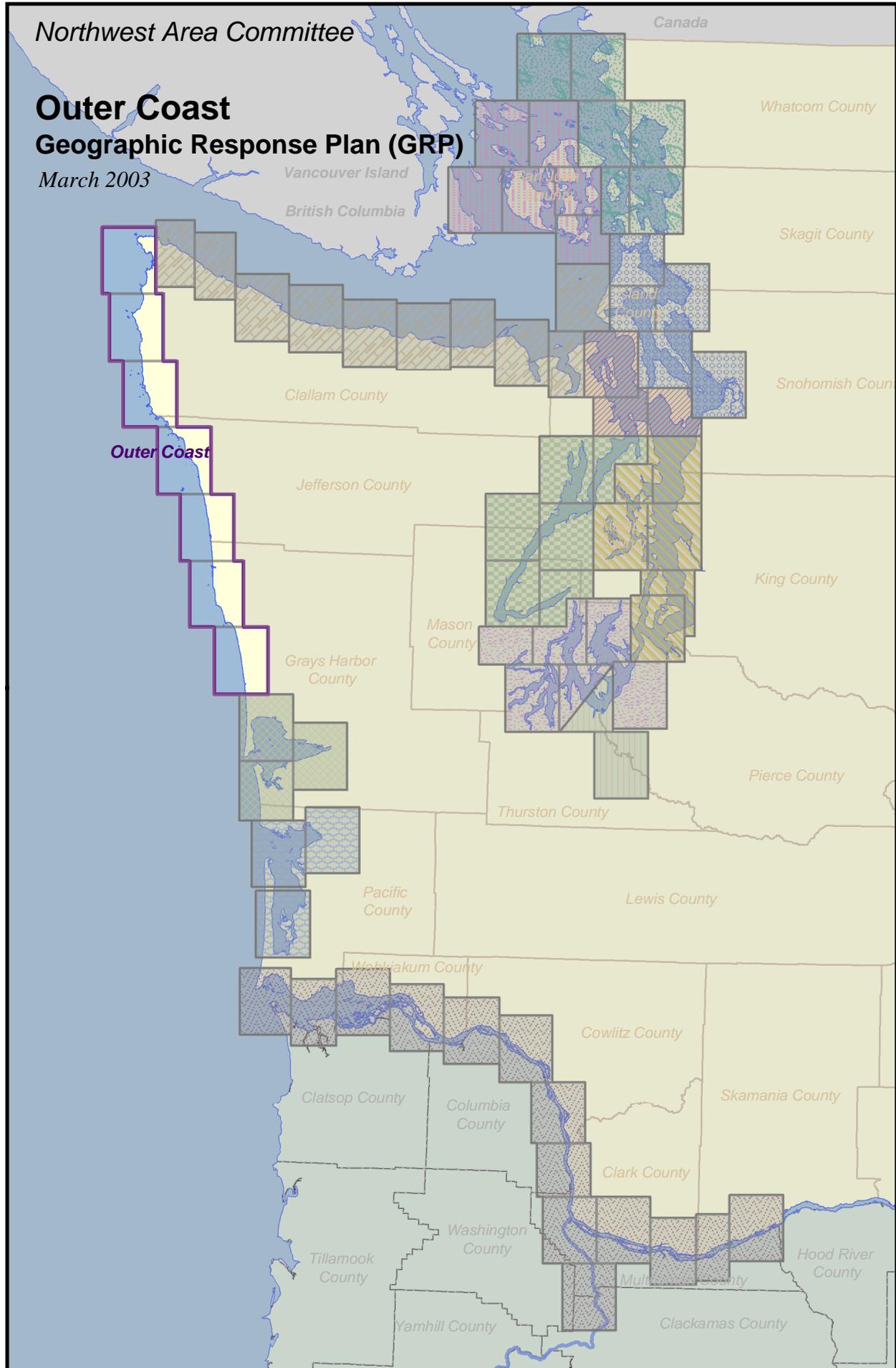


Northwest Area Committee

**Outer Coast
Geographic Response Plan (GRP)**

March 2003



SPILL RESPONSE CONTACT SHEET

Required Notifications For Hazardous Substance or Oil Spills

USCG National Response Center.....	(800) 424-8802
In Oregon:	
Department of Emergency Management	(800) 452-0311
In Washington:	
Emergency Management Division.....	(800) 258-5990
Department of Ecology Northwest Regional Office.....	(425) 649-7000
Department of Ecology Southwest Regional Office.....	(360) 407-6300

U.S. Coast Guard

National Response Center	(800) 424-8802
Marine Safety Office Puget Sound:	
Watchstander	(206) 217-6232
Safety Office	(206) 217-6232
Marine Safety Office Portland:	
Watchstander	(503) 240-9301
Safety Office	(503) 240-9379
Pacific Strike Team	(415) 883-3311
District 13:	
MEP/drat	(206) 220-7210
Command Center	(206) 220-7001
Public Affairs	(206) 220-7237
Vessel Traffic Service (VTS)	(206) 217-6050

Environmental Protection Agency (EPA)

Region 10 Spill Response	(206) 553-1263
Washington Ops Office	(360) 753-9083
Oregon Ops Office	(503) 326-3250
Idaho Ops Office	(208) 334-1450
RCRA/ CERCLA Hotline	(800) 424-9346
Public Affairs	(206) 553-1203

National Oceanic Atmosphere Administration

Scientific Support Coordination	(206) 526-6829
Weather	(206) 526-6087

Canadian

Marine Emergency Ops/Vessel Traffic	(604) 666-6011
Environmental Protection	(604) 666-6100
B.C. Environment	(604) 356-7721

Department of Interior

Environmental Affairs	(503) 231-6157
	(503) 621-3682

U.S. Navy

Naval Shipyard	(360) 476-3466
Naval Base Seattle	(360) 315-5440
Supervisor of Salvage	(202) 695-0231

Army Corps of Engineers

Hazards to Navigation	(206) 764-3400
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Hoh Tribe

Tribal Office	(360) 374-6582
After Hours Emergencies	(360) 374-4020

Makah Tribe

Tribal Office	(360) 645-2201
After Hours Emergencies	(360) 645-2701

Quileute Tribe

Tribal Office	(360) 374-6163
After Hours Emergencies	(360) 374-9020

Quinault Nation

Tribal Office	(360) 276-8211
After Hours Emergencies	(360) 276-4422

Federal O.S.R.O./

State Approved Response Contractors

All Out Indust. & Env. Services	(360) 414-8655
Certified Cleaning Services, Inc.	(253) 536-5500
Clean Sound Cooperative, Inc.	(425) 783-0908
Cowlitz Clean Sweep, Inc.	(360) 423-6316
FOSS Environmental	(800) 337-7455
Global Diving and Salvage	(206) 623-0621
Guardian Industrial Services, Inc.	(253) 536-0455
Island Oil Spill Association	(360) 378-5322
Matrix Service, Inc.	(360) 676-4905
MSRC	(425) 252-1300
National Response Corporation	(206) 340-2772

Washington State

Department of Ecology Headquarters	(360) 407-6900
Southwest Region	(360) 407-6300
Northwest Region	(425) 649-7000
Central Region	(509) 575-2490
Eastern Region	(509) 456-2926

Department of Fish and Wildlife	(360) 534-8233
Emergency Management Division	(360) 438-8639
	(800) 258-5990

State Patrol

Bellevue	(425) 455-7700
Tacoma	(253) 536-6210
Bremerton	(360) 478-4646

Oregon State

Department of Environmental Quality	(503) 229-5733
Emergency Management	(503) 378-6377
	(800) 452-0311

HOW TO USE THIS GEOGRAPHIC RESPONSE PLAN

Purpose of Geographic Response Plan (GRP)

This plan prioritizes resources to be protected and allows for immediate and proper action. By using this plan, the first responders to a spill can avoid the initial confusion that generally accompanies any spill.

Geographic Response Plans are used during the emergent phase of a spill which lasts from the time a spill occurs until the Unified Command is operating and/or the spill has been contained and cleaned up. Generally this lasts no more than 24 hours. The GRPs constitute the federal on-scene coordinators' and state on-scene coordinators' (Incident Commanders) "orders" during the emergent phase of the spill. During the project phase, the GRP will continue to be used, and the planned operation for the day will be found in the Incident Action Plan's Assignment List (ICS Form 204). The Assignment List is prepared in the Planning Section with input from natural resource trustees, the Incident Objectives (ICS Form 202), Operations Planning Worksheet (ICS Form 215), and Operations Section Chief.

Strategy Selection

Chapter 4 contains complete strategy descriptions in matrix form and strategy maps. The strategies depicted in Chapter 4 should be implemented as soon as possible, deploying strategies closest to the spill first. The priorities of deployment may be modified by the Incident Commander(s) after reviewing on scene information, including: tides, currents, weather conditions, oil type, initial trajectories, etc.

It is assumed that control and containment at the source is the number one priority of any response. If, in the responder's best judgment, this type of response is infeasible then the booming strategy priorities laid out in Chapter 4, Section 2 take precedence over containment and control.

It is important to note that strategies rely on the spill trajectory. A booming strategy considered a high priority would not necessarily be implemented if the spill trajectory and booming location did not warrant action in that area. However, the strategies closest to the spill should be deployed first until spill trajectory information becomes available, and modifications to this plan must be approved by the Incident Commander(s).

The strategies discussed in this GRP have been designed for use with persistent oils and may not be suitable for other petroleum or hazardous substance products. For hazardous substance spills, refer to the Northwest Area Contingency Plan, Chapter 7000.

Standardized Response Language

In order to avoid confusion in response terminology, this GRP uses standard National Interagency Incident Management System, Incident Command System (NIIMS, ICS) terminology and strategy names, which are defined in Appendix A, Table A-1 (e.g. diversion, containment, exclusion).

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Outer Coast, Washington

GEOGRAPHIC RESPONSE PLAN

1. INTRODUCTION: SCOPE OF THIS PROJECT

Geographic Response Plans are intended to help the first responders to a spill avoid the initial confusion that generally accompanies any spill. This document serves as the federal and state on-scene-coordinators “orders” during a spill in the area covered by this GRP (see Chapter 3 for area covered). As such, it has been approved by the U.S. Coast Guard Marine Safety Office and the Washington State Department of Ecology Spills Program. Changes to this document are expected as more testing is conducted through drills, site visits, and actual use in spill situations. To submit comments, corrections, or suggestions please refer to Appendix C.

GRPs have been developed for the marine and inland waters of Washington, Oregon, and Idaho. They are prepared through the efforts and cooperation of the Washington Department of Ecology, Washington Department of Fish and Wildlife, Oregon Department of Environmental Quality, Idaho State Emergency Response Commission, the U.S. Coast Guard, the Environmental Protection Agency, tribes, other state and federal agencies, response organizations, and local emergency responders.

GRPs were developed through workshops involving federal, state, and local oil spill emergency response experts, response contractors, and representatives from tribes, industry, ports, environmental organizations, and pilots. Workshop participants identified resources which require protection, developed operational strategies, and pinpointed logistical support. A similar process has been used for major updates.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapters 4 through 6. The maps in Chapters 5 and 6 were generated using Canvas. Maps for Chapter 4 were generated using ArcView GIS. The matrices were created using MS Excel, and the balance of each GRP was produced using MS Word.

The first goal of a GRP was to identify, with the assistance of the Washington State Natural Resource Damage Assessment Team, resources needing protection; response resources (boom, boat ramps, vessels, etc.) needed, site access and staging, tribal and local response community contacts, and local conditions (e.g. physical features, hydrology, currents and tides, winds and climate) that may affect response strategies. Note that GRPs only address protection of sensitive **public** resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marinas, private water intakes, and non-release aquaculture facilities).

Secondly, response strategies were developed based on the sensitive resources noted, hydrology, and climatic considerations. Individual response strategies identify the amount of boom necessary for implementation.

Draft strategy maps and matrices were sent out for review and consideration of strategy viability. Field verification was conducted for some strategies, and changes proposed by the participants were included in a semi-final draft, which was offered for final review to all interested parties and the participants of the field verification.

Finally, the general text of the GRP was compiled along with the site description, reference maps, and logistical support.

Items included in Logistical Support:

- Location of operations center for the central response organization;
- Local equipment and trained personnel;
- Local facilities and services and appropriate contacts for each;
- Site access & contacts;
- Staging areas;
- Helicopter and air support;
- Local experts;
- Volunteer organizations;
- Potential wildlife rehabilitation centers;
- Marinas, docks, piers, and boat ramps;
- Potential interim storage locations, permitting process;
- Damaged vessel safehavens;
- Vessel repairs & cleaning;
- Response times for bringing equipment in from other areas.

2. SITE DESCRIPTION

The outer coast of Washington state encompasses approximately 75 miles of shoreline between Cape Flattery and Grays Harbor. It is an ecologically rich and diverse area that includes some of the most scenic coastline in the world. Much of the coastal zone consists of wildlife sanctuaries.

Unlike most of Puget Sound, this region faces direct exposure to the constant waves and storms of the Pacific Ocean. Numerous forms of marine life thrive in this high energy environment. Kelp forests (*Nereocystis* and *Macrocystis*) provide important offshore habitat. Seabirds such as puffins, murres, marbled murrelets, gulls, and cormorants, and marine mammals such as harbor seals, sea otters and sea lions are at home here. Bald eagles are also common. Several of the rivers that empty into the Pacific Ocean are spawning areas for Chinook, Coho, and other anadromous fish. The coastal zone supports commercial fishing and some sport fishing areas, as well as many shellfish harvesting areas.

The Olympic Coast National Marine Sanctuary and Olympic National Park comprise much of the area, and indicate the importance of conservation for natural beauty and the diverse animal populations along the Outer Coast. Also included are 870 islands, rocks, and reefs which comprise the Flattery Rocks, Quillayute Needles, and Copalis National Wildlife Refuges managed by the U.S. Fish & Wildlife Service. In addition, the Makah Tribe, Quileute Tribe, Hoh Tribe, and Quinault Indian Nation each own land along the outer coast. Refer to Chapter 6 for detailed resource information.

2.1. Physical Features

Most of the outer coast is comprised of mixed sand and gravel beaches interrupted by rocky headlands. Small rocky islands lie offshore. Marsh areas and exposed tidal flats exist at the mouths of small creeks and rivers such as the Queets and Quillayute. In general, the northern part of the outer coast consists of rocky shores, inlets and coarse beaches; further south, it consists of sandy beaches and tidal flats. The outer coast includes the following shoreline habitats:¹

- Exposed rocky shores and seawalls
- Wave-cut platforms
- Mixed sand and gravel beaches
- Medium to coarse grained sand beaches
- Fine grained sand beaches
- Gravel beaches with exposed rip rap
- Sheltered rocky shores
- Exposed tidal flat
- Sheltered tidal flats
- Marshes

2.2 Hydrology

In the winter, inshore coastal currents typically flow northward. This winter current causes the Columbia River plume typically to flow northward, parallel along the Washington coast to the Strait of Juan de Fuca (however, some outflow may extend south of the Columbia River entrance). This movement has been described by Barnes, Duxbury and Morse (1972) and Hickey (1989). During the summer, predominant currents flow south. Therefore, at this time of year the Columbia River plume moves

¹ National Oceanic and Atmospheric Administration, Environmental Sensitivity Index, Strait of Juan de Fuca & Northern Puget Sound (Seattle: 1984).

southwest of the river entrance and further offshore. Natural collection areas of oil and debris often occur in fronts forming along the seaward portion of the plume.²

2.3 Currents and Tides

The oceanic current system off the Washington coast is comprised of the California current, Davidson current, and California undercurrent. The seasonal variation in the pattern of coastal circulation is the result of changes in direction of the dominant winds associated with large-scale atmospheric pressure cells over the Pacific Ocean.³ The relatively wide and straight continental shelf off the coast tends to separate the nearshore surface current from the larger-scale California current. Winter winds typically cause the southward flowing California current to remain offshore while nearshore, the Davidson current, flows toward the north. In the summer, northerly winds extend the southward flowing California current over both nearshore and offshore areas. Since spring and fall are transitional periods, changes in the local wind field results in unpredictable current reversals. Reversals can also occur within one to two days of change in the seasonal pattern.⁴ Local nearshore currents within approximately 10 miles of shore are influenced by winds, ocean currents, tides, river runoff and coastal configuration, resulting in a high degree of local variation. In addition, there are many areas of coast upwelling during the summer and downwelling during the winter.

Five to twenty miles offshore, away from the immediate influences of the coast, the tidal current is quite different from the current found in inland tidal waters. Instead of setting in one direction for a period of 6 hours and in the opposite direction during the following period of 6 hours, the tidal current offshore changes its direction continually, so that in a period of 12 1/2 hours it will have set in all directions of the compass. This type of current is called a rotary current. Generally, they are ellipsoid in shape and have a northeast to southwest axis, flooding to the northeast, and ebbing to the southwest.

Although the only nearshore tidal current information available is for the Quillayute River entrance, which has an average flood at 0.3 knots 115° and an average ebb at 1.3 knots 345°, strong tidal influences should be expected near inlets.⁵

The mean tidal range (MHW-MLW) for the Washington coast is 6.6 to 6.3 feet and the diurnal range (MHHW-MLLW) is 8.7 to 8.14 feet.⁶

2.4 Winds

Storm systems are most intense during the winter season (November - February). On the average, there is a permanent low pressure system hovering over a broad region off the eastern end of the Aleutian Island chain of Alaska that generates a series of storms in the North Pacific Ocean during a typical season. The prevailing winds of this period tend to be from the southwest and west at 10 to 20.⁷

² Simecek-Beatty, D., National Oceanic and Atmospheric Administration, General Climatology and Physical Oceanography off Tillamook Bay/Northern Oregon Coast (Seattle 1994).

³ National Oceanic and Atmospheric Administration, Olympic Coast National marine Sanctuary, Final EIS (Washington D.C. 1993) Vol 1 pp. II-26.

⁴ Simecek-Beatty, D., National Oceanic and Atmospheric Administration, General Climatology and Physical Oceanography off Tillamook Bay/Northern Oregon Coast (Seattle 1994).

⁵ National Oceanic and Atmospheric Administration, Tidal Current Tables Pacific Coast of North and South America (1995)

⁶ National Oceanic and Atmospheric Administration, Tide Tables West Coast of North and South America (1995)

⁷ Lilly, Kenneth E. Jr. Marine Weather of Western Washington Starpath (1983)

In the spring (March - May), the Pacific Northwest begins to feel the effects of the high pressure system that usually exists year round off the southern California coast. This system gradually moves northward so that weather fronts become weaker as they try to penetrate through the high. An occasional powerful weather front passes through western Washington. Winds associated with this period tend to be west to northwest at 10 to 20 mph. One notable exception is near the entrance to the Strait of Juan de Fuca, where the winds tend to be southerly curving from the west at Cape Flattery.

In the summer season (June - August), the high pressure cell becomes well developed and stops the majority of storms from reaching the coast with full force. Winds of gale force seldom occur during these months. Sea breezes from the west are common in the Strait of Juan de Fuca. If the high moves into eastern Washington, hot easterly winds bring very warm temperatures. The prevailing northwest winds draw into the strait, increasing toward evening and at times blowing 25 knots before midnight. However, this occurs only when the winds are strong outside.

In the fall (September -November), the high pressure cell that dominated the area weakens and begins to move southward as more storms impact it from the west. If the high stays over the coastal area or slightly inland, warm summer weather can persist until late October when the dominant high is replaced by a series of dominant lows, and the rain returns. The prevailing winds for this period tend to be from the southwest. The winds in this area are a result of diverse topography including the Olympic and Cascade Mountains. The westerly winds from the Pacific appear to flow to the north and south around the Olympics, causing what is commonly known as the “Puget Sound Convergence” on the eastern side.

2.5 Climate

Maritime air from the Pacific has an influence on the climate throughout the year. In late fall and winter, air reaching the coast is moist and about 45° F. The wet season begins in late September to October. From October through January, rain may be expected on about 26 days per month. The dry season begins in May with the driest period between mid-July and mid-August, with daytime temperatures in the upper sixties to low seventies. In summer and early fall, fog or low clouds form over the ocean and frequently move inland at night, but generally disappear by midday. In winter, under the influence of a surface high-pressure system, centered off the coast, fog, low clouds, and drizzle occur daily as long as this type of pressure pattern continues.⁸

⁸ National Oceanic and Atmospheric Administration, United States Coast Pilot #7 Pacific Coast: California, Oregon, Washington, and Hawaii (1994)

Outer Coast Geographic Response Plan

Chapter 3 – (Reserved)

OUTER COAST
GEOGRAPHIC RESPONSE PLAN
(OC GRP)
CHAPTER 4

June 05, 2008

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4.0 GENERAL PROTECTION/COLLECTION STRATEGIES

4.1 Chapter Overview

Special Warnings and Instructions for the Outer Coast:

These GRPs are unique and subject to incredibly dynamic, remote and demanding conditions. Read the following special warnings and instructions for the Outer Coast before making any on-site evaluations.

Due to the dynamic conditions, GRP maps and other details will lose accuracy over time. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly.

Notice: Obtain appropriate permissions before responding on tribal lands and for any flights over the Olympic Coast National Marine Sanctuary within 1 mile of shore or islands. For the appropriate contact information, consult the contact listed under each strategy.

Safety

The Outer Coast is extremely dynamic and remote. Be aware that fair weather conditions often deteriorate suddenly without warning.

GRP response personnel must take precautions for the following threats:

- **Fog and wind.** Near-daily marine temperature inversions during the warmer months often blanket the immediate coast in dense fog. Thick fog or high winds could strand responders on remote beaches if retrieval by helicopters or other methods is unsafe for extended periods of time.

- **Poor field communications.** Cell phone coverage in the area is spotty, so responders should have radios and other remote communications options. Radio reception may also be patchy, best to check with park service or other local expertise.
- **Extreme tidal changes.** Before stepping onto any beach, know the tidal state and predicted tidal changes. Have an exit strategy planned before rounding any headlands or passing in front of steep dunes or bluffs where retreat may be difficult. Site safety plans need to take into account access and egress.
- **Sneaker waves.** Always keep an eye on the ocean. Even during “calm” surf conditions, large waves (or logs they carry) roll in sporadically and can catch people off guard and injure them.
- **Flying sand.** Gale-force winds along the coast can drive sheets of sand into the air. Wear appropriate eye protection to prevent injury due to helicopter landings and other strong winds.
- **Poor footing.** Be wary of wet logs, unstable ground and slick footing on trails to avoid slips, trips and falls.

Equipment

- **Contractors are responsible for selecting and mobilizing the appropriate equipment for the existing real-time conditions.** Many Outer Coast strategies call for deployment systems (boom, anchoring, shallow draft boats, etc.) that are suitable for rivers or other “fast” waters.

On-site Considerations

Before deploying a GRP strategy, responders should ask:

- Are conditions safe?
- Has initial control and containment been sufficiently achieved?
- **Underflow dams and culvert blocks** require Emergency Hydraulic Project Approval (HPA) prior to implementation. These response tactics will reduce, interrupt, or divert the water flow of streams that can be damaging to sensitive fish life and habitat. Responders must receive Emergency HPA from the Washington State Department of Fish and Wildlife **before** using culvert blocks and underflow dams. The Hydraulic Code (RCW 75-20.11-160) provides for immediate verbal approval in emergency situations. For emergency HPA **contact 360-534-8233** (24hour pager).

During the initial GRP-response phase, responders should be aware that:

- Challenging field conditions may require them to modify strategies, and later notify the command center.
- Certain strategies may call for access points or staging areas that are not easily reached at all times of the year or in all conditions.
- For cases where the area is dynamic and remote, the label “CALL” has been included in the priority table as well as the matrix. Response personnel should call a pre-approved local contact person to obtain real-time information about the prevailing environmental conditions, while equipment is dispatched to the strategy site.
- For cases where the access to the area is extremely difficult, the label “STAGE” has been included in the priority table as well as the matrix. Response personnel should assemble response equipment at the nearest pre-determined staging area and wait for further instructions. Once the situation is assessed priorities and direction will be relayed to response personnel.
 - All strategies were designed for use with persistent, heavy oils and may not be suitable for other petroleum products or hazardous materials.
 - Boom deployment may require around-the-clock tending and/or precise anchoring techniques.

After considerably more is known about the spill and surrounding area:

- Other techniques for recovery or containment (skimming, in situ burning, or dispersants) may be applied.
- GRP strategies are likely to be refined as a result of lessons learned.

Outer Coast booming strategy sites are numbered from North to South.

Water Speed Affects Booming Angle -

How to get a rough idea of the water speed:

Anchor a line with two floating buoy markers attached at a spacing 100 feet apart. (Measuring 100 feet along a straight portion of river bank may be more timely but also less accurate.) Floating debris is then thrown into the water approximately 20 feet upstream of the first buoy marker. Determine the time it takes the debris to transit the distance between the two marker buoys in seconds. Use this table –

TABLE 4-1 CURRENT CHIP LOG TABLE AND MAXIMUM BOOM DEFLECTION ANGLE

Time to Drift 100 Feet (seconds)	Velocity (ft/sec)	Velocity (m/sec)	Velocity (knots)	Max Boom Deflection Angle (Degrees)	Boom required for 100-foot Profile to Current (feet)	Anchors if Placed Every 50 feet (number)
6	16.7	5.1	10.00	4.0	1,429	30
8	12.5	3.8	7.50	5.4	1,071	22
10	10.0	3.1	6.00	6.7	857	18
12	8.3	2.5	5.00	8.0	714	15
14	7.1	2.2	4.29	9.4	612	13
17	5.9	1.8	3.53	11.4	504	11
20	5.0	1.5	3.00	13.5	429	10
24	4.2	1.3	2.50	16.3	357	8
30	3.3	1.0	2.00	20.5	286	7
40	2.5	0.8	1.50	27.8	214	5
60	1.7	0.5	1.00	44.4	143	4
>86	≤1.2	≤0.35	≤0.70	90.0	100	3

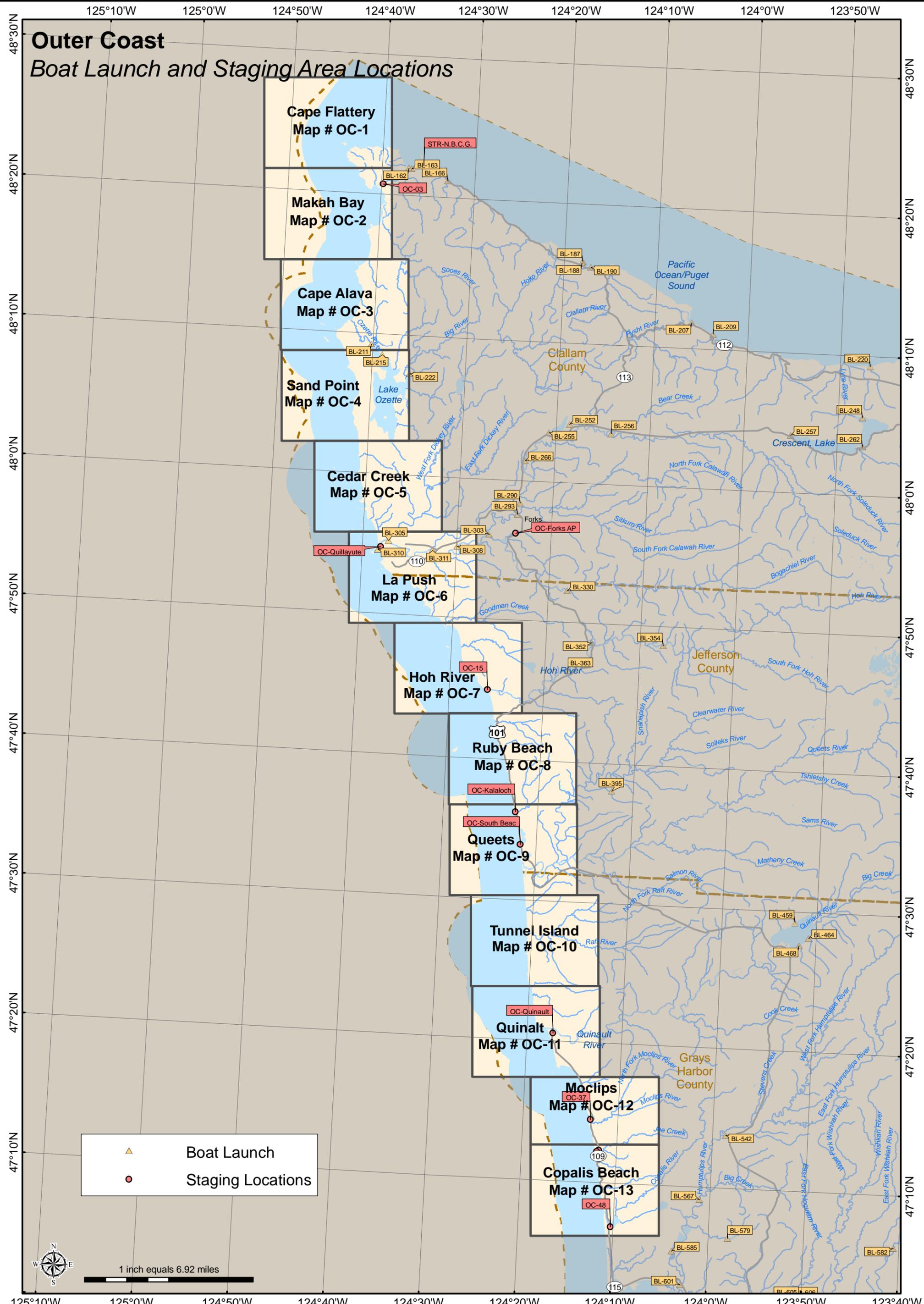
Source: Oil Spill Response in Fast Currents, A Field Guide. U.S. Coast Guard Research and Development Center, October, 2001

4.2 Strategy and Access Locations Overview

Marine booming strategy sites are numbered from North to South

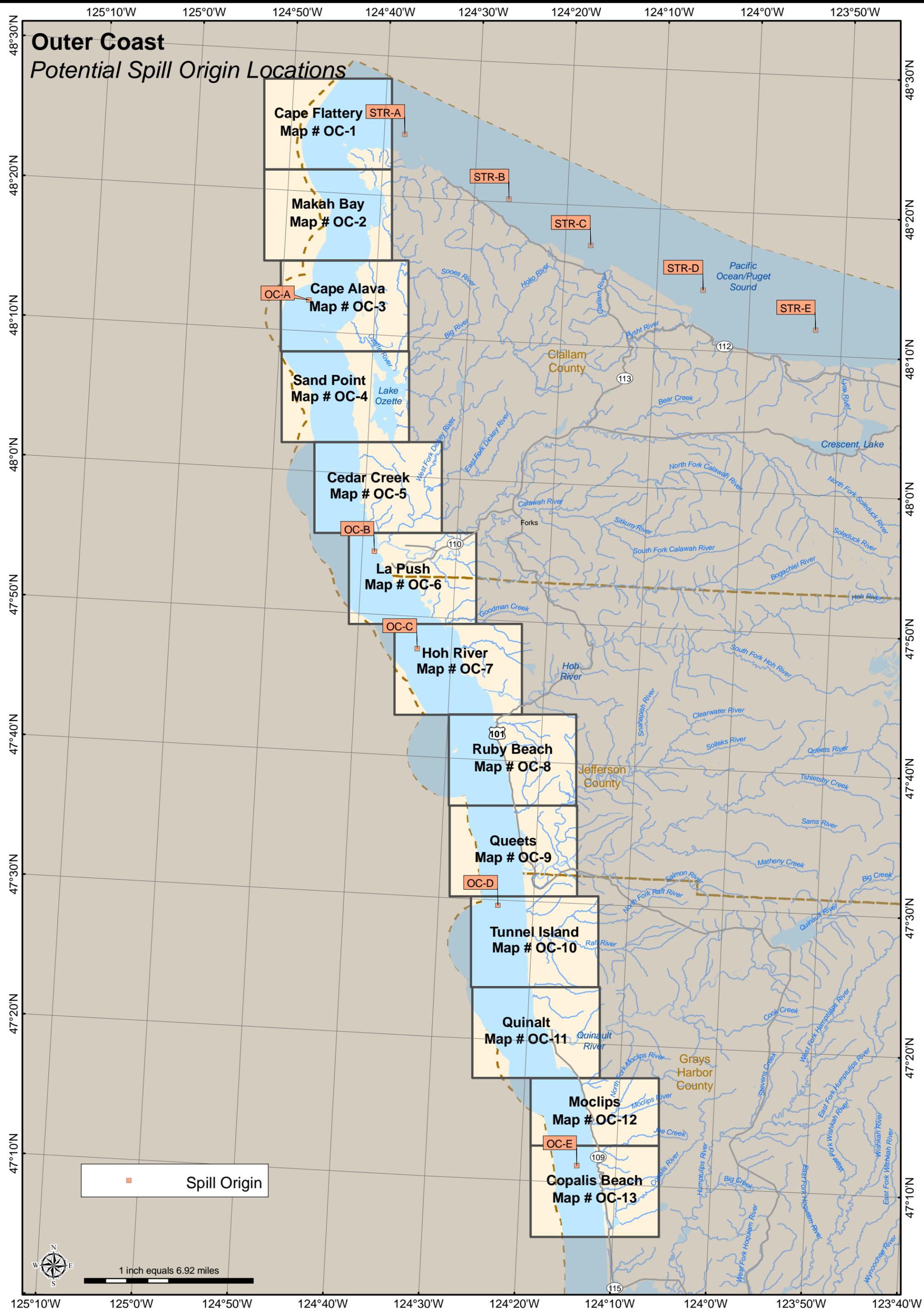


Outer Coast Boat Launch and Staging Area Locations



4.3 Strategy Priorities

The sequence of deployments is pre-determined in a booming priority table. The appropriate table is found by finding which 'Potential Spill Origin' point (orange boxes on the maps) lies closest to the actual (or reported) spill site.



Outer Coast

Potential Spill Origin Locations

■ Spill Origin

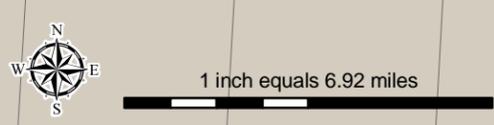


Table 4-1: OC-A, Sand Point Spill Origin Point, Potential Spill Origin Booming Priority

Booming Priority	Strategy Number	Sector Map Page Number	Sector Matrix Page Number	Strategy Details Page Number
SOURCE CONTROL AND CONTAINMENT ARE ALWAYS PRIORITY ONE				
1	OC-02	4- 16	4- 30	4- 72
2	OC-03	4- 16	4- 31	4- 74
3	OC-01	4- 16	4- 29	4- 70
4	OC-04-CALL	4- 16	4- 32	4- 76
5	OC-05-CALL	4- 16	4- 32	4- 78
6	OC-06-CALL	4- 16	4- 33	4- 80
7	OC-07-STAGE	4- 17	4- 34	4- 82
8	OC-08-STAGE	4- 19	4- 35	4- 84

Table 4-2: OC-B, La Push Spill Origin, Potential Spill Origin Booming Priority

Booming Priority	Strategy Number	Sector Map Page Number	Sector Matrix Page Number	Strategy Details Page Number
SOURCE CONTROL AND CONTAINMENT ARE ALWAYS PRIORITY ONE				
1	OC-10-CALL	4- 20	4- 37	4- 88
2	OC-11-CALL	4- 20	4- 38	4- 90
3	OC-09-CALL	4- 20	4- 36	4- 86
4	OC-08-STAGE	4- 19	4- 35	4- 84
5	OC-12-STAGE	4- 21	4- 39	4- 92
6	OC-13-STAGE	4- 21	4- 40	4- 94

Table 4-3: OC-C, Hoh Spill Origin Point, Potential Spill Origin Booming Priority

Booming Priority	Strategy Number	Sector Map Page Number	Sector Matrix Page Number	Strategy Details Page Number
SOURCE CONTROL AND CONTAINMENT ARE ALWAYS PRIORITY ONE				
1	OC-20	4- 23	4- 46	4- 108
2	OC-19	4- 23	4- 45	4- 106
3	OC-18	4- 22	4- 44	4- 104
4	OC-15	4- 21	4- 42	4- 98
5	OC-14	4- 21	4- 41	4- 96
6	OC-17	4- 21	4- 43	4- 102
7	OC-16	4- 21	4- 43	4- 100
8	OC-12-STAGE	4- 21	4- 39	4- 92
9	OC-13-STAGE	4- 21	4- 40	4- 94

Table 4-4: OC-D, Tunnel Island Spill Origin, Potential Spill Origin Booming Priority

Booming Priority	Strategy Number	Sector Map Page Number	Sector Matrix Page Number	Strategy Details Page Number
SOURCE CONTROL AND CONTAINMENT ARE ALWAYS PRIORITY ONE				
1	OC-21-CALL	4- 23	4- 47	4- 110
2	OC-22-CALL	4- 23	4- 48	4- 112
3	OC-24-CALL	4- 23	4- 49	4- 116
4	OC-23-CALL	4- 23	4- 49	4- 114
5	OC-20	4- 23	4- 46	4- 108
6	OC-19	4- 23	4- 45	4- 106
8	OC-27-STAGE	4- 24	4- 51	4- 122
9	OC-28-STAGE	4- 24	4- 51	4- 124
10	OC-29-STAGE	4- 24	4- 52	4- 126
11	OC-25-STAGE	4- 24	4- 50	4- 118
12	OC-26-STAGE	4- 24	4- 50	4- 120
13	OC-30-STAGE	4- 24	4- 52	4- 128
14	OC-31-STAGE	4- 25	4- 53	4- 130

Table 4-5: OC-E, Copalis Beach, Potential Spill Origin Booming Priority

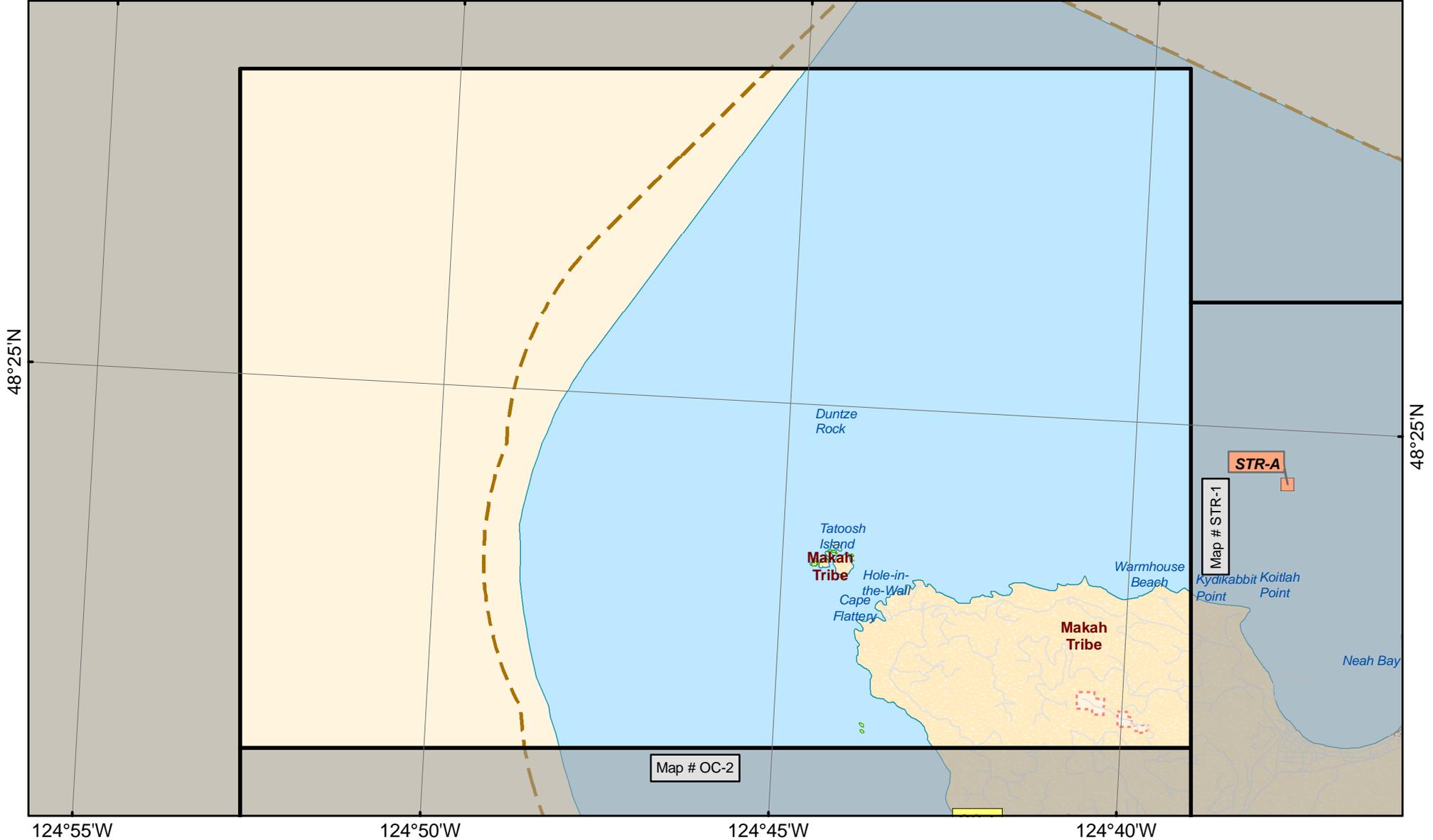
Booming Priority	Strategy Number	Sector Map Page Number	Sector Matrix Page Number	Strategy Details Page Number
SOURCE CONTROL AND CONTAINMENT ARE ALWAYS PRIORITY ONE				
1	OC-41	4- 27	4- 59	4- 150
2	OC-40	4- 27	4- 58	4- 148
3	OC-43	4- 27	4- 61	4- 154
4	OC-42	4- 27	4- 60	4- 152
5	OC-46	4- 27	4- 64	4- 160
6	OC-44	4- 27	4- 62	4- 156
7	OC-47	4- 27	4- 65	4- 162
8	OC-45	4- 27	4- 63	4- 158
9	OC-38	4- 27	4- 56	4- 144
10	OC-48	4- 27	4- 66	4- 164
11	OC-39	4- 27	4- 57	4- 146
12	OC-37	4- 26	4- 56	4- 142
13	OC-36	4- 26	4- 55	4- 140
14	OC-32	4- 25	4- 53	4- 132
15	OC-33	4- 25	4- 54	4- 134
16	OC-35	4- 25	4- 55	4- 138
17	OC-34	4- 25	4- 54	4- 136
18	OC-30-STAGE	4- 24	4- 52	4- 128
19	OC-31-STAGE	4- 25	4- 53	4- 130

4.4 Proposed Booming and Collection Strategies - Maps

Map # OC-1 Cape Flattery Proposed Booming Strategies

 Street	 Proposed Boom Placement	 Sector	 Military Lands	 Tribal Lands
 Highway	 Railroad	 Potential Spill Origin	 Public Lands	 County Boundary
 Ferry Route				

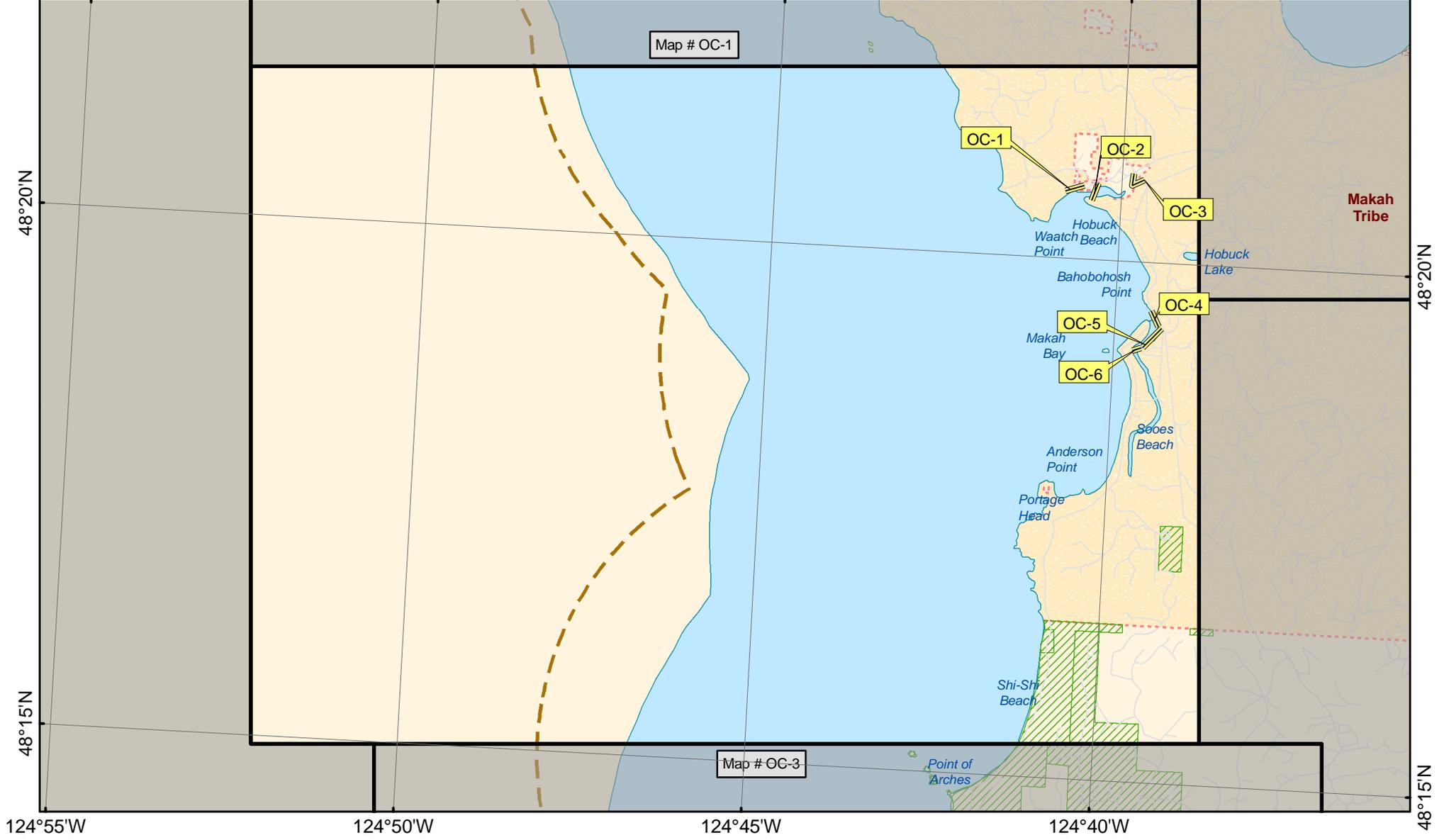
1 inch equals 1.50 miles

Map # OC-2 Makah Bay Proposed Booming Strategies

 Street	 Proposed Boom Placement	 Sector	 Military Lands	 Tribal Lands
 Highway	 Railroad	 Potential Spill Origin	 Public Lands	 County Boundary
 Ferry Route				

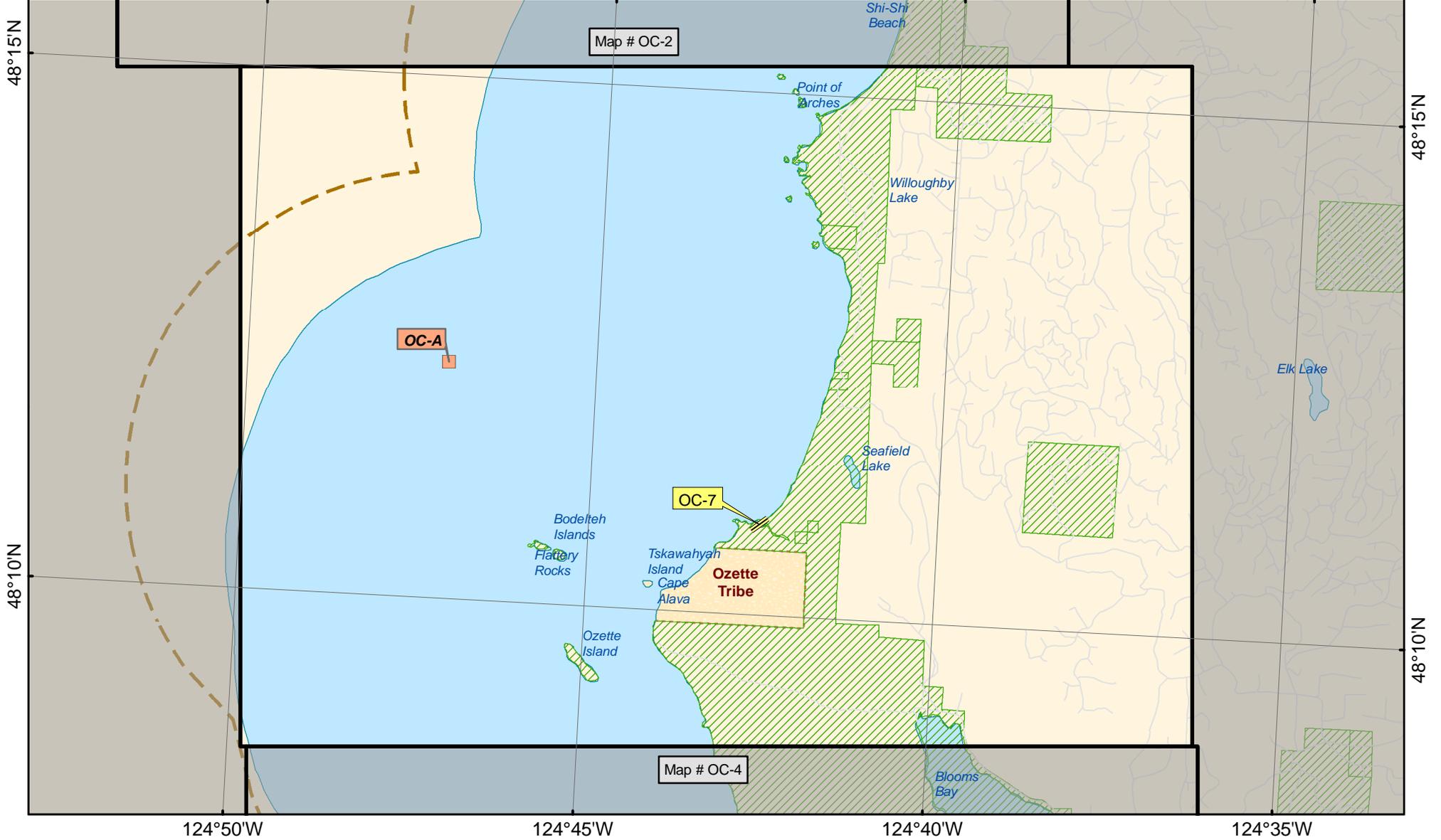
1 inch equals 1.50 miles

Map # OC-3 Cape Alava Proposed Booming Strategies

Street	Proposed Boom Placement	Sector	Military Lands	Tribal Lands
Highway	Railroad	Potential Spill Origin	Public Lands	County Boundary
Ferry Route				

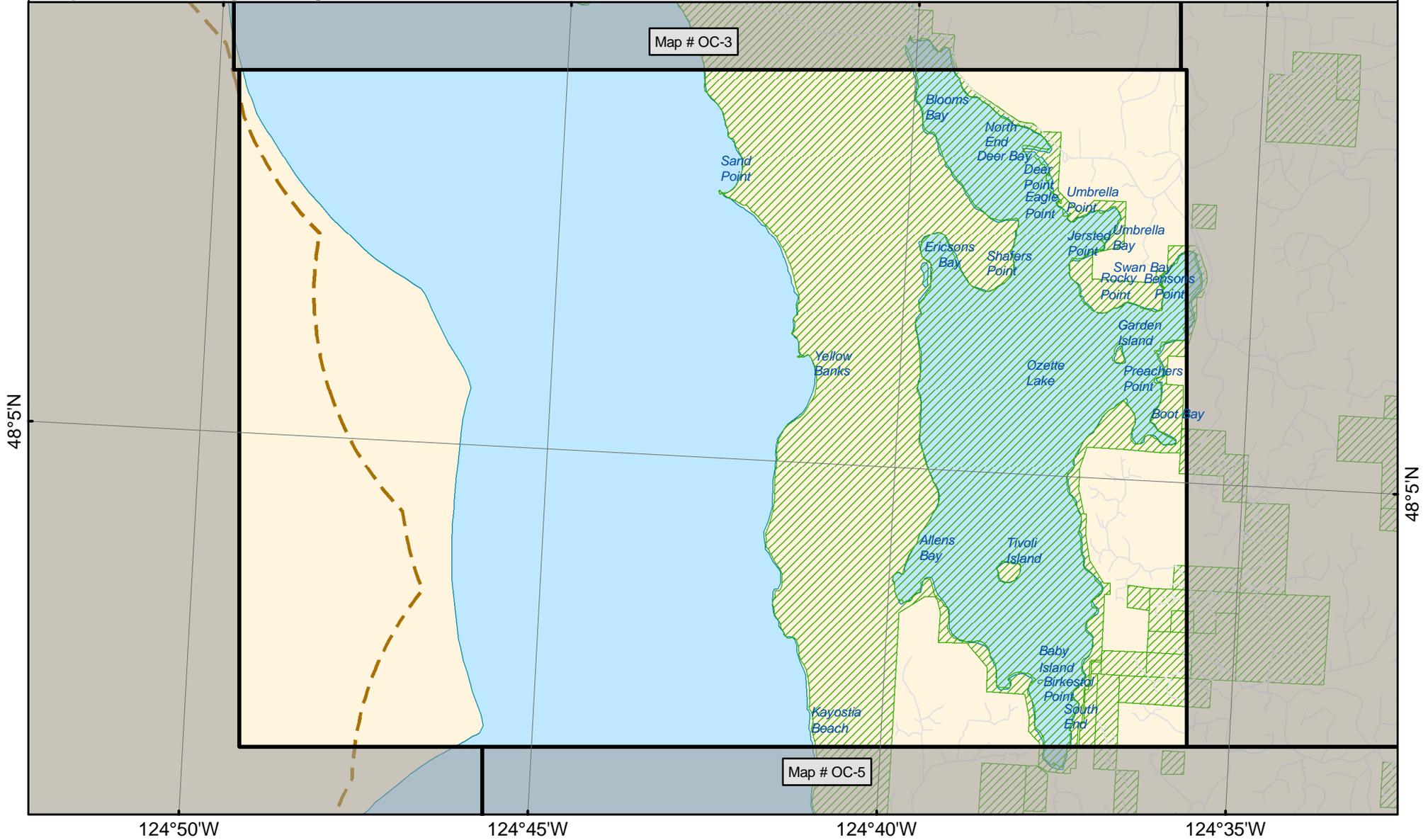
1 inch equals 1.5 miles

Map # OC-4 Sand Point Proposed Booming Strategies

 Street	 Proposed Boom Placement	 Sector	 Military Lands	 Tribal Lands
 Highway	 Railroad	 Potential Spill Origin	 Public Lands	 County Boundary
 Ferry Route				

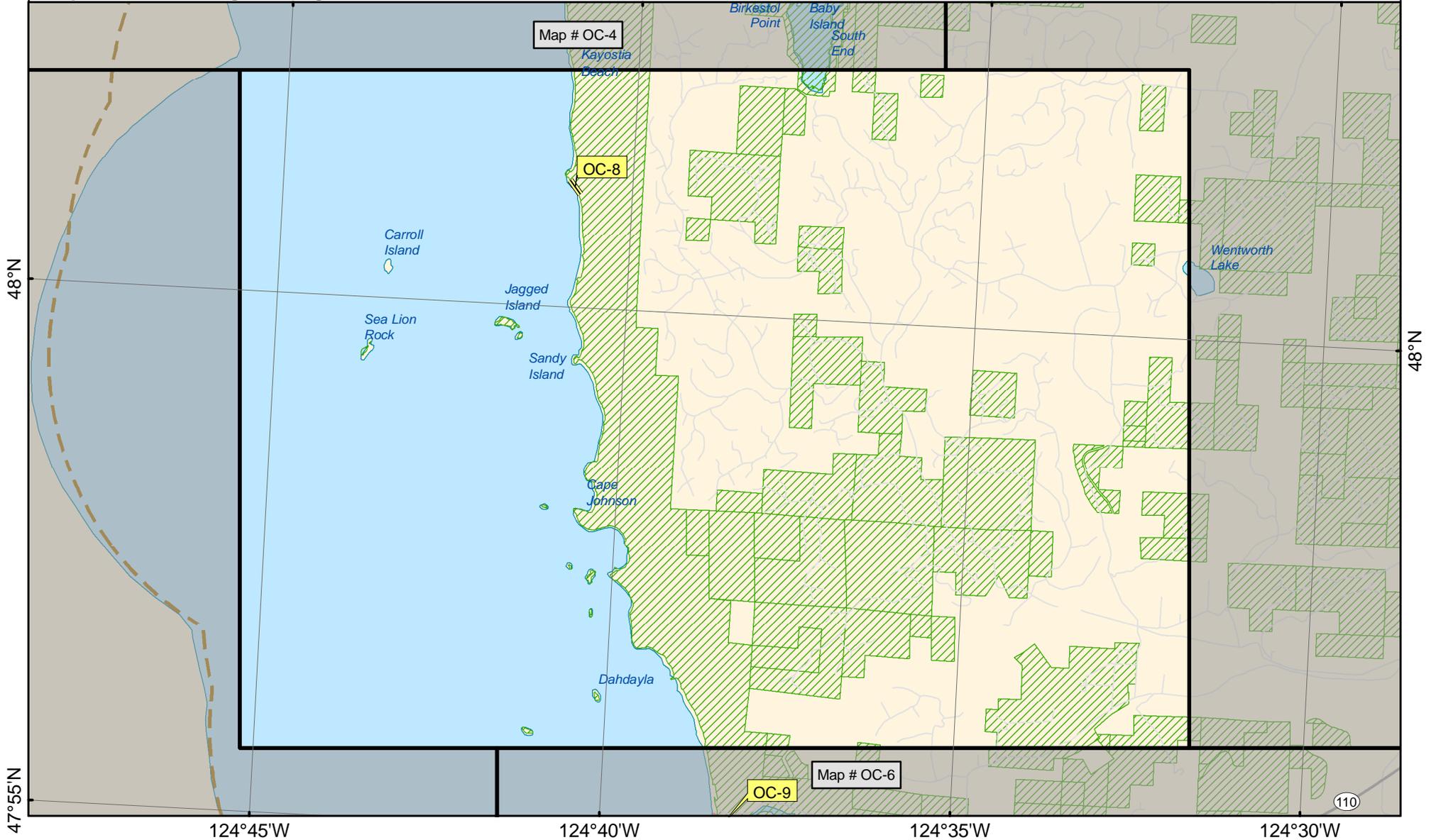
1 inch equals 1.50 miles



Map # OC-5 Cedar Creek Proposed Booming Strategies

 Street	 Proposed Boom Placement	 Sector	 Military Lands	 Tribal Lands
 Highway	 Railroad	 Potential Spill Origin	 Public Lands	 County Boundary
 Ferry Route				

1 inch equals 1.50 miles

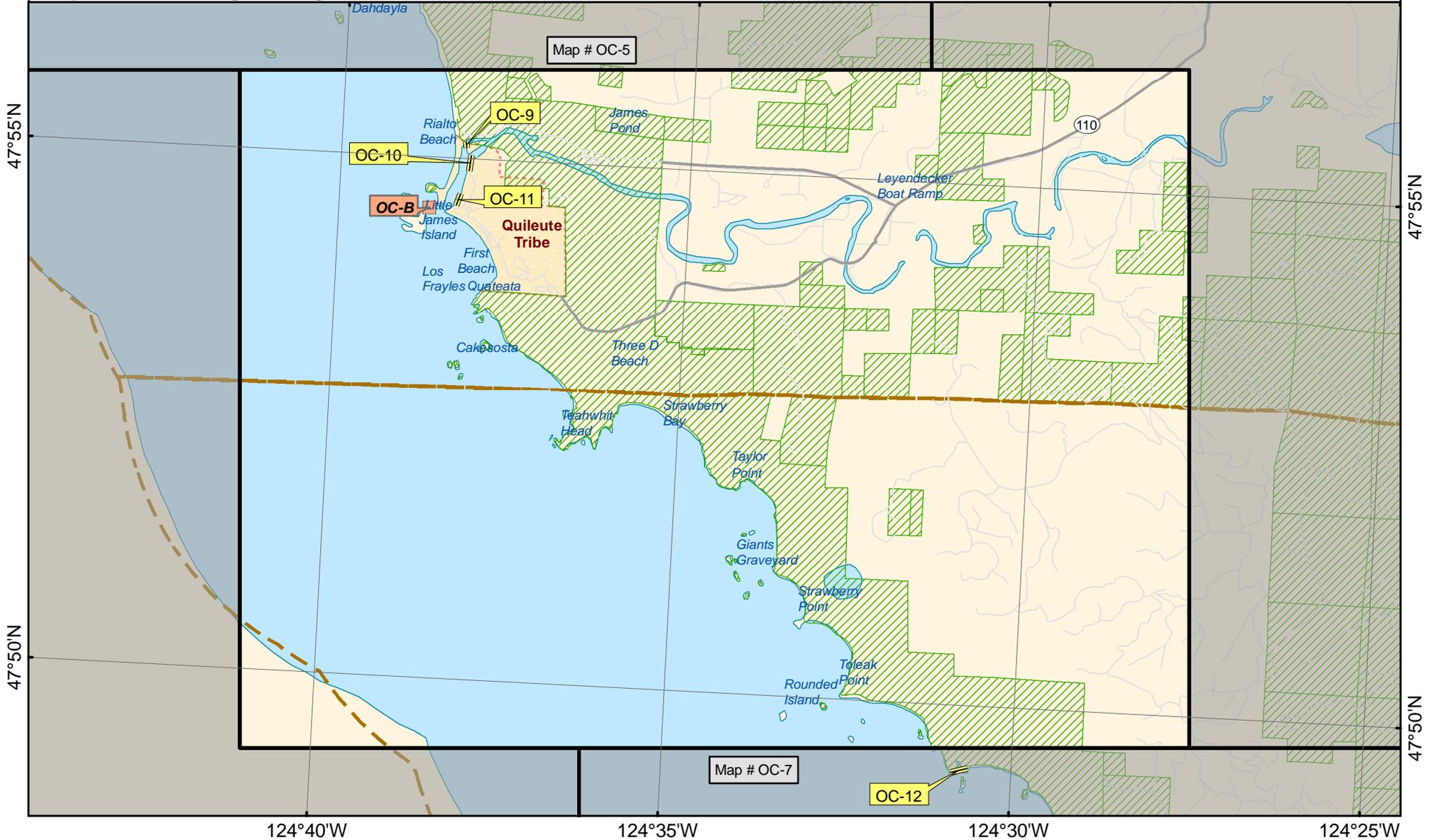
Map # OC-6

La Push

Proposed Booming Strategies

Street	Proposed Boom Placement	Sector	Military Lands	Tribal Lands
Highway	Railroad	Potential Spill Origin	Public Lands	County Boundary
Ferry Route				

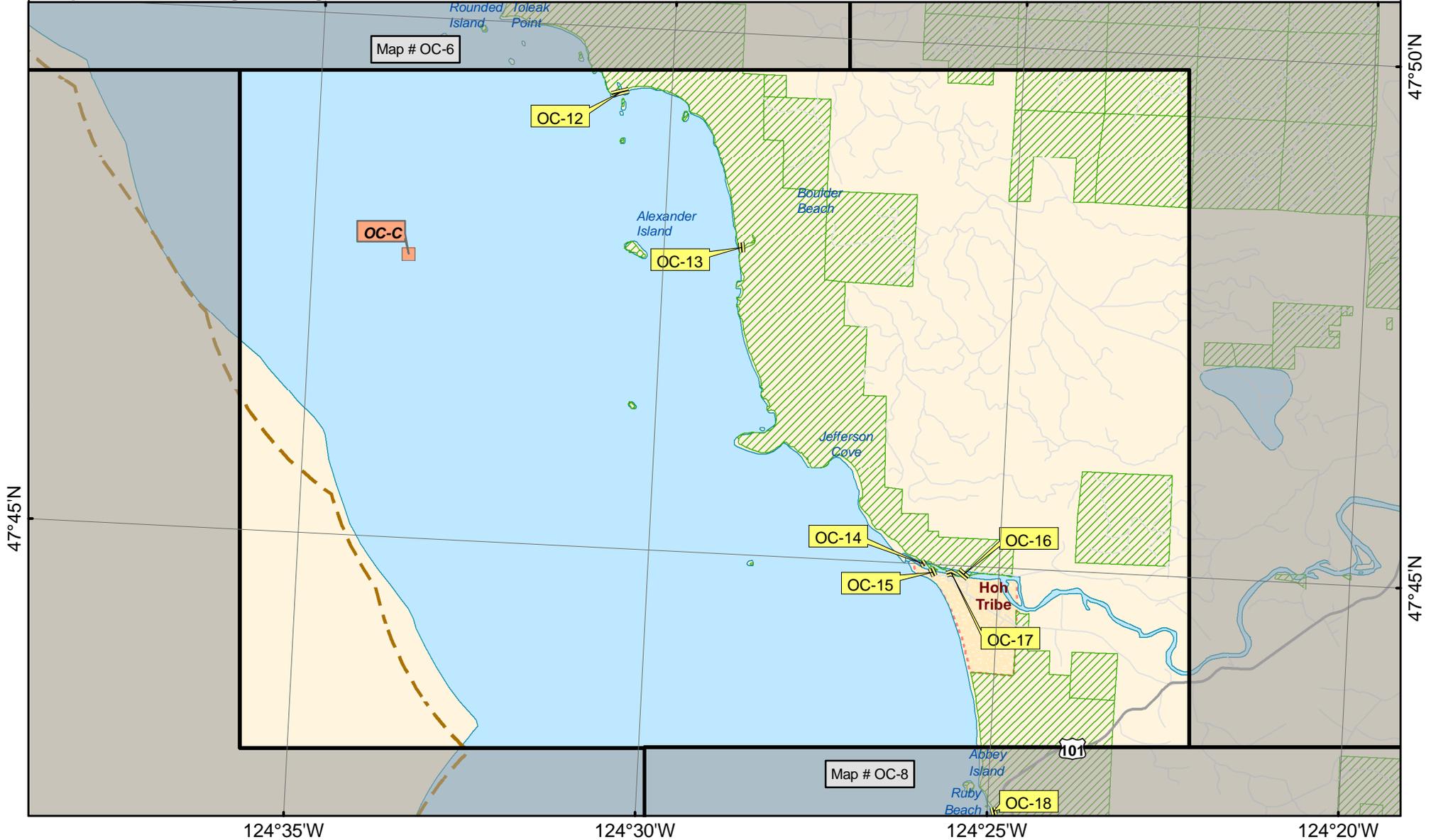
1 inch equals 1.5 miles



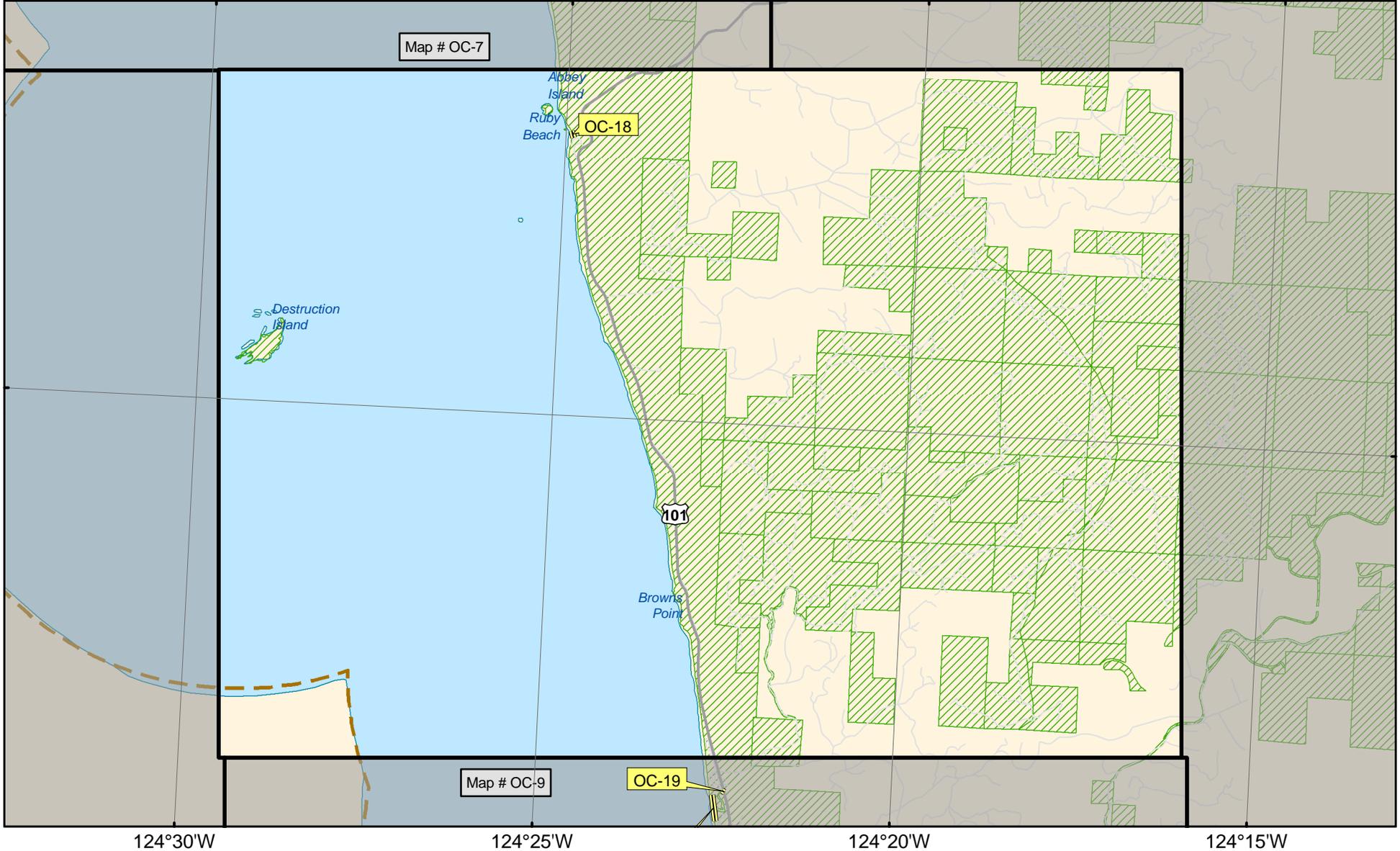
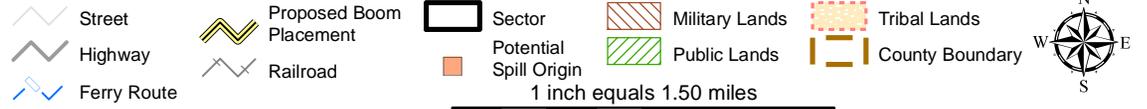
Map # OC-7 Hoh River Proposed Booming Strategies

Street	Proposed Boom Placement	Sector	Military Lands	Tribal Lands
Highway	Railroad	Potential Spill Origin	Public Lands	County Boundary
Ferry Route				

1 inch equals 1.50 miles

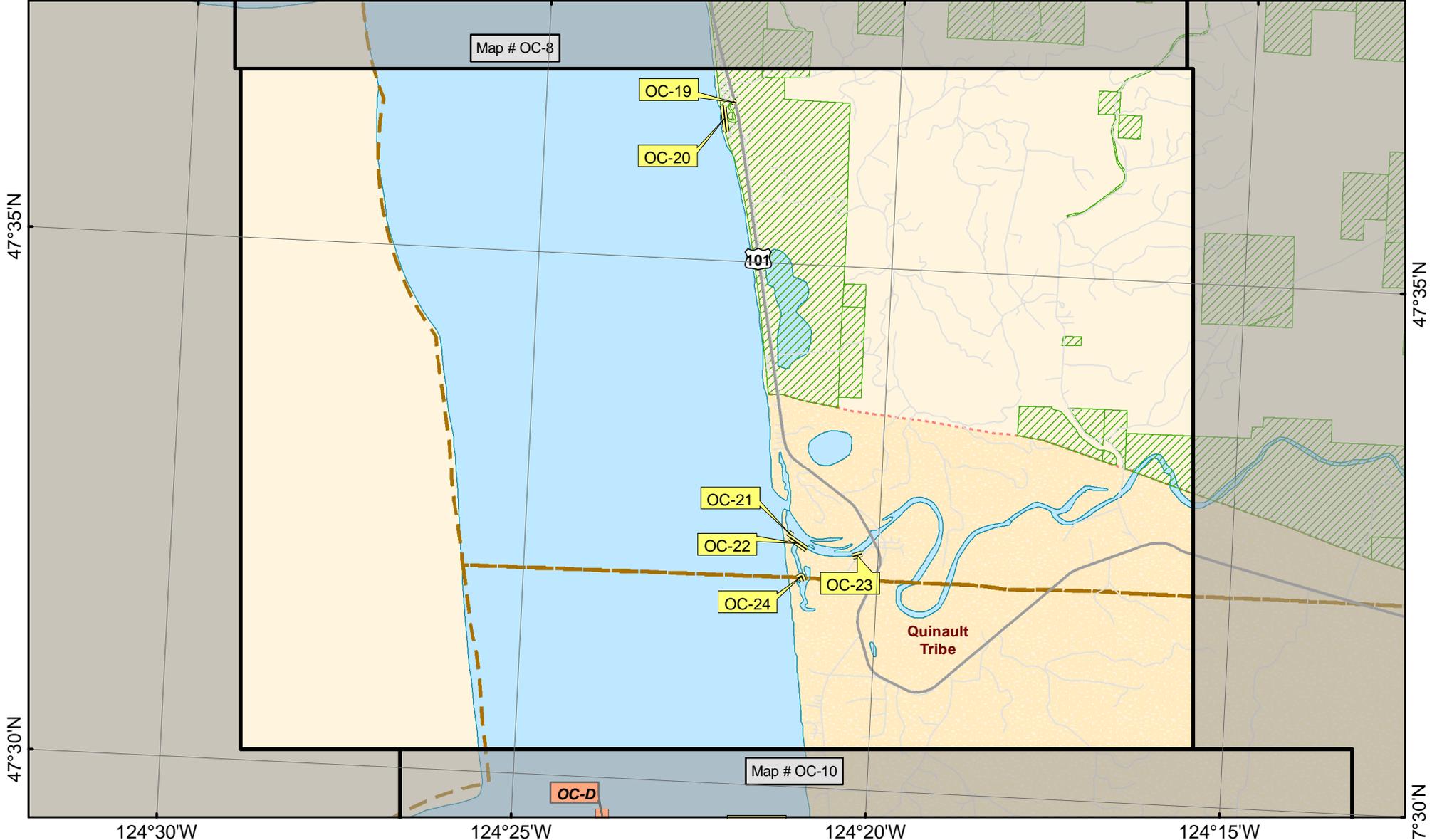
Map # OC-8 Ruby Beach Proposed Booming Strategies



Map # OC-9

Queets

Proposed Booming Strategies



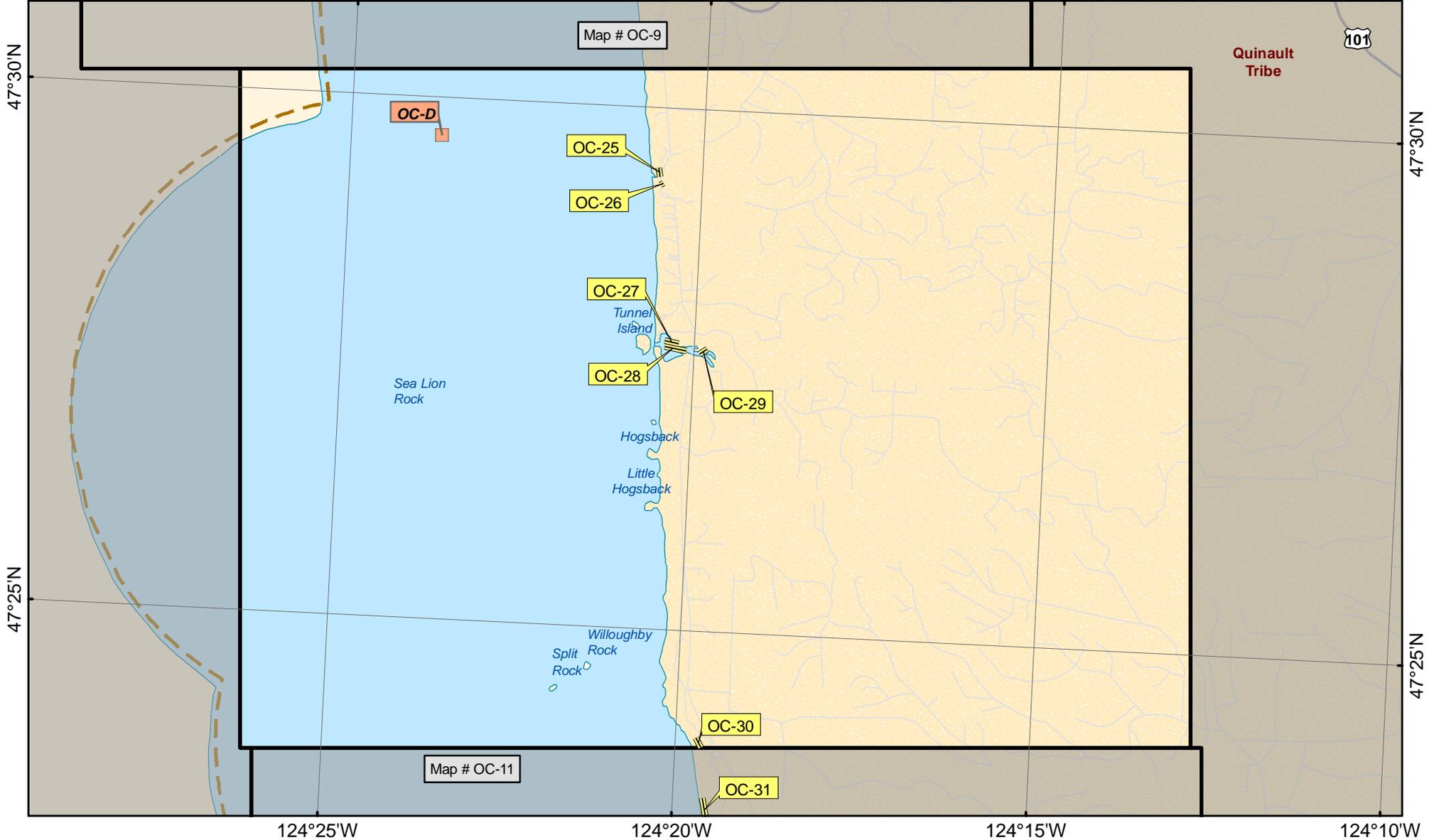
Map # OC-10

Tunnel Island

Proposed Booming Strategies

 Street	 Proposed Boom Placement	 Sector	 Military Lands	 Tribal Lands
 Highway	 Railroad	 Potential Spill Origin	 Public Lands	 County Boundary
 Ferry Route				

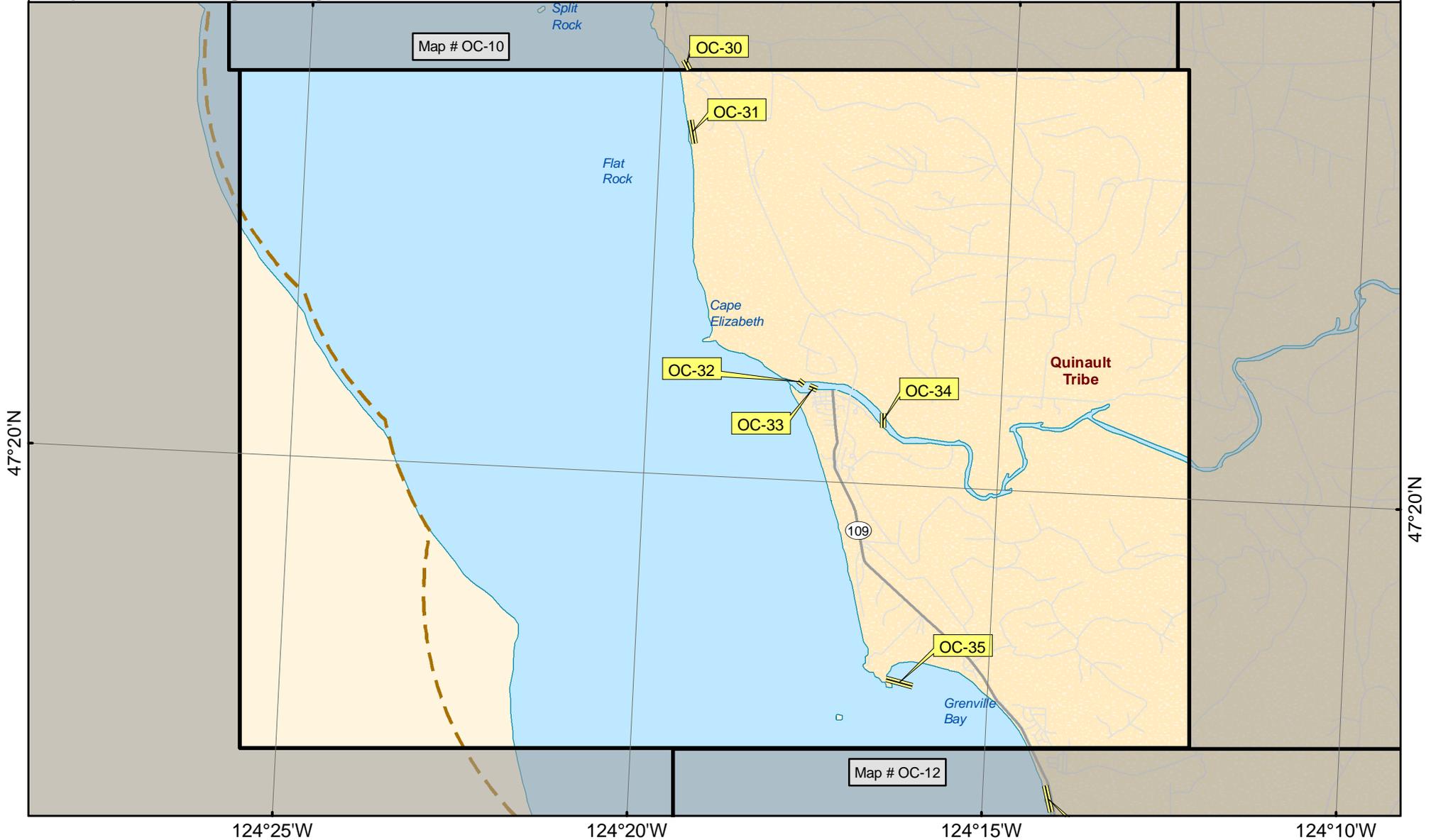
1 inch equals 1.50 miles



Map # OC-11

Quinalt

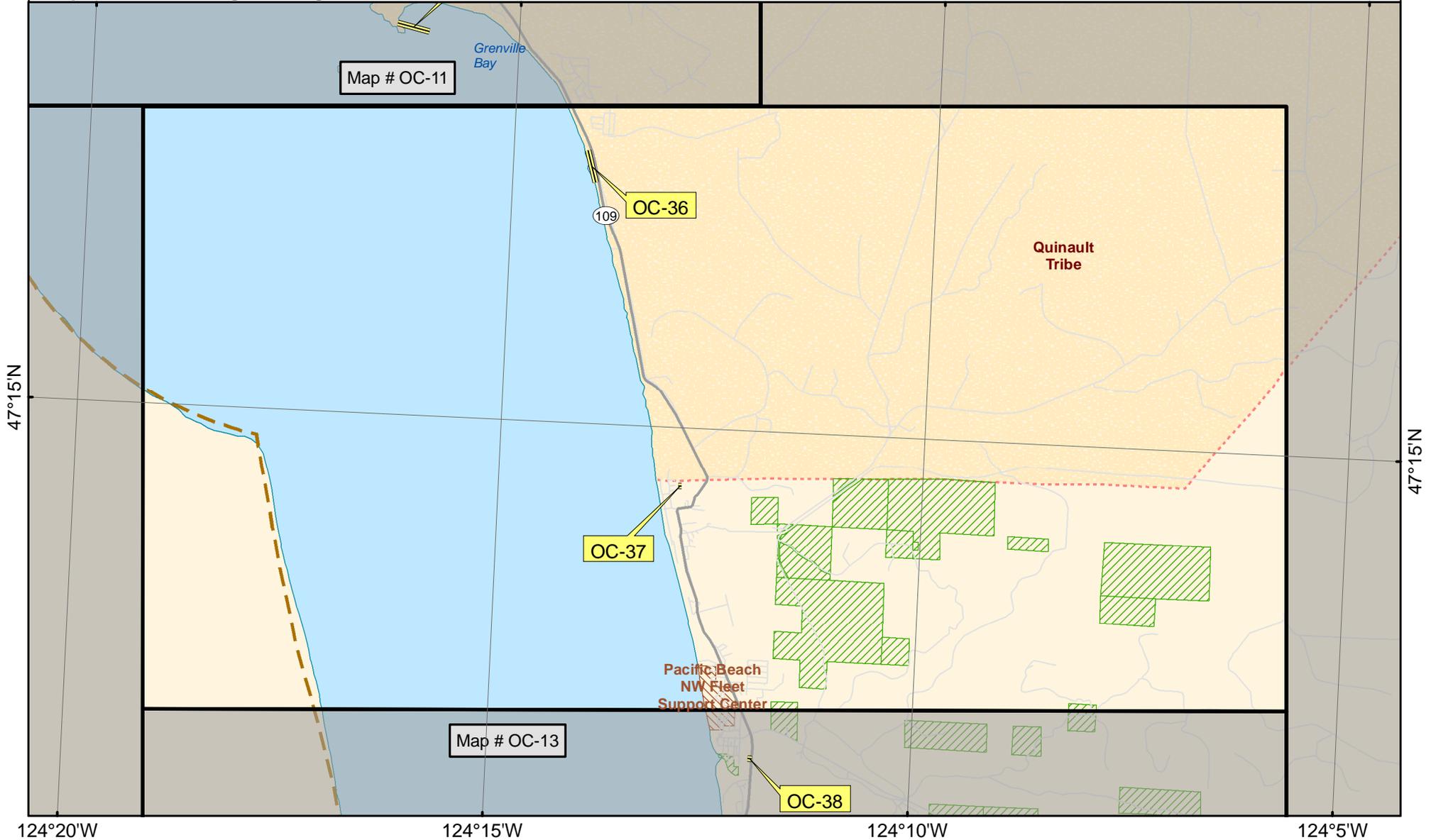
Proposed Booming Strategies



Map # OC-12

Moclips

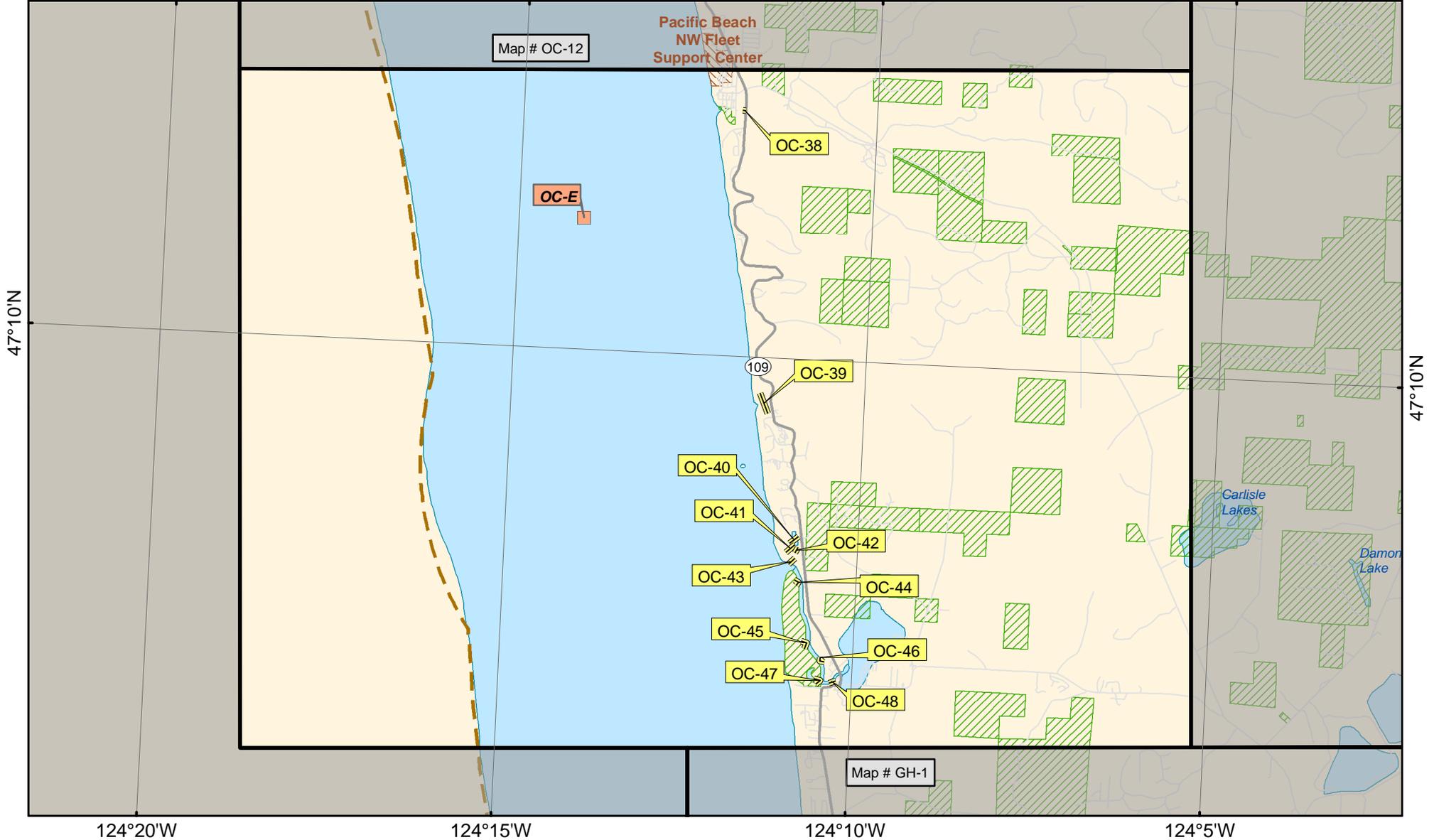
Proposed Booming Strategies



Map # OC-13 Copalis Beach Proposed Booming Strategies

Street	Proposed Boom Placement	Sector	Military Lands	Tribal Lands
Highway	Railroad	Potential Spill Origin	Public Lands	County Boundary
Ferry Route				

1 inch equals 1.51 miles

4.5 Proposed Booming and Collection Strategies - Matrices

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-01	Visited and Not Tested 07/26/2007	Waatch Creek N 48° 20.679' W 124° 40.673' map page 4-16 Chart #: 18485	Exclusion - keep oil out of Waatch Creek.	100ft B3 - Contractor Boom, 100ft Snare Boom	Deploy boom across the mouth of the creek. Must have tribal guide. If oil is present, also deploy snare-boom. Contact immediately or before entering: MAKAH TRIBE, (W) 360 645-2701 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0499	salmonids (anadromous), tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-02	Visited and Not Tested 07/26/2007	Waatch River Mouth N 48° 20.656' W 124° 40.382' map page 4-16 Chart#: 18485	Exclusion - keep oil out of Waatch River	600ft B3 - River Boom, or other appropriate type	Deploy boom near the mouth of the river as weather permits. Anchor with metal stakes on the south (Hobuck Beach) side, and rocks and trees on the north road access side. Can collect oil from the north side. Difficult due to river current. Will need Jon boat to get to other bank and put in midstream anchors if needed. Contact immediately or before entering: Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact MAKAH TRIBE, (W) 360 645-2701	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0506	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-03	Visited and Tested 07/26/2007	Waatch River Bridge N 48° 20.745' W 124° 39.820' map page 4-16 Chart#: 18485	Exclusion - keep oil out of Waatch River	600ft B3 - River Boom, or other appropriate type	Backup strategy for Waatch river mouth. Deploy boom across the river on the west side of the Waatch River Bridge across from the Makah Tribal office complex entrance. Deploy boom in a chevron configuration with the apex to the west in the middle of the river channel. Contact immediately or before entering: Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact MAKAH TRIBE, (W) 360 645-2701	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0501	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-04-CALL	Visited and Not Tested 07/26/2007	Sooes River Most Downstream N 48° 19.444' W 124° 39.417' map page 4-16 Chart#: 18485	Exclusion, diversion - keep oil out of marsh along bank, and in the main channel for collection further upstream.	700ft B3 - River Boom, or other appropriate type	Deploy boom along the west side of the river so that tides do not force oil into the marsh along the bank. Contact immediately or before entering: Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact MAKAH TRIBE, (W) 360 645-2701	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0510	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources, sensitive habitat
OC-05-CALL	Visited and Not Tested 07/26/2007	Sooes River Marsh N 48° 19.282' W 124° 39.450' map page 4-16 Chart#: 18485	Exclusion - keep oil out of marsh	1200ft B3 - River Boom, or other appropriate type	Deploy boom to enclose the marsh area along the bank of the river. Contact immediately or before entering: Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact MAKAH TRIBE, (W) 360 645-2701	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0511	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-06-CALL	Visited and Not Tested 07/26/2007	Sooes River Collection N 48° 19.165' W 124° 39.665' map page 4-16 Chart#: 18485	Collection - use tides and natural eddy to assist with collection at the location.	400ft B3 - River Boom, or other appropriate type	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Under most conditions a Vac truck could access the west bank by back road. Tribal guide required. Contact immediately or before entering: Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact MAKAH TRIBE, (W) 360 645-2701	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0511	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-07-STAGE	Visited and Not Tested 08/15/2007	Ozette River N 48° 10.874' W 124° 42.551' map page 4-17 Chart #: 18485	Exclusion - keep oil out of Ozette River	300ft B3 - River Boom, or other appropriate type	Put in two strategies, one close to the mouth, one further upstream. Boom across at angle as conditions call for. All recovery equip. must be air transportable. Good anchors on the south side (tree stumps) but only drift logs on the north side. Anchors on the north side will require long lengths of line (about 500 feet). Small boat or fly fishing tube required to get worker across the river. Minimum two workers, self supported for minimum 48 hours in poor weather conditions. No cell phone coverage, radio required. Contact immediately or before entering: Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0551	public lands/facilities, salmonids (anadromous), tribal lands/resources, shellfish

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-08-STAGE	Visited and Not Tested 08/16/2007	Cedar Creek N 48° 1.139' W 124° 40.833' map page 4-19 Chart #: 18480	Exclusion - keep oil out of Cedar Creek	100ft B3 - River Boom, or other appropriate type, 100ft Sorbent Boom	Deploy boom at an angle across the creek as weather permits. Pool behind logs during winter. Flow generally less during summer. All recovery equipment must be air transportable. There are plenty of trees and drift logs for shore anchors on both sides of the stream. Sorbent boom will be useful for stuffing gaps caused by logs. Contact immediately or before entering: Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0594	public lands/facilities, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-09-CALL	New - visited but not tested 08/08/2007	Quillayute River Rialto Beach Collection N 47° 55.139' W 124° 38.225' map page 4-20 Chart#: 18480	Collection - collect oil that strong tides would bring into mouth of river.	500ft B3 - River Boom, or other appropriate type	Boom to be deployed in the large bend in the river in front of the parking area for Rialto beach. Vac. truck can park at Rialto Beach (on opposite side of river in relation to La Push marina). Will require truck to have 300ft of hose. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe QUILEUTE TRIBE, (W) 360 374-9020 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0077	marine birds, public lands/facilities - National Park Service lands., tribal lands/resources, salmonids (anadromous), shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-10-CALL	Visited and Tested 08/08/2007	Quillayute River- Upstream of Marina N 47° 54.967' W 124° 38.235' map page 4-20 Chart#: 18480	Exclusion - keep oil out of side channels and in main channel of Quillayute River for collection further upstream	1000ft B3 - River Boom, or other appropriate type	Use boom to keep oil from going up the side channels, use the middle spit as anchor point, and put other anchors in as needed to maintain boom angle. Contact immediately or before entering: Tribe QUILEUTE TRIBE, (W) 360 374-9020 USCG - Quillayute River, (W) 360 374-6469	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0617	marine birds, salmonids (anadromous), sensitive habitat, public lands/facilities, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-11-CALL	Visited and Tested 08/08/2007	Quillayute River-Marina N 47° 54.581' W 124° 38.427' map page 4-20 Chart#: 18480	Exclusion - keep oil out of Quillayute River	200ft B3 - River Boom, or other appropriate type	Use marina breakwater and boom to keep oil in main channel until it reaches large bend on far north shore. As appropriate, boom can/will be deployed across mouth of marina. Must be tended to allow for traffic. Most important during flood tides. Contact immediately or before entering: Tribe QUILLEUTE TRIBE, (W) 360 374-9020 USCG - Quillayute River, (W) 360 374-6469	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=CLA0620	public lands/facilities, salmonids (anadromous), marine birds, sensitive habitat, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-12-STAGE	Not Visited 08/08/2007	Goodman Creek N 47° 49.385' W 124° 30.724' map page 4-21 Chart #: 18480	Exclusion - keep oil out of Goodman Creek	200ft B3 - River Boom, or other appropriate type	Deploy boom at an angle across the creek somewhat upstream from mouth. Use anchors and lines as needed to maintain an effective angle. Tidal influence extends about 1/3 mile upstream. Need skiff. Contact immediately or before entering: Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0780	public lands/facilities, salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-13-STAGE	Not Visited 08/08/2007	Mosquito Creek N 47° 47.913' W 124° 28.932' map page 4-21 Chart #: 18480	Exclusion - keep oil out of Mosquito Creek	200ft B3 - River Boom, or other appropriate type, 400ft Snare Boom	Only accessible by helo. Deploy boom across the creek as close to the mouth as possible, as weather permits. The actual location will be dependent on real time conditions, adjust as needed. A log jam typically forms at the mouth in the winter with a pool behind it. If oil is present, also deploy snare-boom. Contact immediately or before entering: Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0786	public lands/facilities - National Park Service Lands, salmonids (anadromous) - Coho, winter steel head

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-14	New - visited and tested 04/14/2007	Hoh River Mouth Deflection N 47° 45.009' W 124° 26.089' map page 4-21 Chart#: 18480	Deflection - direct oil toward south shore for collection.	500ft B3 - River Boom, or other appropriate type	Recommend real time assessment for on scene conditions prior to personnel and equipment deployment. Anchor along north bank just east of mouth of river to help direct oil toward collection boom area. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0077	shorebirds, salmonids (anadromous), public lands/facilities, marine birds, tribal lands/resources, shellfish, shellfish

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-15	Visited and Not Tested 08/14/2007	Hoh River N 47° 44.963' W 124° 25.802' map page 4-21 Chart #: 18480	Collection - use tides to collect oil near road on south bank to keep oil out of upper stretch of Hoh River.	600ft B3 - River Boom, or other appropriate type	The mouth of the Hoh is very dynamic, moving every couple of years. Depending on on scene conditions, collection strategy as close to mouth as possible. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0798	public lands/facilities, salmonids (anadromous), shorebirds, tribal lands/resources, marine birds, shellfish

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-16	New - visited but not tested 08/14/2007	Hoh River upstream collection N 47° 44.923' W 124° 25.503' map page 4-21 Chart#: 18480	Collection - collect oil which is being pushed upstream by tides.	550ft B3 - River Boom, or other appropriate type	Anchor boom on north bank, and angle to south bank, with the south bank anchor being located so that a vac truck can collect oil from the dirt road. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0798	shorebirds, salmonids (anadromous), tribal lands/resources, marine birds, public lands/facilities, shellfish
OC-17	New - visited but not tested 08/14/2007	Hoh River, Chalaat Creek N 47° 44.940' W 124° 25.678' map page 4-21 Chart#: 18480	Exclusion - keep oil from going up Chalaat Creek	300ft B3 - River Boom, or other appropriate type	Deploy chevron or use steep angled run of boom across mouth of Chalaat Creek. Contact immediately or before entering: Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0798	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-18	Visited and Not Tested 05/07/2007	Cedar Creek at Ruby Beach N 47° 42.646' W 124° 24.991' map page 4-22 Chart #: 18480	Exclusion - keep oil out of Cedar Creek at Ruby beach	300ft B3 - River Boom, or other appropriate type, 500ft Snare Boom	Actual location is dependent on real time conditions. Deploy boom at an angle across large pool behind driftwood line (about 1/8 mile above beach). Use anchors and lines as needed to maintain an effective angle. Pool is about 150' across and affected by extreme tidal conditions. If oil is present, also deploy snare-boom. Contact immediately or before entering: Kalaloch Lodge, (W) 866.525.2562, provide real time information about conditions Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0803	public lands/facilities, salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-19	New - visited but not tested 05/07/2007	Kalaloch 101 Bridge N 47° 36.526' W 124° 22.346' map page 4-23 Chart#: 18500	Exclusion - keep oil from going upstream, use bridge access for VAC truck for collection condition	100ft B3 - River Boom, or other appropriate type	Deploy boom from the bank at the SE corner of the bridge at an angle to the tidal push. Should be able to use bridge and lines to get boom on other side of creek. Use anchors and lines as needed to maintain an effective angle. Use bridge access for VAC truck for collection - will need about 150 of collection hose. Contact immediately or before entering: Kalaloch Lodge, (W) 866.525.2562, provide real time information about conditions Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0827	public lands/facilities, salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-20	Visited and Tested 05/15/2008	Kalaloch Creek N 47° 36.364' W 124° 22.469' map page 4-23 Chart #: 18500	Exclusion - keep oil out of Kalaloch Creek	400ft B3 - River Boom, or other appropriate type, 600ft Snare Boom	Deploy boom at an angle across the mouth of the creek. The actual location will be dependent on real time conditions, adjust as needed. - note under most conditions will need to be move strategy upstream. The lower beach location requires about 300 feet of boom the upper about 400feet. If oil is present, also deploy snare-boom. Contact immediately or before entering: Kalaloch Lodge, (W) 866.525.2562, provide real time information about conditions Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0827	salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-21-CALL	New - visited but not tested 08/14/2007	Queets River, north marsh N 47° 32.426' W 124° 21.260' map page 4-23 Chart#: 18500	Exclusion - keep oil out of northern marsh complex.	300ft B3 - River Boom, or other appropriate type	Place boom across opening channel at an angle to exclude and divert oil from northern marsh complex. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0840	salmonids (anadromous), sensitive habitat, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-22-CALL	Visited and Not Tested 04/14/2007	Queets River N Deflect N 47° 32.284' W 124° 21.272' map page 4-23 Chart #: 18500	Deflection - keep oil out of marshes along Queets River, note this area is very dynamic adjust as needed	1000ft B3 - River Boom, or other appropriate type	At the time of the visit - there was an opportunity to deflect product originating from the ocean up into the main channel of the river and past the habitat complex to the north. This deflection strategy requires 500 feet of boom and a minimum of 7, 40 pound anchors. If the deflection on the main channel is not feasible then move inside the side channels and attempt to divert into pond for collection. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0840	sensitive habitat, salmonids (anadromous), tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-23-CALL	New - visited but not tested 08/14/2007	Queets upstream collection site N 47° 32.252' W 124° 20.302' map page 4-23 Chart#: 18500	Collection - use tidal push to collect oil along south bank near boat ramp.	500ft B3 - River Boom, or other appropriate type	If oil is anticipated to move up the river with a high tide, high wind, high flow event, then a collection strategy at the boat ramp may be feasible. Angle of the boom should meet requirements of on scene conditions. Angle from north bank to south bank near boat ramp. This area is vac truck accessible. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0840	tribal lands/resources, salmonids (anadromous), sensitive habitat
OC-24-CALL	New - visited but not tested 08/14/2007	Queets, south bank marsh channel N 47° 32.024' W 124° 21.065' map page 4-23 Chart#: 18500	Exclusion - keep oil out of side channel, and divert to main channel for collection upstream	100ft B3 - River Boom, or other appropriate type	Put boom in chevron configuration, use shore stakes and anchor to insure effective angles. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=JEF0840	sensitive habitat, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-25-STAGE	Visited and Not Tested 08/13/2007	Whale Creek (NorthFork) N 47° 29.324' W 124° 20.651' map page 4-24 Chart #: 18500	Exclusion - keep oil out of creek	100ft B3 - River Boom, or other appropriate type, 200ft Snare Boom	Deploy boom across the mouth of north fork of the creek as close to the mouth as conditions permit. If oil is present, also deploy snare-boom. Must have tribal guide. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephoto/scripts/bigphoto.asp?id=GRA0008	sensitive habitat, salmonids (anadromous), tribal lands/resources
OC-26-STAGE	New - visited but not tested 08/13/2007	Whale Creek (South Fork) N 47° 29.274' W 124° 20.571' map page 4-24 Chart#: 18500	Exclusion - keep oil out of south fork of Whale creek.	100ft B3 - River Boom, or other appropriate type, 200ft Snare Boom	Deploy boom across the mouth of south fork of the creek as close to the mouth as conditions permit. If oil is present, also deploy snare-boom. Must have tribal guide. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephoto/scripts/bigphoto.asp?id=GRA0008	salmonids (anadromous), sensitive habitat, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-27-STAGE	Visited and Not Tested 08/13/2007	Raft River N Bank N 47° 27.769' W 124° 20.366' map page 4-24 Chart #: 18500	Exclusion - keep oil out of marshes along Raft River	700ft B3 - River Boom, or other appropriate type, 200ft Snare Boom	Recommend placing boom parallel to channel along the face of marsh on north bank. If oil is present, also deploy snare-boom. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0015	marine birds, salmonids (anadromous), sensitive habitat, tribal lands/resources
OC-28-STAGE	Visited and Not Tested 08/13/2007	Raft River S Bank N 47° 27.704' W 124° 20.267' map page 4-24 Chart #: 18500	Exclusion - keep oil out of marsh on S bank of Raft River	1000ft B3 - River Boom, or other appropriate type	Summer: Deploy sorbent boom along salt marshes parallel to river (labor-intensive). Winter: Deploy hard boom. River mouth subject to drastic change; substantial flow year-round. Mouth may be natural collection point. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0015	marine birds, salmonids (anadromous), sensitive habitat, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-29-STAGE	New - visited but not tested 08/14/2007	Raft River - near old fish farm N 47° 27.686' W 124° 19.881' map page 4-24 Chart#: 18500	Collection - collect oil if conditions push oil up river.	400ft B3 - River Boom, or other appropriate type	Place boom across river at in angle to direct oil to old fish farm for collection. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0015	marine birds, tribal lands/resources, sensitive habitat, salmonids (anadromous)
OC-30-STAGE	Visited and Not Tested 08/13/2007	Camp Creek N 47° 24.017' W 124° 19.762' map page 4-24 Chart #: 18500	Exclusion - keep oil out of Camp Creek	200ft B3 - River Boom, or other appropriate type, 400ft Snare Boom	Deploy boom across creek above first bend (at high tide, first bend is inaccessible). If oil is present, also deploy snare-boom. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0031	tribal lands/resources, salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-31-STAGE	Visited and Not Tested 08/13/2007	Duck Creek N 47° 23.300' W 124° 19.543' map page 4-25 Chart #: 18500	Exclusion - keep oil out of Duck Creek	150ft B3 - River Boom, or other appropriate type, 200ft Snare Boom	Deploy boom at upper end of pond. Mouth is 100' wide and shallow. Little tidal influence. If oil is present, also deploy snare-boom. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0034	salmonids (anadromous), tribal lands/resources
OC-32	Visited and Not Tested 08/09/2007	Quinault River N Bank near mouth N 47° 20.943' W 124° 17.837' map page 4-25 Chart #: 18500	Diversion - use tides to divert oil to collection site on south bank.	500ft B3 - River Boom, or other appropriate type	Anchor boom on North bank at an angle to divert oil to the south bank collection site. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0044	salmonids (anadromous), marine birds, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-33	Visited and Not Tested 08/09/2007	Quinault River S bank collection N 47° 20.902' W 124° 17.666' map page 4-25 Chart #: 18500	Collection - collect oil along south bank of Quinault River	500ft B3 - River Boom, or other appropriate type	Deploy boom at an angle so that oil collects in natural eddy area downstream from the processing plant. Use anchors and lines as needed to maintain an effective angle. Use vac truck to remove collected oil. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0044	tribal lands/resources, salmonids (anadromous), marine birds
OC-34	Visited and Not Tested 08/09/2007	Quinault River upstream collection N 47° 20.627' W 124° 16.660' map page 4-25 Chart #: 18500	Collection, exclusion - keep oil out of Quinault River, and collect oil at south bank collection site.	800ft B3 - River Boom, or other appropriate type	Deploy boom at an angle to tide flow to collect oil on the south bank. Use anchors and lines as needed to maintain an effective angle. There is a dirt road along the south bank that should be vac truck accessible. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0045	salmonids (anadromous), marine birds, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-35	Visited and Not Tested 08/09/2007	Point Grenville N 47° 18.112' W 124° 16.252' map page 4-25 Chart #: 18500	Collection - use natural collection area in Grenville Bay - offshore skimming or onshore collection as needed.	500ft B3 - Contractor Boom	Deploy boom at an angle to use the natural eddy to help concentrate oil for skimming. Must have tribal guide. Will require multiple anchors. Contact immediately or before entering: Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211	http://apps.ecy.wa.gov/shorephoto/scripts/bigphoto.asp?id=GRA0057	general fish & wildlife resources, tribal lands/resources
OC-36	Visited and Not Tested 06/06/2007	Wreck Creek N 47° 17.063' W 124° 14.072' map page 4-26 Chart #: 18500	Exclusion - keep oil out of Wreck Creek.	150ft B3 - River Boom, or other appropriate type, 150ft Sorbent Boom	Deploy boom across creek at bridge on Highway 109 as weather permits. Creek width varies from 10' (spring) to 40' (winter). In winter allow creek to flush. Recommend lining contractor boom with sorbent boom. Deploy on upstream side of river, in a chevron. Contact immediately or before entering: QUINAULT NATION, (W) After-Hours , (H) 360/276-8211, After-Hours Emergencies	http://apps.ecy.wa.gov/shorephoto/scripts/bigphoto.asp?id=GRA0066	salmonids (anadromous), sensitive habitat, shorebirds, tribal lands/resources

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-37	New - visited but not tested 06/06/2007	Moclips River Upstream N 47° 14.536' W 124° 12.877' map page 4-26 Chart#: 18500	Exclusion, collection - Keep oil out of river, and collection if possible.	200ft B3 - Contractor Boom	Deploy from end of 6th street. Anchor boom to pilings on west side of river, use skiff to anchor other end downstream on the east side of river.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0077	salmonids (anadromous), sensitive habitat, shorebirds, tribal lands/resources
OC-38	New - visited but not tested 06/06/2007	Joe Creek N 47° 12.375' W 124° 11.865' map page 4-27 Chart#: 18500	Exclusion, collection - keep oil out of creek and collection of oil if possible.	300ft B3 - Contractor Boom	Angle boom from bank at SE corner of bridge to the private boat ramp next to the house about 300 ft downstream on the far shore. Contact immediately or before entering: Iron Springs Resort, (W) 360-276-4230 R. Betcher, (H) 360 276 4376, private home with boat launch Pacific Beach State Park, (W) 360 276 4297, can provide description of local conditions.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0086	shorebirds, salmonids (anadromous), public lands/facilities, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-39	Visited and Not Tested 06/06/2007	Boone Creek N 47° 9.566' W 124° 11.419' map page 4-27 Chart #: 18500	Exclusion, collection - keep oil out of Boone Creek, and if possible collection with vac truck.	400ft B3 - Contractor Boom, 100ft Snare Boom	Deploy boom across the entrance to the cove at the creek mouth as the weather permits. Recommend - that boom be anchored at north shore of resort road which leads to beach. Run boom across mouth of creek in SE direction and anchor on far shore at an angle. Cove becomes dry at low tide, and the creek is very shallow; 20' width. Back up boom with snares or sorbent sweeps across the creek at the culverts under Highway 109. Could get vac truck to waters edge on north shore via resort road. Contact immediately or before entering: Iron Springs Resort, (W) 360-276-4230	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0096	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-40	Visited and Not Tested 08/09/2007	Copalis River E bank closest mouth N 47° 8.264' W 124° 10.906' map page 4-27 Chart #: 18500	Deflection - use tide to deflect oil to collection site on west bank of Copalis River	400ft B3 - River Boom, or other appropriate type	Deploy boom from the east bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0102	salmonids (anadromous), public lands/facilities, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-41	New - visited but not tested 08/09/2007	Copalis W bank nearest mouth N 47° 8.182' W 124° 10.952' map page 4-27 Chart#: 18500	Collection - use tidal push to collect oil on west bank	400ft B3 - River Boom, or other appropriate type	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0102	waterfowl, shorebirds, sensitive habitat, salmonids (anadromous), public lands/facilities

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-42	New - visited but not tested 08/09/2007	Copalis River, 2nd deflection on E bank N 47° 8.159' W 124° 10.871' map page 4-27 Chart#: 18500	Deflection - use tidal push to deflect oil to west bank for collection.	450ft B3 - River Boom, or other appropriate type	Deploy boom from the east bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact park regarding access to beach and possible (however unlikely) vac truck access. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0102	salmonids (anadromous), sensitive habitat, public lands/facilities

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-43	New - visited but not tested 08/09/2007	Copalis River, 2nd collection W bank N 47° 8.060' W 124° 10.916' map page 4-27 Chart#: 18500	Collection - collect oil along west bank, before it goes upstream into marshes.	450ft B3 - River Boom, or other appropriate type	Anchor boom on west bank oriented at NE angle toward northeast bank. Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0103	public lands/facilities, salmonids (anadromous), waterfowl, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-44	New - visited but not tested 08/09/2007	Copalis side channel W bank N 47° 7.858' W 124° 10.811' map page 4-27 Chart#: 18500	Exclusion - keep oil out of side channel closest to the mouth on the east bank.	100ft B3 - River Boom, or other appropriate type	Deploy boom in a chevron to keep oil out of side channel. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0105	waterfowl, salmonids (anadromous), public lands/facilities, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-45	New - visited but not tested 08/09/2007	Copalis, W bank 2nd side channel from mouth N 47° 7.279' W 124° 10.660' map page 4-27 Chart#: 18500	Exclusion - keep oil out of side channel.	100ft B3 - River Boom, or other appropriate type	Deploy boom in a chevron, use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0105	waterfowl, sensitive habitat, salmonids (anadromous), public lands/facilities

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-46	New - visited but not tested 08/08/2007	Copalis River - E side channel N 47° 7.111' W 124° 10.464' map page 4-27 Chart#: 18500	Exclusion - keep oil out of side channel	100ft B3 - River Boom, or other appropriate type	Deploy boom in a chevron. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0105	waterfowl, shorebirds, sensitive habitat, public lands/facilities

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-47	New - visited but not tested 08/09/2007	Copalis side channel, W bank, closest to ramp N 47° 6.922' W 124° 10.451' map page 4-27 Chart#: 18500	Exclusion - keep oil out of side channel.	100ft B3 - River Boom, or other appropriate type	Deploy boom in chevron, adjust angle based on field conditions. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0105	waterfowl, salmonids (anadromous), public lands/facilities

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-6: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Shoreline Oblique Photo	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
OC-48	New - visited but not tested 08/09/2007	Copalis River, collection site at boat launch N 47° 6.913' W 124° 10.269' map page 4-27 Chart#: 18500	Collection - use tidal push to collect oil along southwest bank.	400ft B3 - River Boom, or other appropriate type	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact immediately or before entering: State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.	http://apps.ecy.wa.gov/shorephotos/scripts/bigphoto.asp?id=GRA0105	waterfowl, sensitive habitat, salmonids (anadromous), public lands/facilities

APPENDIX A - BOAT LAUNCH LOCATIONS SUMMARY

Appendix A: Boat Launch Locations Summary

Reference Number	Site Name	Location	Facility Description
Motorboat Launch Inventory			
BL-211	Ozette Ranger Station	Sector Map OC-3 N 48° 9.267'/ W 124° 40.083' Ozette Lake	Car Parking, Gravel - 45 Launches, Ramp - gravel - 1 Restrooms, Flush - 1 Trailer Parking, Gravel - 40
BL-215	Rayonier Landing	Sector Map OC-4 N 48° 8.550'/ W 124° 38.850' Ozette Lake	Launches, Ramp - gravel - 1 Restrooms, Vault - 2
BL-305	Dickey Boat Ramp	Sector Map OC-6 N 47° 55.267'/ W 124° 37.167' Dickey River	Car Parking, Gravel - 10 Launches, Ramp - concrete, plank - 1 Trailer Parking, Gravel - 35
BL-308	Wilson Bridge (WDFW) - Bogacheil River	Sector Map OC-6 N 47° 55.100'/ W 124° 29.850' Bogachiel River	Car Parking, Gravel - 10 Launches, Ramp - concrete, plank - 1 Restrooms, Vault - 2 Trailer Parking, Gravel - 20
BL-310	La Push Marina	Sector Map OC-6 N 47° 54.600'/ W 124° 38.233' Quillayute River	Car Parking, Gravel - 20 Launches, Loading float - 1 Launches, Ramp - concrete, solid - 1 Restrooms, Flush - 2 Trailer Parking, Gravel - 20 Waste Disposal, Pumpout - 1
BL-311	Leyendecker Park (WDFW)- Bogacheil River	Sector Map OC-6 N 47° 54.733'/ W 124° 32.433' Bogachiel River	Car Parking, Gravel - 10 Launches, Ramp - concrete, plank - 1 Restrooms, Vault - 1 Trailer Parking, Gravel - 20

APPENDIX B - DETAILED STRATEGY LOCATIONS AND DESCRIPTIONS

Site Lat/Long:	N 48° 20.679' / W 124° 40.673', Sector Map OC-2
Strategy Objective:	Exclusion - keep oil out of Waatch Creek.
Implementation:	Deploy boom across the mouth of the creek. Must have tribal guide. If oil is present, also deploy snare-boom.
Site Safety Note:	Tides and storm surge can make this area very dangerous. Tribal guide required.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Makah Tribal office complex. Road curves right. Take left unimproved road to river edge near mouth. Road can accept weight of heavy equipment. Follow trail along the shore to creek mouth.
Resources Targeted:	salmonids (anadromous), tribal lands/resources
Fixed Anchors:	41: N 48° 20.670' / W 124° 40.628', Water Depth 2ft, Upper bank of creek - adjust as needed based on real-time conditions
Watercourse Description:	Creek, small creek with varible flow, Field Visit Width ~ 50ft, Field Visit Depth ~ 2ft, gravel



Suggested Equipment

Quantity	Description
100 ft	B3 - Contractor Boom
100 ft	Snare Boom
4 each	Stake(s)

Suggested Personnel

2	Laborer (s)
---	-------------

Status: Visited and Not Tested 07/26/2007



Waatch River Parking access for Waatch creek

N 48.944086° W 124.675347° E WGS 84 07/26/2007 10:50:34 AM

Image-888: Parking access for Waatch creek



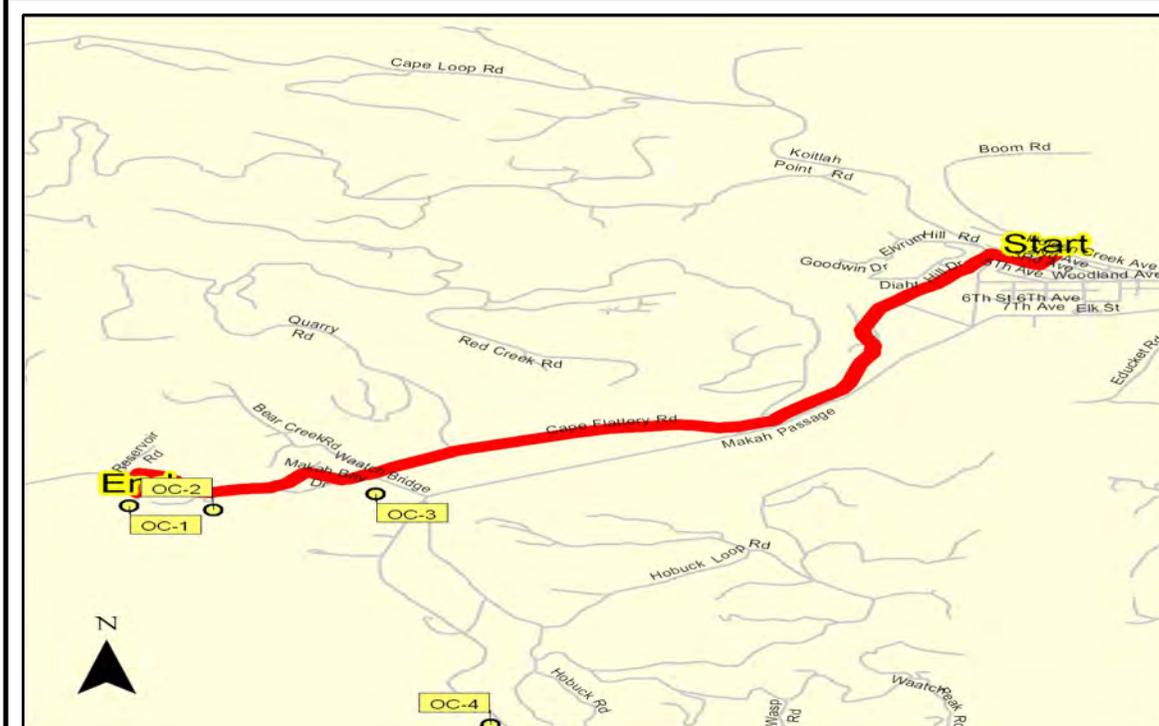
Waatch River Mouth of Waatch Creek

N 48.944086° W 124.675347° NE WGS 84 07/26/2007 10:53:52 AM

Image-889: Mouth of Waatch Creek

Site Contact Information

High Priority - contact immediate or before entering:
 MAKAH TRIBE, (W) 360 645-2701
 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact



Closest Address:

134 Arrow Head Rd., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.15 Mile(s))
 4. Turn left on Cape Flattery Rd (2.52 Mile(s))
 5. Bear right on Makah Bay Dr (0.1 Mile(s))
 6. Bear left on Resort Rd (0.14 Mile(s))
 7. Turn right on Cape Flattery Rd (0.4 Mile(s))
 8. Turn left on Arrow Head Rd (Wa Atch Cr Rd) (0.12 Mile(s))
- Arrive at 134 Arrow Head Rd., Sekiu, WA, 98381, on the left

Site Lat/Long:	N 48° 20.656' / W 124° 40.382', Sector Map OC-2
Strategy Objective:	Exclusion - keep oil out of Waatch River
Implementation:	Deploy boom near the mouth of the river as weather permits. Anchor with metal stakes on the south (Hobuck Beach) side, and rocks and trees on the north road access side. Can collect oil from the north side. Difficult due to river current. Will need Jon boat to get to other bank and put in midstream anchors if needed.
Site Safety Note:	Tides and storm surge can make this area very dangerous. Tribal guide required.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Makah Tribal office complex. Road curves right. Take left unimproved road to river edge near mouth. Road can accept weight of heavy equipment.
Resources Targeted:	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources
Fixed Anchors:	43: N 48° 20.704' / W 124° 40.340', Water Depth 10ft, north bank near dirt road - adjust as needed
Watercourse Description:	Estuaries, flow highly variable, Field Visit Width ~ 250ft, mud



Suggested Equipment	
Quantity	Description
1 each	Anchor(s) for strong currents - ie. SARCA
600 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)
Suggested Personnel	
1	Boat Operator (s)
6	Laborer (s)

Status: Visited and Not Tested 07/26/2007

Waatch River Secondary Boom Site, Waatch River



N 48.944367° W 124.673778° SW WGS 84 07/26/2007 12:00:44 PM

Image-892: Mouth Boom site, Waatch River

Waatch River Parking access for Waatch creek

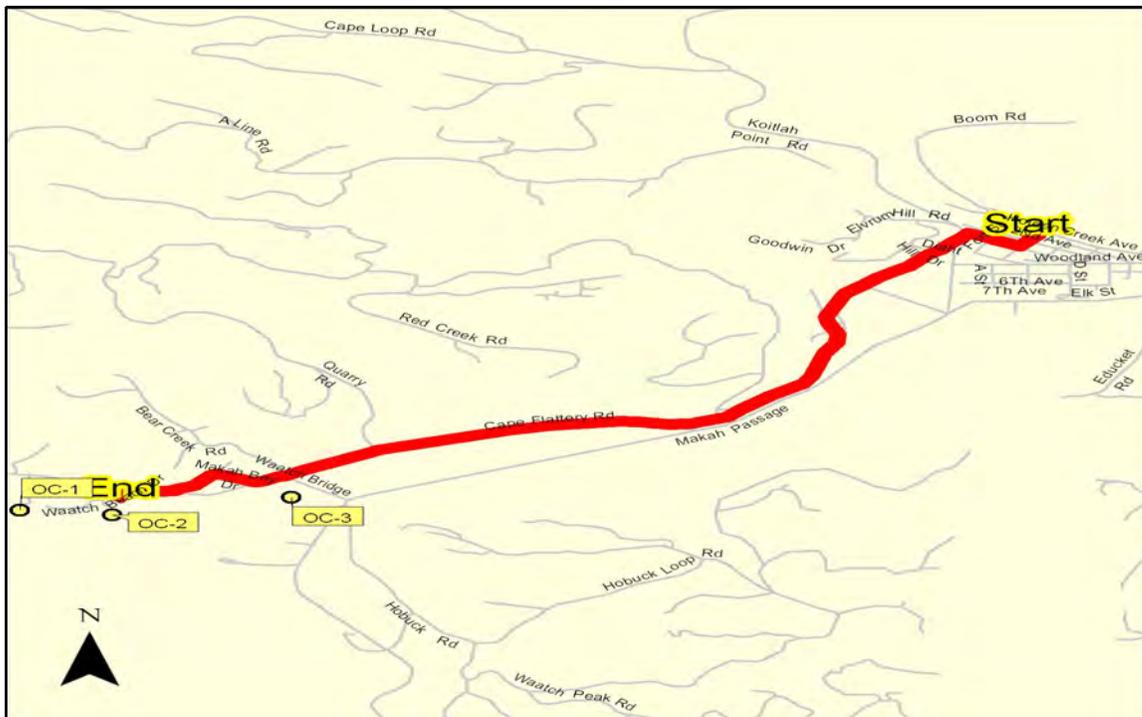


N 48.944086° W 124.675347° E WGS 84 07/26/2007 10:50:34 AM

Image-893: Parking access for Waatch creek and River mouth

Site Contact Information

High Priority - contact immediate or before entering:
 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact
 MAKAH TRIBE, (W) 360 645-2701



Closest Address:

Waatch Beach Dr., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.15 Mile(s))
 4. Turn left on Cape Flattery Rd (2.52 Mile(s))
 5. Bear right on Makah Bay Dr (0.1 Mile(s))
 6. Bear left on Resort Rd (0.14 Mile(s))
 7. Turn right on Cape Flattery Rd (0.13 Mile(s))
 8. Bear left on Wa Atch Beach Dr (0.02 Mile(s))
- Arrive at Waatch Beach Dr., Sekiu, WA, 98381, on the right

Site Lat/Long:	N 48° 20.745' / W 124° 39.820', Sector Map OC-2
Strategy Objective:	Exclusion - keep oil out of Waatch River
Implementation:	Backup strategy for Waatch river mouth. Deploy boom across the river on the west side of the Waatch River Bridge across from the Makah Tribal office complex entrance. Deploy boom in a chevron configuration with the apex to the west in the middle of the river channel.
Site Safety Note:	Tribal guide required. Take fast water precautions depending on flow. Take high traffic area precautions. Area can have high mosquito concentrations.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Makah Tribal office complex. Turn left just before the office complex to bridge.
Resources Targeted:	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources
Fixed Anchors:	42: N 48° 20.812' / W 124° 39.797', Near nothwest corner of bridge, adjust as needed based on real-time conditions.
Watercourse Description:	Estuaries, At extreme tides entire area in front of bridge can be submerged., Field Visit Width ~ 200ft, mud



Suggested Equipment

Quantity	Description
600 ft	B3 - River Boom, or other appropriate type
1 each	Danforth(s)
6 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
6	Laborer (s)

Status: Visited and Tested 07/26/2007

Waatch River Boom being set-up for deployment



N 48.546985° W 124.663356° SW WGS 84 07/26/2007 9:43:01 AM

Image-890: Boom being set-up for deployment

Waatch River View from middle of bridge downstream

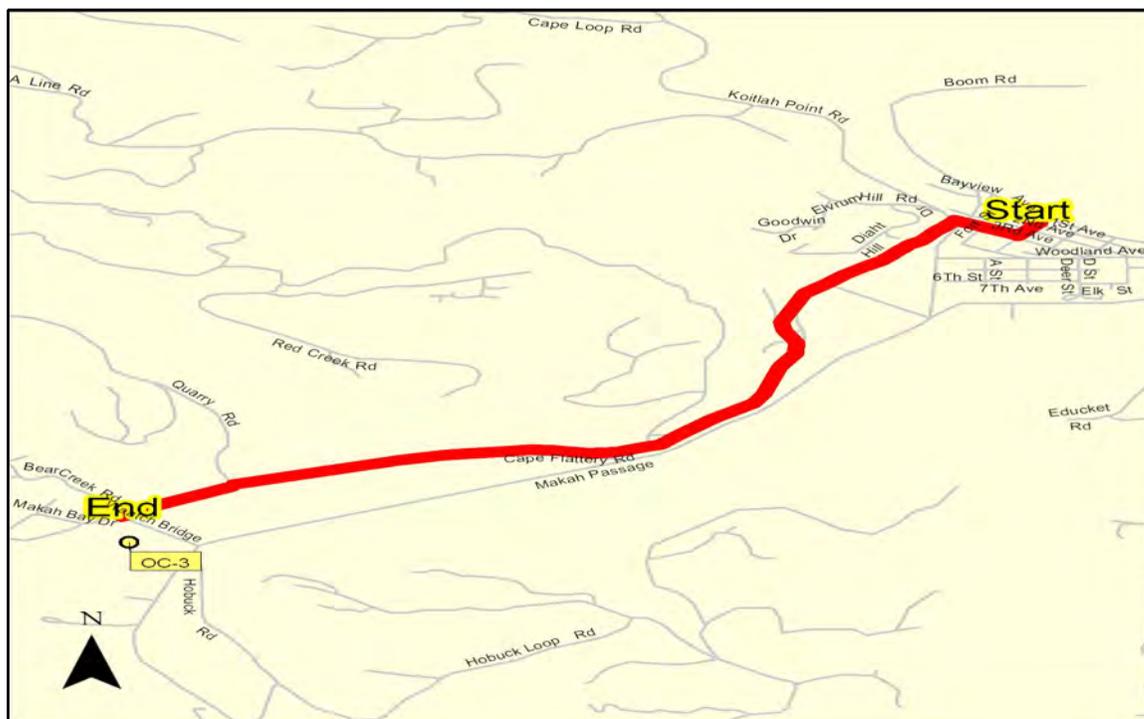


N 48.546711° W 124.662833° W WGS 84 07/26/2007 9:52:49 AM

Image-891: View from middle of bridge downstream.

Site Contact Information

High Priority - contact immediate or before entering:
 Lloyd Lee, Makah Tribal Police,
 (H) 360 645-2701, After hours contact
 MAKAH TRIBE, (W) 360 645-2701



Closest Address:

Hobuck Rd. & Cape Flattery Rd., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.15 Mile(s))
 4. Turn left on Cape Flattery Rd (2.44 Mile(s))
- Arrive at Hobuck Rd. & Cape Flattery Rd., Sekiu, WA, 98381, on the left

Site Lat/Long:	N 48° 19.444' / W 124° 39.417', Sector Map OC-2
Strategy Objective:	Exclusion, Diversion - keep oil out of marsh along bank, and in the main channel for collection further upstream.
Implementation:	Deploy boom along the west side of the river so that tides do not force oil into the marsh along the bank.
Site Safety Note:	High traffic area, take appropriate precautions. Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Tribal guide required.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Neah Bay to just before Makah Tribal office complex, left across bridge, to site about 1/2 mi. past Bahobohosh Point curve. Access to west side of river on private road.
Resources Targeted:	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources, sensitive habitat
Fixed Anchors:	44: N 48° 19.486' / W 124° 39.424', North bank near the start of the first bend in the river - adjust as needed
Watercourse Description:	River with tidal influence, large river with strong flow most of the year, Field Visit Width ~ 300ft, mud, gravel, rock



Suggested Equipment	
Quantity	Description
700 ft	B3 - River Boom, or other appropriate type
8 each	Stake(s)
Suggested Personnel	
4	Laborer (s)

Status: Visited and Not Tested 07/26/2007

Sooes River Anchor point for deflection boom along N bank



N 48.524319° W 124.656767° SE WGS 84 07/26/2007 12:32:10 PM

Image-894: Anchor point for deflection boom along N bank

Sooes River Upper marsh to deflect spill away from

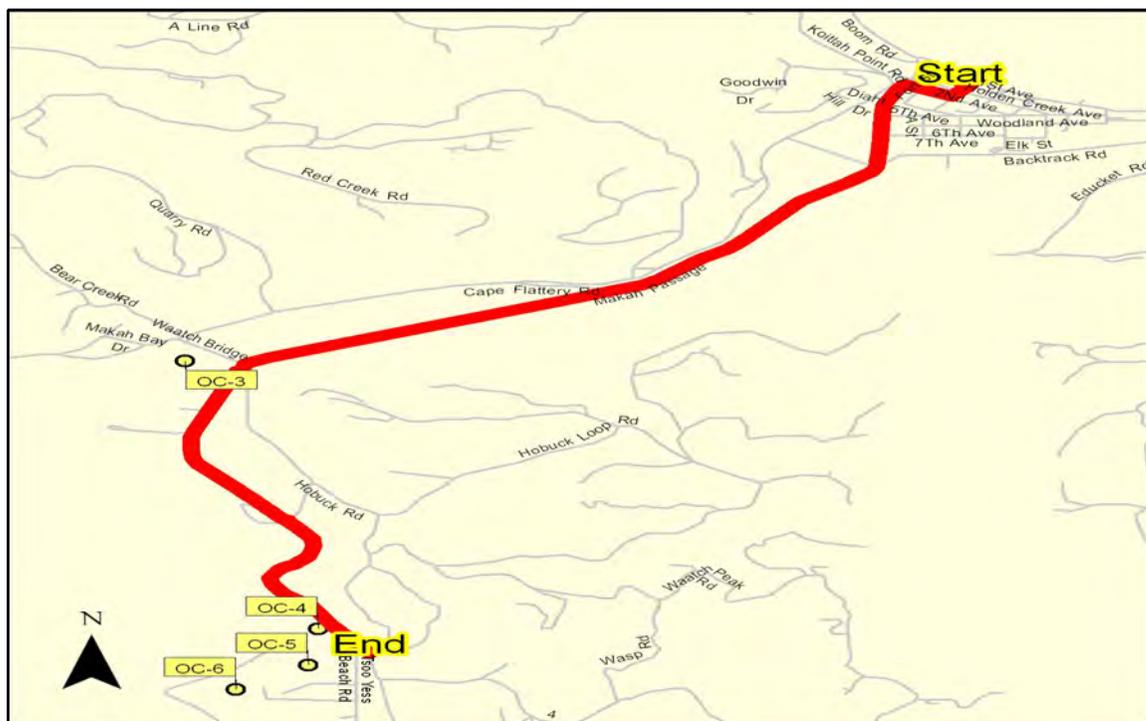


N 48.520117° W 124.657397° N WGS 84 07/26/2007 12:52:49 PM

Image-895: Sooes Upper marsh to deflect spill away from

Site Contact Information

High Priority - contact immediate or before entering:
 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact
 MAKAH TRIBE, (W) 360 645-2701



Closest Address:

Makah PSGE & TSOO Yess Beach Rd., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.13 Mile(s))
 4. Turn left on Makah Indian Res Rd (1.39 Mile(s))
 5. Continue on Makah Psge (2.75 Mile(s))
- Arrive at Makah PSGE & TSOO Yess Beach Rd., Sekiu, WA, 98381, on the right

Site Lat/Long:	N 48° 19.282' / W 124° 39.450', Sector Map OC-2
Strategy Objective:	Exclusion - keep oil out of marsh
Implementation:	Deploy boom to enclose the marsh area along the bank of the river.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Poor footing can lead to slips and trips. Tribal guide required.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Neah Bay to just before Makah Tribal office complex, left across bridge, to site about 3/4 mi. past Bahobohosh Point curve. Access to southwest end on private road.
Resources Targeted:	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources, sensitive habitat
Fixed Anchors:	45: N 48° 19.386' / W 124° 39.358', downstream anchor point for marsh - adjust as needed
Watercourse Description:	River with tidal influence

Suggested Equipment

Quantity	Description
1200 ft	B3 - River Boom, or other appropriate type
15 each	Stake(s)

Suggested Personnel

6	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 07/26/2007



Sooes River Upper marsh to deflect spill away from



N 48.520117° W 124.657397° WGS 84 07/26/2007 12:52:49 PM

Image-896: Sooes marsh area.

Sooes River Collection site in clearing on far west bank



N 48.520117° W 124.657397° WGS 84 07/26/2007 12:52:33 PM

Image-897: Marsh area in foreground, collection site in background

Site Contact Information

High Priority - contact immediate or before entering:
 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact
 MAKAH TRIBE, (W) 360 645-2701



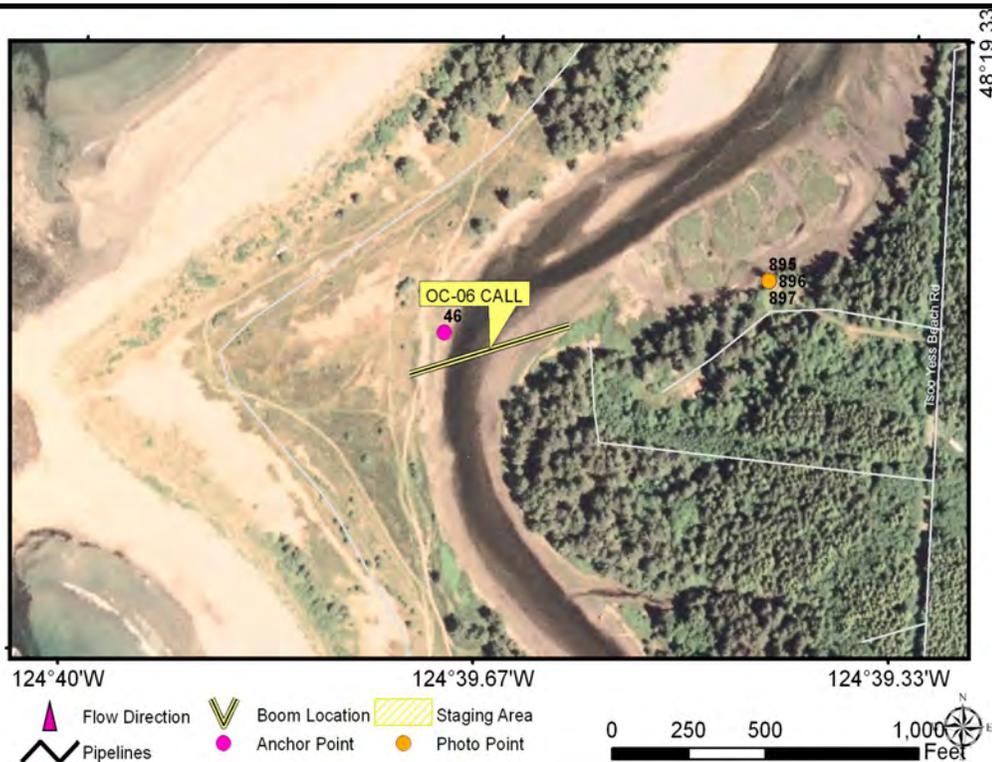
Closest Address:

Makah PSGE & TSOO Yess Beach Rd., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.13 Mile(s))
 4. Turn left on Makah Indian Res Rd (1.39 Mile(s))
 5. Continue on Makah Psge (2.75 Mile(s))
- Arrive at Makah PSGE & TSOO Yess Beach Rd., Sekiu, WA, 98381, on the right

Site Lat/Long:	N 48° 19.165' / W 124° 39.665', Sector Map OC-2
Strategy Objective:	Collection - use tides and natural eddy to assist with collection at the location.
Implementation:	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Under most conditions a Vac truck could access the west bank by back road. Tribal guide required.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat. Take fast water precautions depending on flow. Tribal guide required.
Staging Area:	Waatch River Bridge, OC-03-staging
Field Notes:	SR 112 to Neah Bay to just before Makah Tribal office complex, left across bridge, take right fork at quarry for approx. 3/4 mile, cross Sooes River bridge and continue west to sand dunes.
Resources Targeted:	waterfowl, shorebirds, salmonids (anadromous), tribal lands/resources
Fixed Anchors:	46: N 48° 19.172' / W 124° 39.702', west bank anchor point, adjust as needed
Watercourse Description:	River with tidal influence, high flow most of the year, Field Visit Width ~ 300ft,



Suggested Equipment	
Quantity	Description
3 each	Anchor(s) for strong currents - ie. SARCA
400 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
6 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
4	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 07/26/2007

Sooes River Collection site in clearing on far west bank



N 48.522658° W 124.655500° W WGS 84 07/26/2007 12:41:18 PM

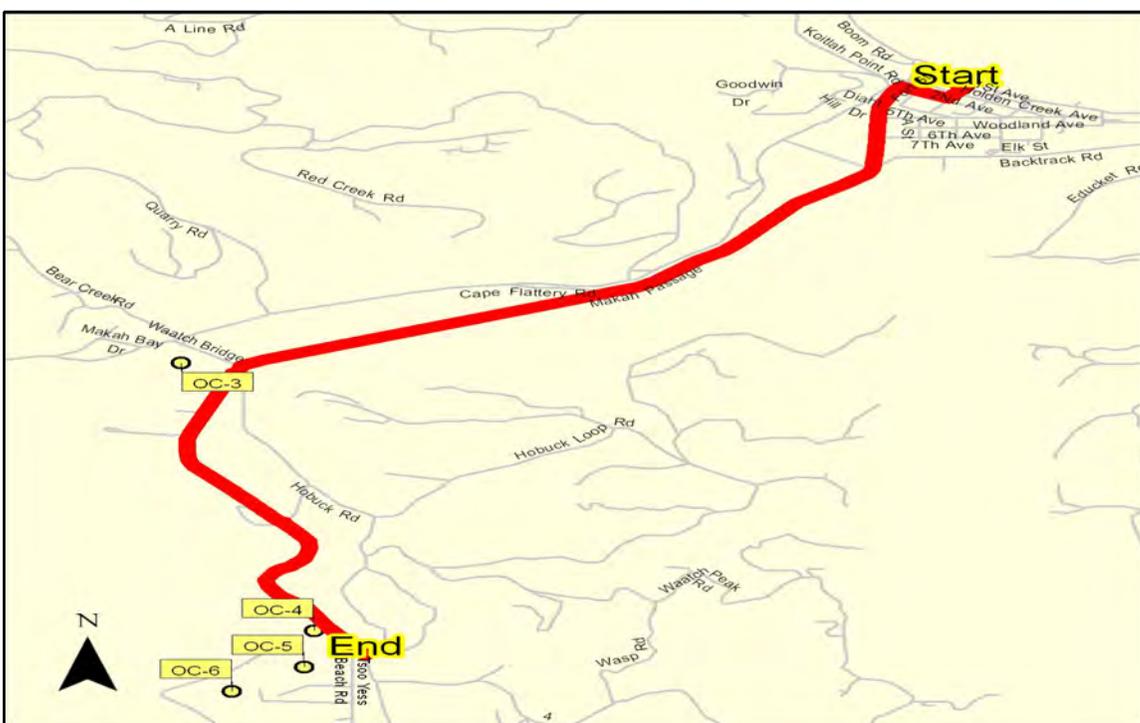
Image-898: Collection site in clearing on far west bank



Image-1064: Sooes collection overview

Site Contact Information

High Priority - contact immediate or before entering:
 Lloyd Lee, Makah Tribal Police, (H) 360 645-2701, After hours contact
 MAKAH TRIBE, (W) 360 645-2701



Closest Address:

Makah PSGE & TSOO Yess Beach Rd., Sekiu, 98381

Driving Directions:

- Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
 2. Make sharp right on Washington St (0.08 Mile(s))
 3. Turn right on SR 112 (HWY 112) (0.13 Mile(s))
 4. Turn left on Makah Indian Res Rd (1.39 Mile(s))
 5. Continue on Makah Psge (2.75 Mile(s))
- Arrive at Makah PSGE & TSOO Yess Beach Rd., Sekiu, WA, 98381, on the right

Site Lat/Long:	N 48° 10.874' / W 124° 42.551', Sector Map OC-3
Strategy Objective:	Exclusion - keep oil out of Ozette River
Implementation:	Put in two strategies, one close to the mouth, one further upstream. Boom across at angle as conditions call for. All recovery equip. must be air transportable. Good anchors on the south side (tree stumps) but only drift logs on the north side. Anchors on the north side will require long lengths of line (about 500 feet). Small boat or fly fishing tube required to get worker across the river. Minimum two workers, self supported for minimum 48 hours in poor weather conditions. No cell phone coverage, radio required.
Site Safety Note:	This strategy is 100% helo dependent. Emergency exit, cross river to south, around Cape Alava and 3.1 mile hike on the boardwalk. Beware of incoming tides.
Staging Area:	Staging Area Forks Airport, OC-Forks AP-staging
Field Notes:	Mouth has not changed in recent past. Helo transport dependent on fog and low tide to land equipment and personnel. No roads and very strenuous walk which is tide dependent.
Resources Targeted:	public lands/facilities, salmonids (anadromous), tribal lands/resources, shellfish
Fixed Anchors:	47: N 48° 10.891' / W 124° 42.488', near mouth, adjust as needed
Watercourse Description:	River with tidal influence, Flow highly variable, Field Visit Width ~ 50ft, sand, mud, gravel



Suggested Equipment

Quantity	Description
500 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
300 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)

Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 08/15/2007

Ozette River View upstream



N 48.181742° W 124.708789° 0° WGS 84 08/15/2007 12:07:24 PM

Image-901: Ozette River

Ozette River View of mouth Ozette, about 50 feet at time of visit

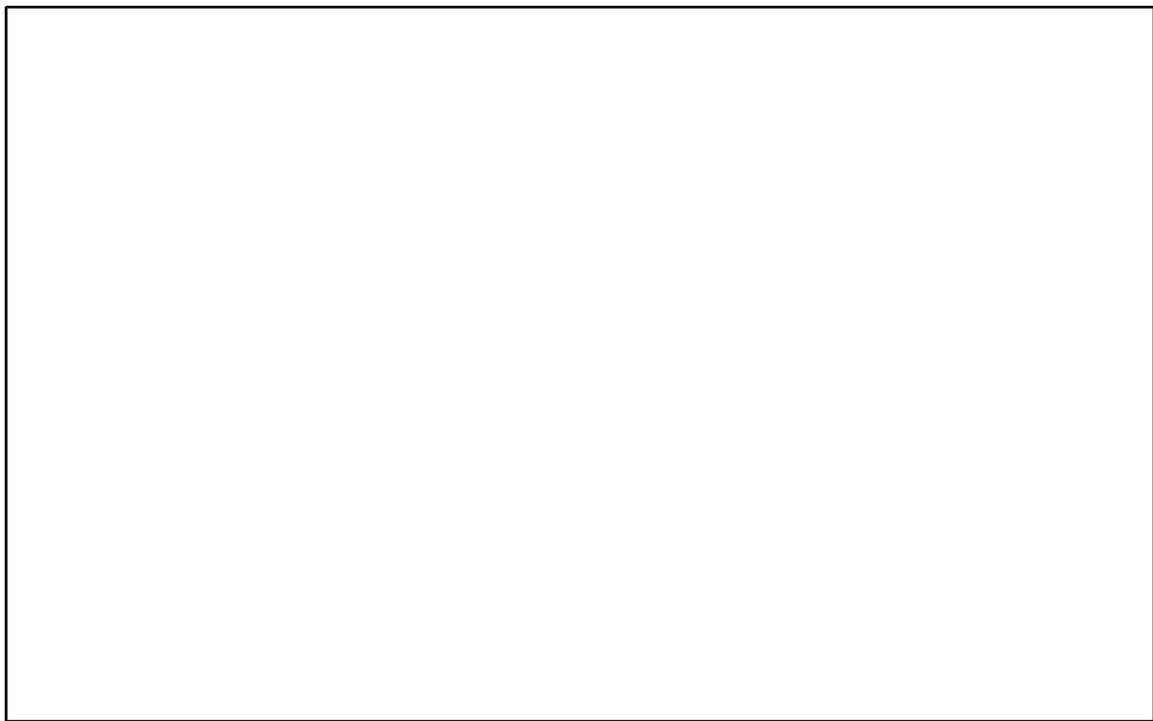


N 48.181481° W 124.708736° 0° WGS 84 08/15/2007 12:06:44 PM

Image-900: View of mouth Ozette, about 50 feet at time of visit

Site Contact Information

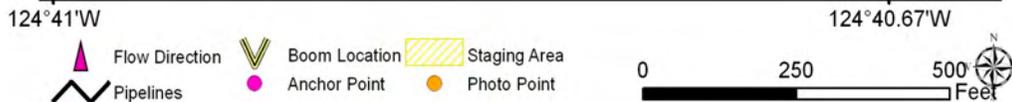
High Priority - contact immediate or before entering:
Olympic National Park Dispatch,
(W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger



Closest Address:
Olympic National Park, Sekiu, 98381

Driving Directions:
Cannot Drive to Site

Site Lat/Long:	N 48° 1.139' / W 124° 40.833', Sector Map OC-5
Strategy Objective:	Exclusion - keep oil out of Cedar Creek
Implementation:	Deploy boom at an angle across the creek as weather permits. Pool behind logs during winter. Flow generally less during summer. All recovery equipment must be air transportable. There are plenty of trees and drift logs for shore anchors on both sides of the stream. Sorbent boom will be useful for stuffing gaps caused by logs.
Site Safety Note:	This strategy is 100% helo dependent. Helo transport dependent on fog and low tide to land equipment and personnel.
Staging Area:	Staging Area Forks Airport, OC-Forks AP-staging
Field Notes:	This site should be checked for log conditions prior to dispatching equipment and personnel.
Resources Targeted:	public lands/facilities, salmonids (anadromous), sensitive habitat
Fixed Anchors:	48: N 48° 1.121' / W 124° 40.767', adjust as needed
Watercourse Description:	Creek, small creek, with lots of logs, Field Visit Width ~ 100ft, mud, sand, gravel, logs



Suggested Equipment	
Quantity	Description
200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
100 ft	B3 - River Boom, or other appropriate type
100 ft	Sorbent Boom
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 08/16/2007

Cedar Creek Ozette

First pool

Cedar Creek Ozette

suggested anchor points



N 48.018267° W 124.679339° SE WGS 84 08/16/2007 11:10:29 AM

N 48.018189° W 124.678894° N WGS 84 08/16/2007 11:15:56 AM

Image-902: Cedar Creek Ozette

Image-903: Cedar Creek Ozette

Site Contact Information

High Priority - contact immediate or before entering:
Olympic National Park Dispatch,
(W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger

Closest Address:

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 55.139' / W 124° 38.225', Sector Map OC-6
Strategy Objective:	Collection - collect oil that strong tides would bring into mouth of river.
Implementation:	Boom to be deployed in the large bend in the river in front of the parking area for Rialto beach. Vac. truck can park at Rialto Beach (on opposite side of river in relation to La Push marina). Will require truck to have 300ft of hose. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	High traffic area, take appropriate precautions. Take fast water precautions depending on flow.
Staging Area:	Staging Area Quillayute River C.G., OC-Quillayute-staging
Field Notes:	Vacuum truck can park at Rialto Beach (on opposite side of river in relation to La Push marina). Will require truck to have 300ft of hose.
Resources Targeted:	marine birds, public lands/facilities - National Park Service lands., tribal lands/resources, salmonids (anadromous), shorebirds
Fixed Anchors:	61: N 47° 55.162' / W 124° 38.226', Water Depth 0ft, north bank, near parking area, adjust as needed
Watercourse Description:	River with tidal influence, flow highly variable, Field Visit Width ~ 500ft, Field Visit Depth ~ 15ft, rock, sand, logs



 Flow Direction
  Boom Location
  Staging Area
 Pipelines
  Anchor Point
  Photo Point



Suggested Equipment	
Quantity	Description
200 ft	1/2 poly line
500 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)
8 each	Stake(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/08/2007

OC 08082007 General area for collection in e of Rialto beach overflow parking



N 47.919183° W 124.637158° NE WGS 84 08/08/2007 12:59:04 PM

Image-930: Collection east of Rialto beach overflow parking

OC 08082007 General area for collection in e of Rialto beach overflow parking

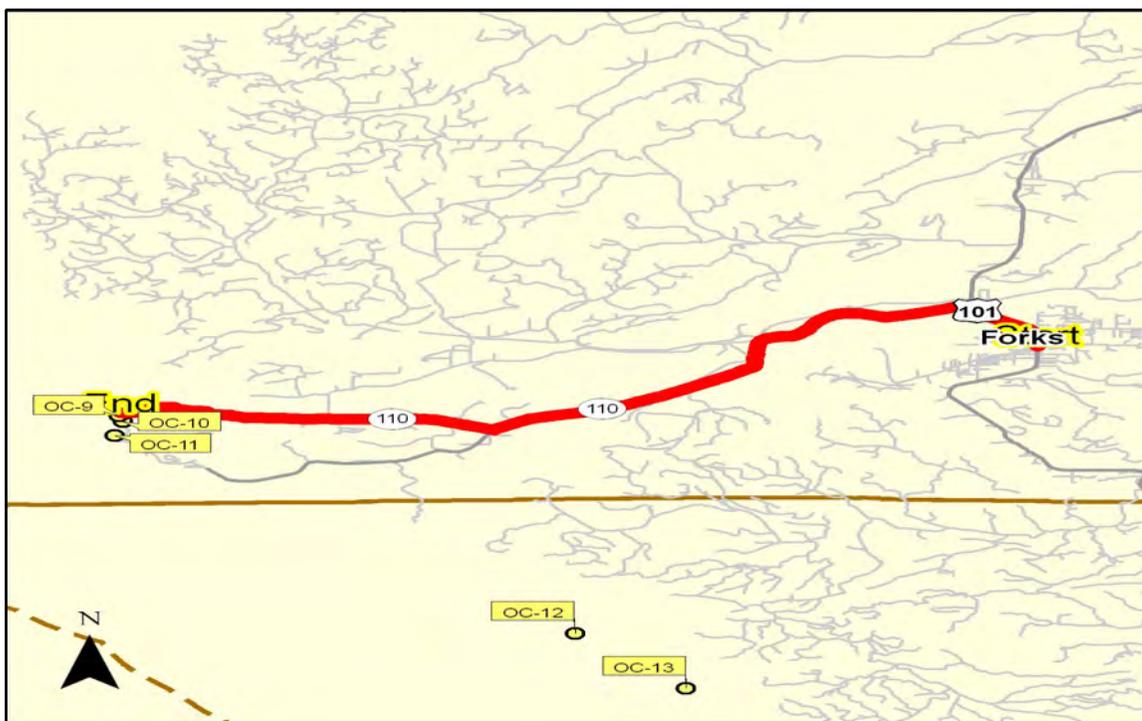


N 47.919239° W 124.637219° E WGS 84 08/08/2007 12:57:02 PM

Image-929: Upstream view - Rialto beach overflow parking

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUILEUTE TRIBE, (W) 360 374-9020
 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger



Closest Address:

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) toward A St SW/A St (0.04 Mile(s))
 2. Make U-turn at A St SW/A St and go back on US 101 (S Forks Ave) (1.58 Mile(s))
 3. Turn left on SR 110 (La Push Rd) (7.79 Mile(s))
 4. Turn right on Mora Rd (4.95 Mile(s))
- Arrive at Point (N 47° 55.139' / W 124° 38.225'), on the right

Site Lat/Long:	N 47° 54.967' / W 124° 38.235', Sector Map OC-6
Strategy Objective:	Exclusion - keep oil out of side channels and in main channel of Quillayute River for collection further upstream
Implementation:	Use boom to keep oil from going up the side channels, use the middle spit as anchor point, and put other anchors in as needed to maintain boom angle.
Site Safety Note:	Fast water precautions, watch for dead-heads, and other shallow water obstructions.
Staging Area:	Staging Area Quillayute River C.G., OC-Quillayute-staging
Field Notes:	Follow road in front of Coast Guard station to dead end.
Resources Targeted:	marine birds, salmonids (anadromous), sensitive habitat, public lands/facilities, tribal lands/resources
Fixed Anchors:	134: N 47° 54.903' / W 124° 38.171', Water Depth 0ft, Southernmost anchor point near end of road in front of Coast Guard Station.
Watercourse Description:	River with tidal influence



Suggested Equipment	
Quantity	Description
1000 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
12 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Tested 08/08/2007

OC 08082007 View showing both side channels and grassy spit



N 47.915085° W 124.635508° N WGS 84 08/08/2007 10:59:26 AM

Image-886: View showing both side channels and grassy spit

OC 08082007 First Side Channel Quillayute River from end of road



N 47.915092° W 124.635914° NW WGS 84 08/08/2007 7:31:26 AM

Image-961: First Side Channel Quillayute River from end of road

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUILEUTE TRIBE, (W) 360 374-9020
 USCG - Quillayute River, (W) 360 374-6469



Closest Address:

Quileute St., Forks, 98331

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) toward A St SW/A St (0.04 Mile(s))
 2. Make U-turn at A St SW/A St and go back on US 101 (S Forks Ave) (1.58 Mile(s))
 3. Turn left on SR 110 (La Push Rd) (13.87 Mile(s))
 4. Make sharp right on Alder St (0.06 Mile(s))
 5. Turn left on Church Rd (0.06 Mile(s))
- Arrive at Quileute St., Forks, WA, 98331, on the right

Site Lat/Long:	N 47° 54.581' / W 124° 38.427', Sector Map OC-6
Strategy Objective:	Exclusion - keep oil out of Quillayute River
Implementation:	Use marina breakwater and boom to keep oil in main channel until it reaches large bend on far north shore. As appropriate, boom can/will be deployed across mouth of marina. Must be tended to allow for traffic. Most important during flood tides.
Site Safety Note:	Currents and tides can be extreme - watch for dead-heads and other shallow water obstructions -
Staging Area:	Staging Area Quillayute River C.G., OC-Quillayute-staging
Field Notes:	West on La Push Road (highway 110), continue west in La Push to USCG. Consider local knowledge from gill netters in area.
Resources Targeted:	public lands/facilities, salmonids (anadromous), marine birds, sensitive habitat, tribal lands/resources
Fixed Anchors:	135: N 47° 54.619' / W 124° 38.275', Water Depth 0ft, breakwater corner for marina entrance, adjust as needed
Watercourse Description:	River with tidal influence, large river, tides and currents can be extreme - watch for logs, Field Visit Width ~ 800ft, gravel, sand

Suggested Equipment

Quantity	Description
200 ft	B3 - River Boom, or other appropriate type

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Tested 08/08/2007



Flow Direction
 Boom Location
 Staging Area
 Pipelines
 Anchor Point
 Photo Point

0 250 500 1,000 Feet

OC 08082007

Mouth of marina Quillayute River, La Push



N 47.910183° W 124.637583° WGS 84 08/08/2007 7:48:53 AM

Image-904: Marina Mouth

OC 08082007 north attachment point Mouth of marina Quillayute River, La Push



N 47.910589° W 124.637444° WGS 84 08/08/2007 8:05:47 AM

Image-905: North attachment point

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUILEUTE TRIBE, (W) 360 374-9020
 USCG - Quillayute River, (W) 360 374-6469



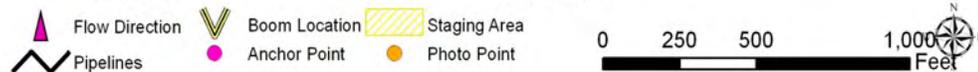
Closest Address:

Coast Guard Rd., Forks, 98331

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) toward A St SW/A St (0.04 Mile(s))
 2. Make U-turn at A St SW/A St and go back on US 101 (S Forks Ave) (1.58 Mile(s))
 3. Turn left on SR 110 (La Push Rd) (13.87 Mile(s))
 4. Bear left on Coast Guard Rd (0.1 Mile(s))
- Arrive at Coast Guard Rd., Forks, WA, 98331, on the right

Site Lat/Long:	N 47° 49.385' / W 124° 30.724', Sector Map OC-7
Strategy Objective:	Exclusion - keep oil out of Goodman Creek
Implementation:	Deploy boom at an angle across the creek somewhat upstream from mouth. Use anchors and lines as needed to maintain an effective angle. Tidal influence extends about 1/3 mile upstream. Need skiff.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Only accessible by helo at low tides. When using helo be sure to have eye and ear protection.
Staging Area:	Staging Area Forks Airport, OC-Forks AP-staging
Field Notes:	Only accessible by helo, can land on southern beach at low tides. There are old logging roads in area, but should not be dependent on them. Would require park guide, to use roads.
Resources Targeted:	public lands/facilities, salmonids (anadromous)
Fixed Anchors:	52: N 47° 49.393' / W 124° 30.744', North bank, adjust as needed
Watercourse Description:	Creek, with relatively deep channel, Field Visit Width ~ 120ft,



Suggested Equipment

Quantity	Description
100 ft	1/2 poly line
200 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: Not Visited 08/08/2007

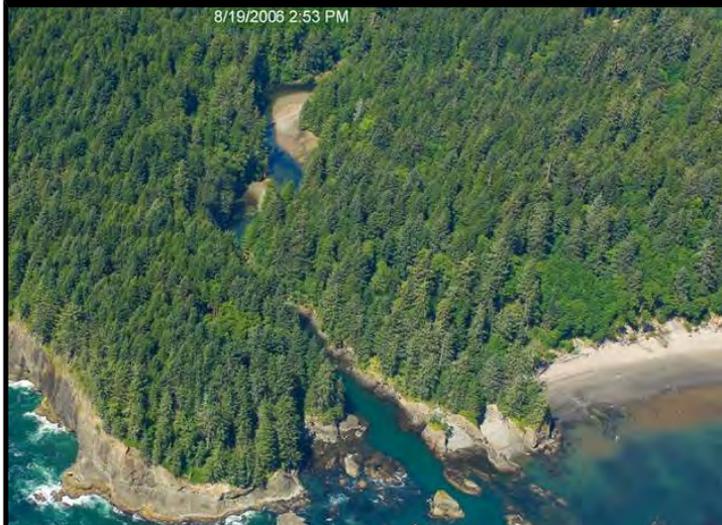


Image-911: Goodman Creek - Helo

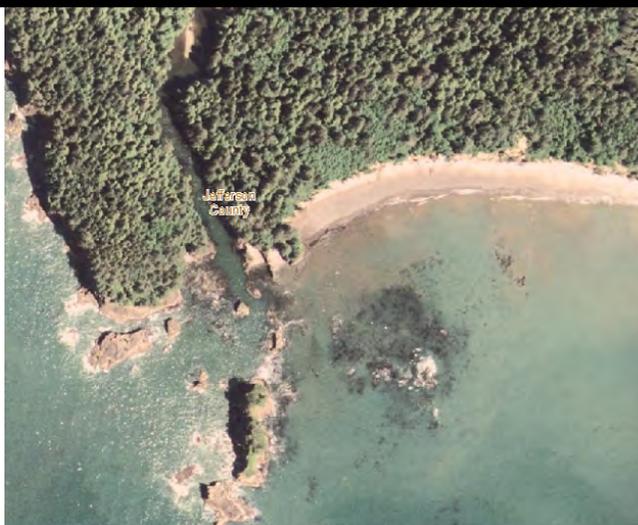


Image-912: Goodman Creek - orthoquad

Site Contact Information

High Priority - contact immediate or before entering:
Olympic National Park Dispatch,
(W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger

Closest Address:

98331

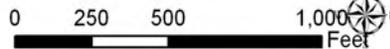
Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 47.913' / W 124° 28.932', Sector Map OC-7
Strategy Objective:	Exclusion - keep oil out of Mosquito Creek
Implementation:	Only accessible by helo. Deploy boom across the creek as close to the mouth as possible, as weather permits. The actual location will be dependent on real time conditions, adjust as needed. A log jam typically forms at the mouth in the winter with a pool behind it. If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Only accessible by helo. When using helo be sure to have eye and ear protection.
Staging Area:	Staging Area Forks Airport, OC-Forks AP-staging
Field Notes:	Via helicopter (not accessible in winter at high tide) or see NPS for logging road access.
Resources Targeted:	public lands/facilities - National Park Service Lands, salmonids (anadromous) - Coho, winter steel head
Fixed Anchors:	51: N 47° 47.961' / W 124° 28.874', north bank, adjust as needed
Watercourse Description:	Creek, smaller creek, with pools upstream, Field Visit Width ~ 50ft, sand, gravel



 Flow Direction
  Boom Location
  Staging Area
 Pipelines
  Anchor Point
  Photo Point



Suggested Equipment	
Quantity	Description
100 ft	1/2 poly line
200 ft	B3 - River Boom, or other appropriate type
400 ft	Snare Boom
8 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Not Visited 08/08/2007



Image-910: Orthoquad shot



Image-909: Shot from Helo

Site Contact Information

High Priority - contact immediate or before entering:
Olympic National Park Dispatch,
(W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger

Closest Address:

98331

Driving Directions:

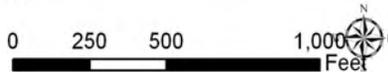
Cannot Drive to Site

Site Lat/Long:	N 47° 45.009' / W 124° 26.089', Sector Map OC-7
Strategy Objective:	Deflection - direct oil toward south shore for collection.
Implementation:	Recommend real time assessment for on scene conditions prior to personnel and equipment deployment. Anchor along north bank just east of mouth of river to help direct oil toward collection boom area. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Take fast water precautions depending on flow.
Staging Area:	Hoh River, OC-15-staging
Field Notes:	Recommend real time assessment for on scene conditions prior to personnel and equipment deployment. Tribal guide required.
Resources Targeted:	shorebirds, salmonids (anadromous), public lands/facilities, marine birds, tribal lands/resources, shellfish, shellfish
Fixed Anchors:	60: N 47° 45.045' / W 124° 26.124', Water Depth 0ft, north bank, adjust as needed
Watercourse Description:	River with tidal influence, extremely dynamic, flow highly variable, Field Visit Width ~ 400ft, Field Visit Depth ~ 25ft, cobble, rock, logs

Suggested Equipment

Quantity	Description
100 ft	1/2 poly line
500 ft	B3 - River Boom, or other appropriate type
1 each	In-line Anchor(s)
1 each	Jon Boat(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited and tested 04/14/2007



Hoh River View across primary collection area



N 47.748631° W 124.432103° N WGS 84 08/14/2007 2:22:55 PM

Image-928: Hoh River View across primary collection area

Hoh River Parking Area near mouth

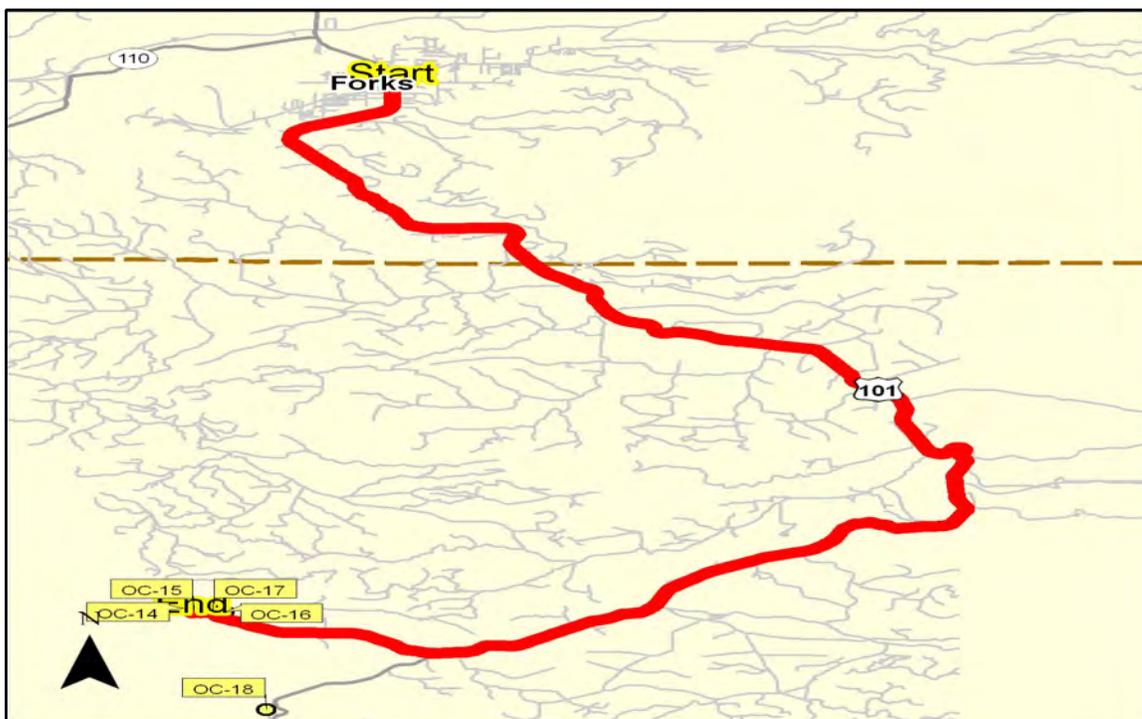


N 47.748386° W 124.432122° NW WGS 84 08/14/2007 1:46:53 PM

Image-927: Hoh River Parking Area near mouth

Site Contact Information

High Priority - contact immediate or before entering:
Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223

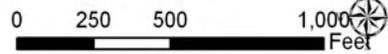


Closest Address:

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
 2. Bear right on Lower Hoh Rd (3.05 Mile(s))
- Arrive at Point (N 47° 45.009' / W 124° 26.089'), on the right

Site Lat/Long:	N 47° 44.963' / W 124° 25.802', Sector Map OC-7
Strategy Objective:	Collection - use tides to collect oil near road on south bank to keep oil out of upper stretch of Hoh River.
Implementation:	The mouth of the Hoh is very dynamic, moving every couple of years. Depending on on scene conditions, collection strategy as close to mouth as possible. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Beware of submerged logs, take fast water precautions depending on flow.
Staging Area:	Hoh River, OC-15-staging
Field Notes:	Hoh Village road off HWY 101 to Hoh Indian Reservation. Must have tribal guide. Tides and storm surge can make this area very dangerous. At extreme flow this entire area can be underwater.
Resources Targeted:	public lands/facilities, salmonids (anadromous), shorebirds, tribal lands/resources, marine birds, shellfish
Fixed Anchors:	53: N 47° 44.916' / W 124° 25.933', south shore near road, adjust based on real time conditions
Watercourse Description:	River with tidal influence, tidal influence to Oil City, mouth is very dynamic, water is reflected to south shore, Field Visit Width ~ 400ft, cobble, sand, logs



Suggested Equipment

Quantity	Description
500 ft	1/2 poly line
600 ft	B3 - River Boom, or other appropriate type
3 each	Danforth(s)
8 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
4	Laborer (s)

Status: Visited and Not Tested 08/14/2007

Hoh River Parking Area near mouth



N 47.748385° W 124.432122° NW WGS 84 08/14/2007 1:48:53 PM

Image-913: Hoh River Mouth parking

Hoh River View across primary collection area



N 47.748631° W 124.432103° N WGS 84 08/14/2007 2:22:35 PM

Image-914: Hoh River, Collection near mouth

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223
 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger



Closest Address:

2464 Lower Hoh Road, Forks, 98531

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
 2. Bear right on Lower Hoh Rd (1.9 Mile(s))
- Arrive at 2464 Lower Hoh Road, Forks, WA, 98531, on the left

Site Lat/Long:	N 47° 44.923' / W 124° 25.503', Sector Map OC-7
Strategy Objective:	Collection - collect oil which is being pushed upstream by tides.
Implementation:	Anchor boom on north bank, and angle to south bank, with the south bank anchor being located so that a vac truck can collect oil from the dirt road. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Take fast water precautions depending on flow.
Staging Area:	Hoh River, OC-15-staging
Field Notes:	At the junction of Chalaat Creek and the Hoh a collection strategy can be deployed to prevent any upstream migration of product. Dirt road but vac truck accessible.
Resources Targeted:	shorebirds, salmonids (anadromous), tribal lands/resources, marine birds, public lands/facilities, shellfish
Fixed Anchors:	63: N 47° 44.884' / W 124° 24.941', Water Depth 0ft, south bank of Hoh, near dirt road, adjust as needed.
Watercourse Description:	River with tidal influence, dynamic river, with extreme variable flow, Field Visit Width ~ 300ft, rocks, gravel, logs



Suggested Equipment	
Quantity	Description
300 ft	1/2 poly line
2 each	Anchor(s) for strong currents - ie. SARCA
550 ft	B3 - River Boom, or other appropriate type
8 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
4	Laborer (s)

Status: New - visited but not tested 08/14/2007

Hoh River Chahalaat Creek collection area



N 47.748269° W 124.427950° NW WGS 84 08/14/2007 2:31:40 PM

Image-933: Hoh River - upstream collection area, downstream view

Hoh River Chahalaat Creek collection area

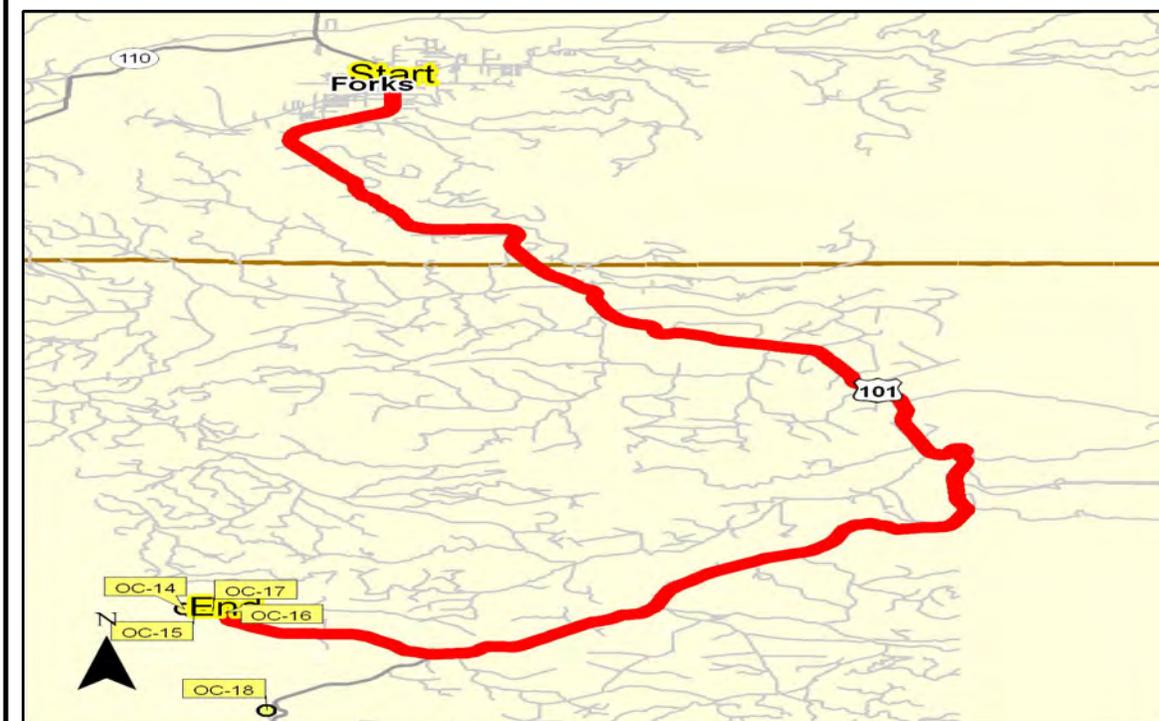


N 47.748542° W 124.427925° N WGS 84 08/14/2007 2:31:51 PM

Image-934: Hoh River, upstream collection, view straight across

Site Contact Information

High Priority - contact immediate or before entering:
Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223
Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger

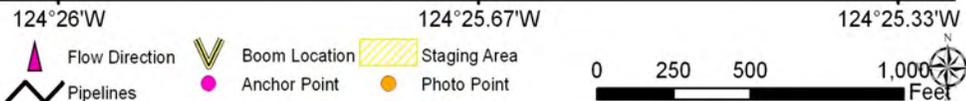


Closest Address:

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
 2. Bear right on Lower Hoh Rd (2.56 Mile(s))
 3. Turn right on Unnamed St (0.17 Mile(s))
- Arrive at Point (N 47° 44.923' / W 124° 25.503'), on the right

Site Lat/Long:	N 47° 44.940' / W 124° 25.678', Sector Map OC-7
Strategy Objective:	Exclusion - keep oil from going up Chalaat Creek
Implementation:	Deploy chevron or use steep angled run of boom across mouth of Chalaat Creek.
Site Safety Note:	Take fast water precautions depending on flow.
Staging Area:	Hoh River, OC-15-staging
Field Notes:	Tribal guide required. The actual location will be dependent on real time conditions, adjust as needed. Bring brush clearing equipment.
Resources Targeted:	salmonids (anadromous)
Fixed Anchors:	62: N 47° 44.898' / W 124° 25.142', Water Depth 0ft, east bank of creek, on the upstream side of the Hoh, adjust as needed
Watercourse Description:	Creek, flow highly variable, Field Visit Width ~ 130ft, Field Visit Depth ~ 6ft, gravel, sand



Suggested Equipment	
Quantity	Description
100 ft	1/2 poly line
300 ft	B3 - River Boom, or other appropriate type
1	Machete
4 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: New - visited but not tested 08/14/2007

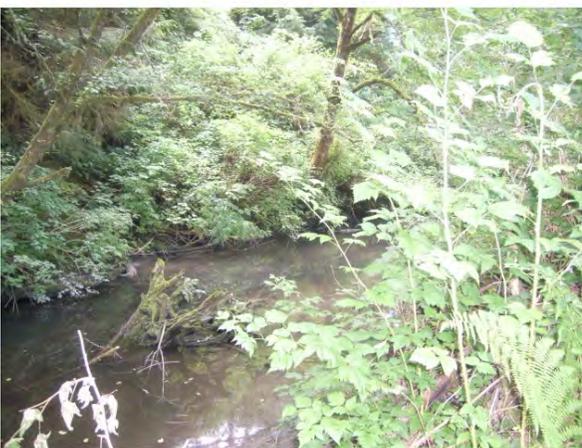
Hoh River Chalaat Creek mouth



N 47.747947° W 124.428358° E WGS 84 08/14/2007 2:43:48 PM

Image-931: Hoh - Chalaat Creek mouth

Hoh River Chalaat Creek upcreek from mouth

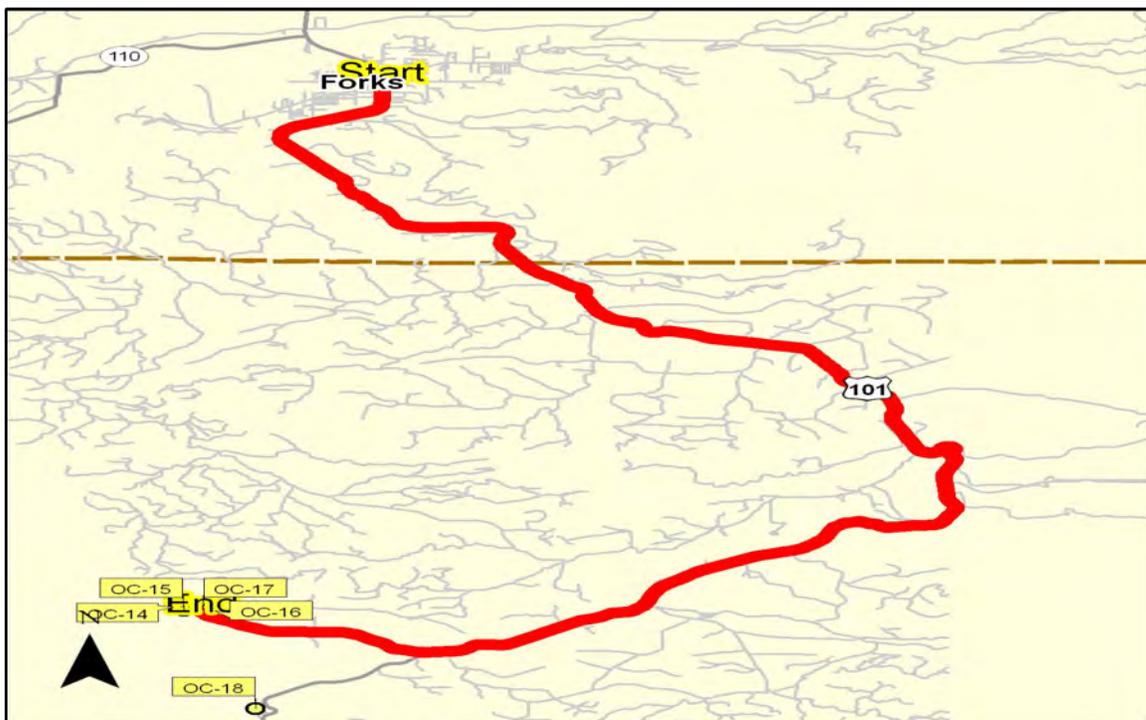


N 47.748492° W 124.427631° SW WGS 84 08/14/2007 2:55:07 PM

Image-932: Hoh, Chalaat Creek upcreek from mouth

Site Contact Information

High Priority - contact immediate or before entering:
Tribe HOH TRIBE, (W) 360/374-6582, (M) 360/374-2223



Closest Address:

Driving Directions:

- Depart Forks
 - 1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
 - 2. Bear right on Lower Hoh Rd (2.82 Mile(s))
- Arrive at Point (N 47° 44.94' / W 124° 25.678'), on the right

Site Lat/Long:	N 47° 42.646' / W 124° 24.991', Sector Map OC-8
Strategy Objective:	Exclusion - keep oil out of Cedar Creek at Ruby beach
Implementation:	Actual location is dependent on real time conditions. Deploy boom at an angle across large pool behind driftwood line (about 1/8 mile above beach). Use anchors and lines as needed to maintain an effective angle. Pool is about 150' across and affected by extreme tidal conditions. If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Poor footing can lead to slips, trips and falls.
Staging Area:	Staging Area Kalaloch Lodge, OC-Kalaloch-staging
Field Notes:	Heavy equipment can access parking area, but trail leading to beach would be limited to ATVs, or pedestrians. Cedar Creek is approx. 20 yds from foot of trail.
Resources Targeted:	public lands/facilities, salmonids (anadromous)
Fixed Anchors:	54: N 47° 42.649' / W 124° 24.905', Water Depth 2ft, south bank, adjust as needed
Watercourse Description:	Creek, has tidal influence at high tides, highly variable flow, Field Visit Width ~ 150ft, Field Visit Depth ~ 2ft, sand, gravel, logs



Suggested Equipment	
Quantity	Description
50 ft	1/2 poly line
300 ft	B3 - River Boom, or other appropriate type
500 ft	Snare Boom
10 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 05/07/2007



Image-915: Cedar Creek, at Ruby Beach, from trail head



Image-916: Mouth Cedar Creek, at Ruby Beach

Site Contact Information

High Priority - contact immediate or before entering:
 Kalaloch Lodge, (W) 866.525.2562, provide real time information about conditions
 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger



Closest Address:

US 101 & Lower Hoh Rd., Forks, 98331

Driving Directions:

Depart Forks
 1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
 Arrive at US 101 & Lower Hoh Rd., Forks, WA, 98331, on the right

Site Lat/Long:	N 47° 36.526' / W 124° 22.346', Sector Map OC-9
Strategy Objective:	Exclusion - keep oil from going upstream, use bridge access for VAC truck for collection condition
Implementation:	Deploy boom from the bank at the SE corner of the bridge at an angle to the tidal push. Should be able to use bridge and lines to get boom on other side of creek. Use anchors and lines as needed to maintain an effective angle. Use bridge access for VAC truck for collection - will need about 150 of collection hose.
Site Safety Note:	High traffic area, take appropriate precautions. Poor footing can lead to slips, trips and falls.
Staging Area:	Staging Area Kalaloch Lodge, OC-Kalaloch-staging
Field Notes:	Easier access from SE corner of bridge. Bring brush clearing equipment.
Resources Targeted:	public lands/facilities, salmonids (anadromous)
Fixed Anchors:	50: N 47° 36.521' / W 124° 22.337', Water Depth 4ft, near SE corner of bridge, adjust as needed
Watercourse Description:	Creek, upper stretch, width and flow variable, Field Visit Width ~ 85ft, Field Visit Depth ~ 4ft, gravel, sand

Suggested Equipment

Quantity	Description
100 ft	B3 - River Boom, or other appropriate type
1 each	Vac Truck(s)

Suggested Personnel

2	Laborer (s)
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Status: New - visited but not tested 05/07/2007



Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines

0 250 500 Feet



Site Contact Information

High Priority - contact immediate or before entering:
Kalaloch Lodge, (W)
866.525.2562, provide real time information about conditions
Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger

Image-907: Kalaloch Creek Bridge

Image-908: Kalaloch Creek Upstream from bridge

Closest Address:

Driving Directions:

Depart Forks
1. Go South on US 101 (S Forks Ave) (34.11 Mile(s))
Arrive at Point (N 47° 36.526' / W 124° 22.346'), on the right



Site Lat/Long:	N 47° 36.364' / W 124° 22.469', Sector Map OC-9
Strategy Objective:	Exclusion - keep oil out of Kalaloch Creek
Implementation:	Deploy boom at an angle across the mouth of the creek. The actual location will be dependent on real time conditions, adjust as needed. - note under most conditions will need to be move strategy upstream. The lower beach location requires about 300 feet of boom the upper about 400feet. If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Ever changing river mouth with high surf at times.
Staging Area:	Staging Area Kalaloch Lodge, OC-Kalaloch-staging
Field Notes:	Caution - sensitive site at mouth. Poor cell phone coverage, pay phone by store and in the lodge. Lodge also has accomodations, restaurant, and bathroom. Small store and gas station also present.
Resources Targeted:	salmonids (anadromous), sensitive habitat
Fixed Anchors:	40: N 47° 36.333' / W 124° 22.375', South bank of creek - drift wood and real time conditions may require adjustment of location
Watercourse Description:	River with tidal influence, logs, flow variable, Field Visit Width ~ 60ft, sand, mud, gravel



Suggested Equipment

Quantity	Description
500 ft	1/2 poly line
400 ft	B3 - River Boom, or other appropriate type
4 each	Danforth(s)
600 ft	Snare Boom
12 each	Stake(s)

Suggested Personnel

6	Laborer (s)
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Status: Visited and Tested 05/15/2008



Image-887: Upstream shot - Kalaloch Creek



Image-906: Downstream Kalaloch Creek

Site Contact Information

High Priority - contact immediate or before entering:
 Kalaloch Lodge, (W) 866.525.2562, provide real time information about conditions
 Olympic National Park Dispatch, (W) 360-565-3000x0, Ask for dispatcher to radio an Ozette/Olympic Ranger



Closest Address:

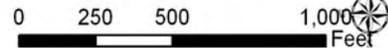
Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (34.34 Mile(s))
 2. Turn right on Unnamed St (0.12 Mile(s))
- Arrive at Point (N 47° 36.364' / W 124° 22.469'), on the left

Site Lat/Long:	N 47° 32.426' / W 124° 21.260', Sector Map OC-9
Strategy Objective:	Exclusion - keep oil out of northern marsh complex.
Implementation:	Place boom across opening channel at an angle to exclude and divert oil from northern marsh complex. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. River can rise about 20 feet from storms, winds can reach 90-100 mph and 40 mph sustained winds is common.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	Local guide required. The mouth of the Queets is very dynamic. Opening to the ocean can change within a season several times.
Resources Targeted:	salmonids (anadromous), sensitive habitat, tribal lands/resources
Fixed Anchors:	64: N 47° 32.442' / W 124° 21.291', Water Depth 0ft, NW corner of channel opening at the time of field visit - adjust as needed
Watercourse Description:	Estuaries, part of old river channel, area is very dynamic, Field Visit Width ~ 200ft, gravel, sand, logs



Flow Direction
 Pipelines
 Boom Location
 Anchor Point
 Staging Area
 Photo Point



Suggested Equipment	
Quantity	Description
100 ft	1/2 poly line
300 ft	B3 - River Boom, or other appropriate type
8 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/14/2007

Queets

Side channel on north bank near mouth

Queets

View of north shore marsh



N 47.540161° W 124.564189° NE WGS 84 08/14/2007 11:08:36 AM

Image-935: Queets - side channel on north bank near mouth

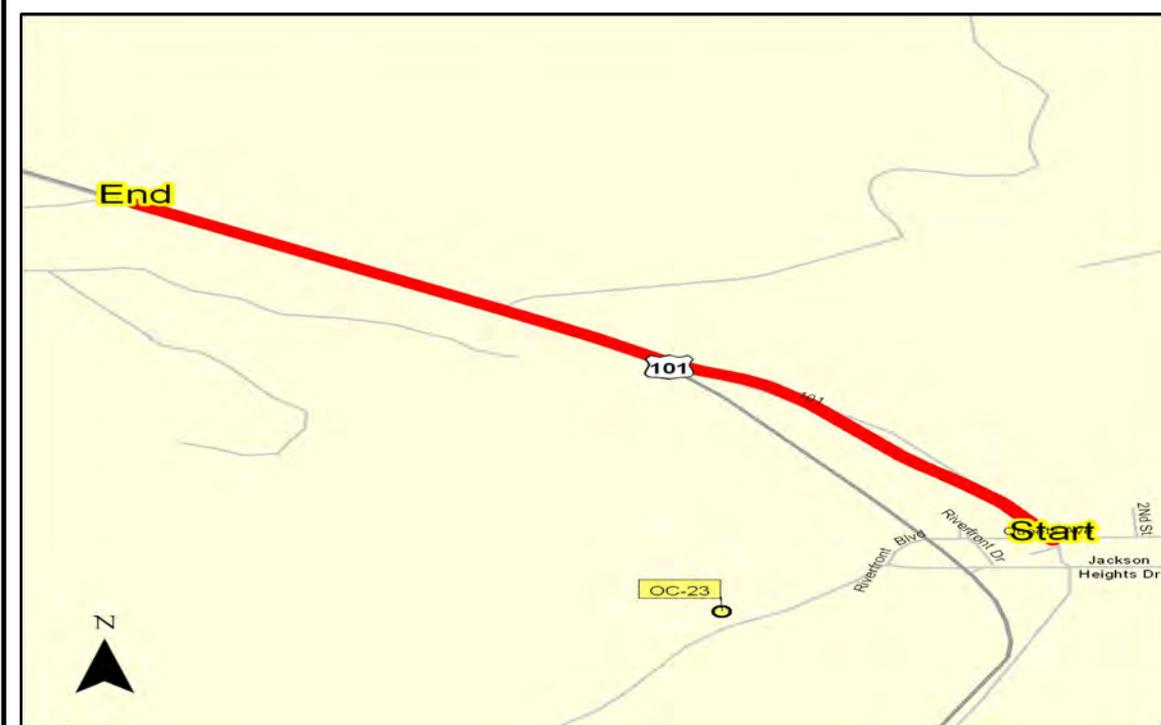


N 47.539483° W 124.563894° E WGS 84 08/14/2007 11:04:09 AM

Image-936: Queets, view of north shore marsh

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211

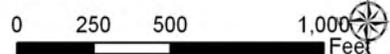
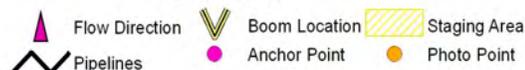


Closest Address:

Driving Directions:

Depart Queets
 1. Go North West on US 101 toward Queets Ave (1.12 Mile (s))
 Arrive at Point (N 47° 32.426' / W 124° 21.26'), on the left

Site Lat/Long:	N 47° 32.284' / W 124° 21.272', Sector Map OC-9
Strategy Objective:	Deflection - keep oil out of marshes along Queets River, note this area is very dynamic adjust as needed
Implementation:	At the time of the visit - there was an opportunity to deflect product originating from the ocean up into the main channel of the river and past the habitat complex to the north. This deflection strategy requires 500 feet of boom and a minimum of 7, 40 pound anchors. If the deflection on the main channel is not feasible then move inside the side channels and attempt to divert into pond for collection.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Beware of submerged logs and shallows. Recommend jet boat. Must have tribal guide.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	The mouth of the Queets is very dynamic. Opening to the ocean can change within a season several times. River can rise about 20 feet during downpours, winds can reach 90-100 mph.
Resources Targeted:	sensitive habitat, salmonids (anadromous), tribal lands/resources
Fixed Anchors:	55: N 47° 32.393' / W 124° 21.256', north sand spit, adjust as needed
Watercourse Description:	River with tidal influence, large extremely dynamic, tidal influence can be up to 101 bridge, Field Visit Width ~ 700ft, Field Visit Depth ~ 20ft, rocks, logs, sand, gravel



Suggested Equipment	
Quantity	Description
7 each	Anchor(s) for strong currents - ie. SARCA
1000 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
10 each	Stake(s)
Suggested Personnel	
2	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 04/14/2007

Queets View of north shore marsh



N 47.539433° W 124.563994° E WGS 84 08/14/2007 11:04:09 AM

Image-917: Queets, north shore marsh

Queets Side channel on north bank near mouth



N 47.540161° W 124.564189° NE WGS 84 08/14/2007 11:08:36 AM

Image-918: Queets, Side channel on north bank near mouth

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

98331

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (39.48 Mile(s))
 2. Make sharp right on Queets Ave (0.1 Mile(s))
 3. Turn left on River Blvd (0.08 Mile(s))
 4. Continue on Unnamed St (0.66 Mile(s))
- Arrive at Point (N 47° 32.284' / W 124° 21.272'), on the left

Site Lat/Long:	N 47° 32.252' / W 124° 20.302', Sector Map OC-9
Strategy Objective:	Collection - use tidal push to collect oil along south bank near boat ramp.
Implementation:	If oil is anticipated to move up the river with a high tide, high wind, high flow event, then a collection strategy at the boat ramp may be feasible. Angle of the boom should meet requirements of on scene conditions. Angle from north bank to south bank near boat ramp. This area is vac truck accessible.
Site Safety Note:	Dirt road with ruts.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	Tribal guide required. This area has Boat ramp and parking area are vac truck accessible. Boat ramp is fine for very small boats. Tribe has their own jet boats with 90 hp engine.
Resources Targeted:	tribal lands/resources, salmonids (anadromous), sensitive habitat
Fixed Anchors:	66: N 47° 32.268' / W 124° 20.231', Water Depth 0ft, south bank, near dirt road, adjust as needed
Watercourse Description:	River with tidal influence, very dynamic river, Field Visit Width ~ 400ft, rock, gravel, mud, sand, logs



Suggested Equipment	
Quantity	Description
150 ft	1/2 poly line
5 each	Anchor(s) for strong currents - ie. SARCA
500 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
6 each	Stake(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/14/2007

Queets Boat ramp, collection area



N 47.536989° W 124.538586° NW WGS 84 08/14/2007 12:28:28 PM

Image-939: Queets, boat ramp, collection area

Queets View from boat ramp, collection point

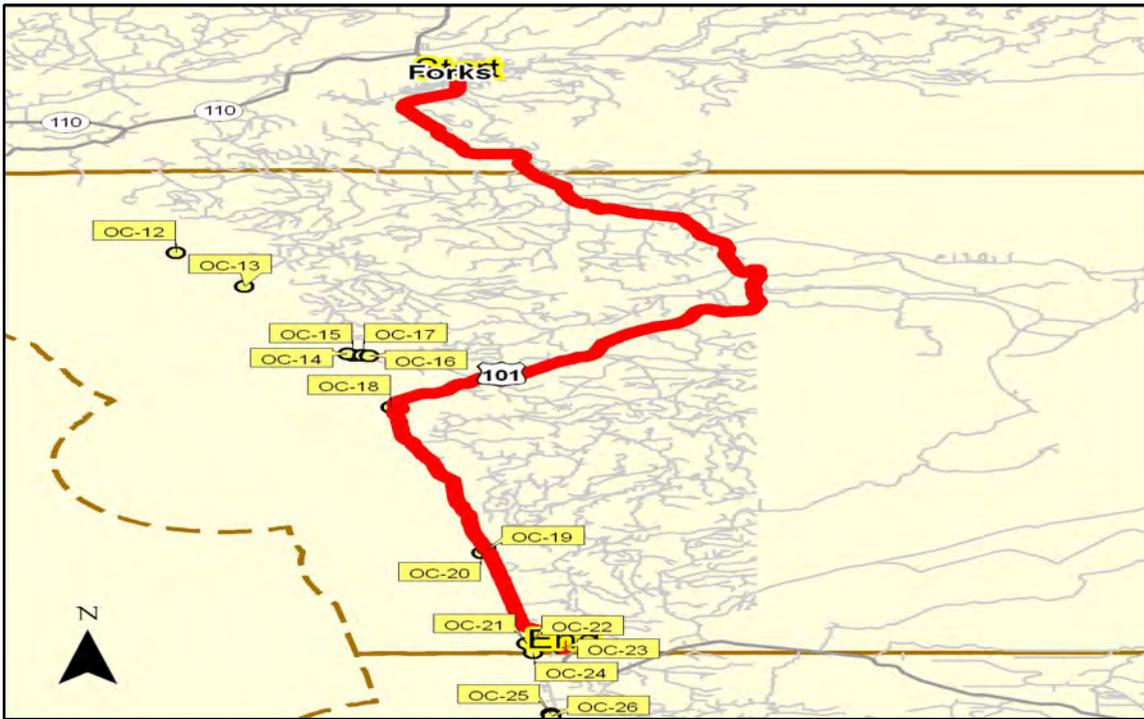


N 47.536914° W 124.538686° NE WGS 84 08/14/2007 12:28:51 PM

Image-940: Queets, view from boat ramp, collection point

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (39.48 Mile(s))
 2. Make sharp right on Queets Ave (0.1 Mile(s))
 3. Turn left on River Blvd (0.08 Mile(s))
 4. Continue on Unnamed St (0.19 Mile(s))
- Arrive at Point (N 47° 32.252' / W 124° 20.302'), on the left

Site Lat/Long:	N 47° 32.024' / W 124° 21.065', Sector Map OC-9
Strategy Objective:	Exclusion - keep oil out of side channel, and divert to main channel for collection upstream
Implementation:	Put boom in chevron configuration, use shore stakes and anchor to insure effective angles.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	Marsh vegetation consists of Potentilla next to river so we assume mostly freshwater makes it up to marsh surface.
Resources Targeted:	sensitive habitat, tribal lands/resources
Fixed Anchors:	65: N 47° 32.005' / W 124° 21.083', Water Depth 0ft, west bank of side channel, adjust as needed
Watercourse Description:	Freshwater wetland, side channel, which feeds southern marsh area, Field Visit Width ~ 50ft, mud, sand



Suggested Equipment	
Quantity	Description
25 ft	1/2 poly line
1 each	Anchor(s) for strong currents - ie. SARCA
100 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
6 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/14/2007

Queets Anchor point for west end of chevron



N 47.533519° W 124.551755° NE WGS 84 08/14/2007 10:34:37 AM

Image-938: Queets side channel, anchor point for west end of chevron

Queets South bank side channel, Audubon



N 47.533186° W 124.551328° S WGS 84 08/14/2007 10:26:44 AM

Image-937: Queets, south bank side channel

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

Driving Directions:

- Depart Forks
1. Go South on US 101 (S Forks Ave) (39.48 Mile(s))
 2. Make sharp right on Queets Ave (0.1 Mile(s))
 3. Turn left on River Blvd (0.08 Mile(s))
 4. Continue on Unnamed St (0.66 Mile(s))
- Arrive at Point (N 47° 32.024' / W 124° 21.065'), on the left

Site Lat/Long:	N 47° 29.324' / W 124° 20.651', Sector Map OC-10
Strategy Objective:	Exclusion - keep oil out of creek
Implementation:	Deploy boom across the mouth of north fork of the creek as close to the mouth as conditions permit. If oil is present, also deploy snare-boom. Must have tribal guide.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area.
Staging Area:	Staging Area South Beach, OC-South Beac-staging
Field Notes:	Via Cape Elizabeth Road. North fork bridge is O.K.; south fork bridge is unsafe. Tribal guide required.
Resources Targeted:	sensitive habitat, salmonids (anadromous), tribal lands/resources
Fixed Anchors:	56: N 47° 29.389' / W 124° 20.596', Water Depth 10ft, south bank, below pool, adjust as needed
Watercourse Description:	Creek, highly variable flow, the fork joins south fork near ocean, Field Visit Width ~ 80ft, Field Visit Depth ~ 8ft, logs, gravel, sand

Suggested Equipment	
Quantity	Description
100 ft	B3 - River Boom, or other appropriate type
200 ft	Snare Boom
4 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 08/13/2007



Whale Creek North fork Whale Creek, view towards mouth



N 47.49031° W 124.34243° WGS 84 08/13/2007 11:55:22 AM

Image-919: North fork Whale Creek, view towards mouth

Whale Creek View across river, lower tide option



N 47.490083° W 124.343053° WGS 84 08/13/2007 12:04:37 PM

Image-920: View across Whale Ck North, lower tide option

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINALT NATION, (W) 360/276-4422, (H) 360/276-8211



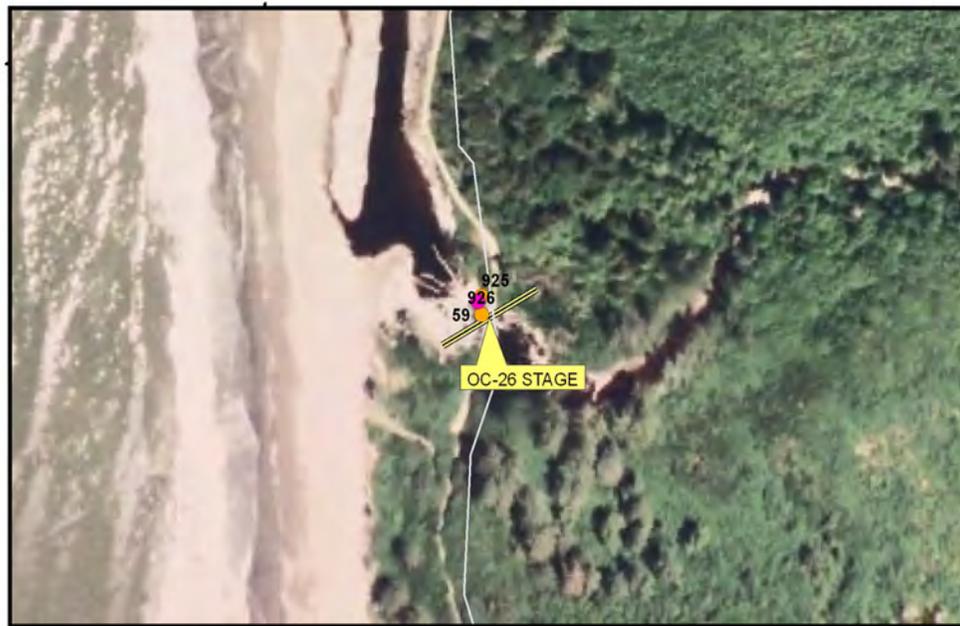
Closest Address:

US 101 & 4700th Rd., Quinalt Indian Reservation, Taholah, 98587

Driving Directions:

Depart Queets
 1. Go South on US 101 toward Jackson Heights Dr (1.58 Mile(s))
 Arrive at US 101 & 4700th Rd., Taholah, WA, 98587, on the right

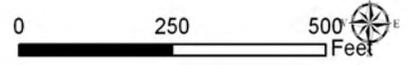
Site Lat/Long:	N 47° 29.274' / W 124° 20.571', Sector Map OC-10
Strategy Objective:	Exclusion - keep oil out of south fork of Whale creek.
Implementation:	Deploy boom across the mouth of south fork of the creek as close to the mouth as conditions permit. If oil is present, also deploy snare-boom. Must have tribal guide.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area.
Staging Area:	Staging Area South Beach, OC-South Beac-staging
Field Notes:	Recommend real time assessment for on scene conditions prior to personnel and equipment deployment. Tribal guide required.
Resources Targeted:	salmonids (anadromous), sensitive habitat, tribal lands/resources
Fixed Anchors:	59: N 47° 29.279' / W 124° 20.577', Water Depth 0ft, north bank near beach, adjust as needed
Watercourse Description:	Creek, mouth can be clogged with logs, flow highly variable, Field Visit Width ~ 30ft, Field Visit Depth ~ 3ft, logs, rocks, cobble, sand



47°29.33'N

124°20.67'W

Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines



Suggested Equipment	
Quantity	Description
100 ft	B3 - River Boom, or other appropriate type
200 ft	Snare Boom
8 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: New - visited but not tested 08/13/2007

Whale Creek South Fork mouth looking east, completely choked with large logs



N 47.488011° W 124.342928° E WGS 84 08/13/2007 11:47:33 AM

Image-925: Whale Ck South Fork mouth looking east, completely choked with large logs

Whale Creek South Fork mouth looking west, completely choked with large logs



N 47.487936° W 124.342925° W WGS 84 08/13/2007 11:47:16 AM

Image-926: Whale Ck South Fork mouth looking west, completely choked with large logs

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

Driving Directions:

- Depart Queets
1. Go South on US 101 toward Jackson Heights Dr (1.12 Mile(s))
 2. Make sharp right on Unnamed St (2.7 Mile(s))
- Arrive at Point (N 47° 29.274' / W 124° 20.571'), on the right

Site Lat/Long:	N 47° 27.769' / W 124° 20.366', Sector Map OC-10
Strategy Objective:	Exclusion - keep oil out of marshes along Raft River
Implementation:	Recommend placing boom parallel to channel along the face of marsh on north bank. If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Thick brush, ruts, and mud can make road impassable. No phone coverage, poor radio coverage.
Staging Area:	Staging Area South Beach, OC-South Beac-staging
Field Notes:	Helicopter preferred; trail access only from road. Trail leading to beach would be limited to ATVs, or pedestrians. Recommend real time assessment prior to personnel and equipment deployment.
Resources Targeted:	marine birds, salmonids (anadromous), sensitive habitat, tribal lands/resources
Fixed Anchors:	57: N 47° 27.779' / W 124° 20.416', Water Depth 0ft, north bank, closest to mouth, adjust as needed
Watercourse Description:	River with tidal influence, good flow year round, tide goes about 1 mile upstream, Field Visit Width ~ 300ft, Field Visit Depth ~ 10ft, gravel, sand, cobble

Suggested Equipment

Quantity	Description
700 ft	B3 - River Boom, or other appropriate type
200 ft	Snare Boom
8 each	Stake(s)

Suggested Personnel

4	Laborer (s)
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Status: Visited and Not Tested 08/13/2007



Raft River Anchor point for marsh on north side



N 47.462885° W 124.341997° E WGS 84 08/13/2007 10:26:19 AM

Image-922: Raft River, Anchor point for marsh on north side

Raft River View up stream, marshes on both sides



N 47.462869° W 124.342025° E WGS 84 08/13/2007 10:26:05 AM

Image-921: Raft River, View up stream, marshes on both sides

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINALT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

US 101 & 4700th Rd., Quinalt Indian Reservation, Taholah, 98587

Driving Directions:

Depart Queets
 1. Go South on US 101 toward Jackson Heights Dr (1.58 Mile(s))
 Arrive at US 101 & 4700th Rd., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 27.704' / W 124° 20.267', Sector Map OC-10
Strategy Objective:	Exclusion - keep oil out of marsh on S bank of Raft River
Implementation:	Summer: Deploy sorbent boom along salt marshes parallel to river (labor-intensive). Winter: Deploy hard boom. River mouth subject to drastic change; substantial flow year-round. Mouth may be natural collection point.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Thick brush, ruts, and mud can make road impassable. No phone coverage, poor radio coverage.
Staging Area:	Staging Area South Beach, OC-South Beach-staging
Field Notes:	Helicopter preferred; trail access only from road. Must have tribal guide.
Resources Targeted:	marine birds, salmonids (anadromous), sensitive habitat, tribal lands/resources
Fixed Anchors:	58: N 47° 27.718' / W 124° 20.408', s bank downstream, adjust as needed
Watercourse Description:	River with tidal influence, good flow all year, Field Visit Width ~ 300ft, Field Visit Depth ~ 10ft, gravel. cobble, sand



Suggested Equipment	
Quantity	Description
1000 ft	B3 - River Boom, or other appropriate type
10 each	Stake(s)
Suggested Personnel	
4	Laborer (s)

Status: Visited and Not Tested 08/13/2007

Raft River View from north bank across to wetlands on south bank



N 47.462658° W 124.538917° S WGS 84 08/13/2007 10:37:12 AM

Image-923: Raft River, View from north bank across to wetlands on south bank

Raft River View up stream, marshes on both sides



N 47.462869° W 124.542025° E WGS 84 08/13/2007 10:26:05 AM

Image-924: Raft River, View up stream, marshes on both sides

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINALT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

4700th Rd. and US 101, Unnamed Rd S. of intersection, Taholah, 98587

Driving Directions:

- Depart Queets
1. Go South on US 101 toward Jackson Heights Dr (1.58 Mile(s))
 2. Make sharp right on 4700th Rd (0.25 Mile(s))
- Arrive at 4700th Rd. and US 101, Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 27.686' / W 124° 19.881', Sector Map OC-10
Strategy Objective:	Collection - collect oil if conditions push oil up river.
Implementation:	Place boom across river at in angle to direct oil to old fish farm for collection. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Thick brush, ruts, and mud can make road impassable. No phone coverage, poor radio coverage.
Staging Area:	Staging Area South Beach, OC-South Beac-staging
Field Notes:	Tribal guide required. Bring brush clearing equipment.
Resources Targeted:	marine birds, tribal lands/resources, sensitive habitat, salmonids (anadromous)
Fixed Anchors:	67: N 47° 27.706' / W 124° 19.830', north bank near old fish farm, adjust as needed
Watercourse Description:	River with tidal influence, tides are known to go to fish farm, Field Visit Width ~ 200ft, gravel, rock, mud



Suggested Equipment

Quantity	Description
100 ft	1/2 poly line
2 each	Anchor(s) for strong currents - ie. SARCA
400 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
1	Machete
8 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/14/2007

Raft River Shed for boom storage



N 47.462125° W 124.529978° W WGS 84 08/13/2007 11:18:05 AM

Image-942: Raft River, abandoned shed

Raft River View downstream from 'old fish ranch'



N 47.461742° W 124.530461° W WGS 84 08/13/2007 11:18:06 AM

Image-941: Raft River, view downstream from 'old fish ranch'

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

Driving Directions:

- Depart Queets
1. Go South on US 101 toward Jackson Heights Dr (1.12 Mile(s))
 2. Make sharp right on Unnamed St (4.52 Mile(s))
 3. Turn left to stay on Unnamed St (0.17 Mile(s))
 4. Make sharp right to stay on Unnamed St (0.21 Mile(s))
- Arrive at Point (N 47° 27.686' / W 124° 19.881'), on the left

Site Lat/Long:	N 47° 24.017' / W 124° 19.762', Sector Map OC-10
Strategy Objective:	Exclusion - keep oil out of Camp Creek
Implementation:	Deploy boom across creek above first bend (at high tide, first bend is inaccessible). If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. When using helio be sure to have eye and ear protection.
Staging Area:	Staging Area South Beach, OC-South Beac-staging
Field Notes:	Can access the trail with ATVs. Bridge at Camp Creek on Cape Elizabeth Road is impassible to large vehicles but may be possible for ATVs. Or use helo.
Resources Targeted:	tribal lands/resources, salmonids (anadromous)
Fixed Anchors:	78: N 47° 23.942' / W 124° 19.667', Water Depth 0ft, north bank near tree line, adjust as needed
Watercourse Description:	Creek, little tidal influence, well developed pool above beach area, Field Visit Width ~ 200ft, sand, gravel



Suggested Equipment	
Quantity	Description
10 ft	1/2 poly line
200 ft	B3 - River Boom, or other appropriate type
400 ft	Snare Boom
8 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 08/13/2007

Camp Creek boom site, about 150 feet



N 47.598883° W 124.527800° S WGS 84 08/13/2007 4:12:56 PM
Image-962: Camp Creek, boom site, about 150 feet

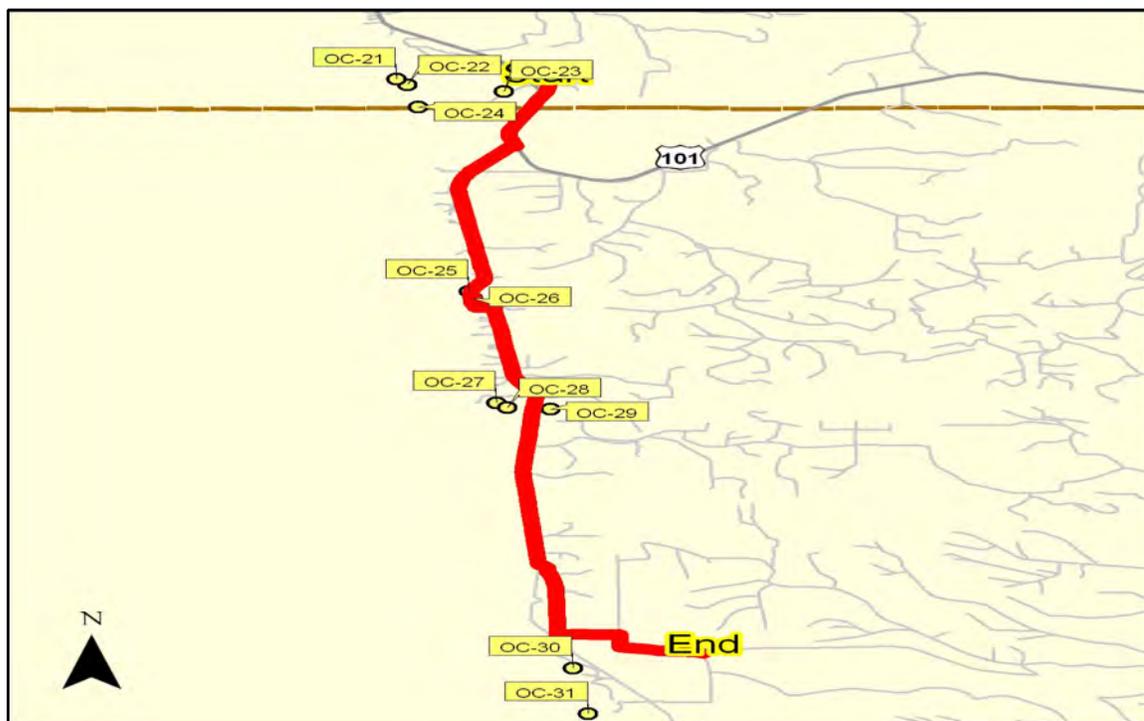
Camp Creek View upstream



N 47.598947° W 124.527800° E WGS 84 08/13/2007 4:16:45 PM
Image-963: Camp Creek, view upstream

Site Contact Information

High Priority - contact immediate or before entering:
Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

BIA 7000 Rd & BIA 7055 Rd., Unnamed Rd, Taholah, 98587

Driving Directions:

- Depart Queets
1. Go South on US 101 toward Jackson Heights Dr (1.12 Mile(s))
 2. Make sharp right on Unnamed St (8.5 Mile(s))
 3. Turn left to stay on Unnamed St (0.43 Mile(s))
 4. Turn right on Bia 7000 Rd (0.79 Mile(s))
- Arrive at BIA 7000 Rd & BIA 7055 Rd., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 23.300' / W 124° 19.543', Sector Map OC-11
Strategy Objective:	Exclusion - keep oil out of Duck Creek
Implementation:	Deploy boom at upper end of pond. Mouth is 100' wide and shallow. Little tidal influence. If oil is present, also deploy snare-boom.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Thick brush, ruts, and mud can make road impassable. When using helo be sure to have eye and ear protection.
Staging Area:	Staging Area South Beach, OC-South Beach-staging
Field Notes:	State Rt 109 (extension road on left just north of railroad creek bridge - 4 wheel drive only; half-mile trail to beach) or via helicopter. Must have tribal guide.
Resources Targeted:	salmonids (anadromous), tribal lands/resources
Watercourse Description:	Creek, pool near tree line, Field Visit Width ~ 100ft, sand, gravel



Suggested Equipment	
Quantity	Description
20 ft	1/2 poly line
150 ft	B3 - River Boom, or other appropriate type
200 ft	Snare Boom
8 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 08/13/2007

Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines

124°19.67'W 124°19.33'W
 0 250 500 1,000 Feet

Duck Creek Pool above channel, possible boom



N 47.588700° W 124.525111° NE WGS 84 08/13/2007 2:55:09 PM

Image-964: Duck Creek, Pool above channel, possible boom site

Duck Creek View upstream



N 47.588578° W 124.525031° E WGS 84 08/13/2007 2:57:45 PM

Image-965: Duck Creek, view upstream

Site Contact Information

High Priority - contact immediate or before entering:
Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



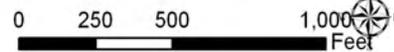
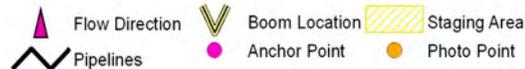
Closest Address:

BIA 7000 Rd & BIA 7055 Rd., Taholah, 98587

Driving Directions:

- Depart Queets
 - 1. Go South on US 101 toward Jackson Heights Dr (1.12 Mile(s))
 - 2. Make sharp right on Unnamed St (8.5 Mile(s))
 - 3. Turn left to stay on Unnamed St (0.43 Mile(s))
 - 4. Turn right on Bia 7000 Rd (0.79 Mile(s))
- Arrive at BIA 7000 Rd & BIA 7055 Rd., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 20.943' / W 124° 17.837', Sector Map OC-11
Strategy Objective:	Diversion - use tides to divert oil to collection site on south bank.
Implementation:	Anchor boom on North bank at an angle to divert oil to the south bank collection site. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Several legal boundaries for fishing locations (do not remove) with fishing nets and lines that present navigational/safety hazards. Sneaker waves, high tides, and beach logs can be safety concerns.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	No access to north shore. Boat ramp upstream of tribal center. Must have tribal guide. Can also launch a Jon boat from end of beach.
Resources Targeted:	salmonids (anadromous), marine birds, tribal lands/resources
Fixed Anchors:	75: N 47° 20.964' / W 124° 17.881', beach on north bank, adjust as needed
Watercourse Description:	River with tidal influence, large dynamic river, tides can go 5 miles upstream, Field Visit Width ~ 750ft, rock, gravel, logs



Suggested Equipment

Quantity	Description
200 ft	1/2 poly line
4 each	Anchor(s) for strong currents - ie. SARCA
500 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)
4 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 08/09/2007

Quinault River Anchor, point for deflection strategy



N 47.349228° W 124.296011° NW WGS 84 08/09/2007 10:28:55 AM

Image-955: Quinault River, anchor point for deflection strategy

Quinault River River mouth, currents can be extreme

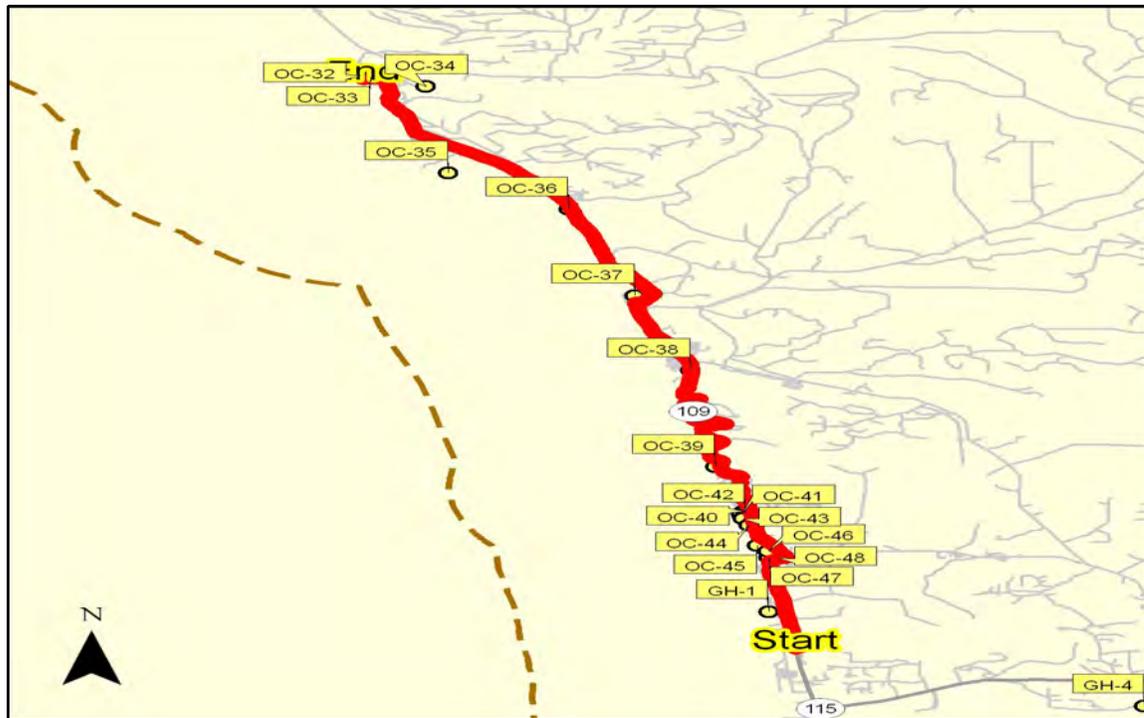


N 47.349300° W 124.296092° W WGS 84 08/09/2007 10:29:07 AM

Image-956: Quinault River, River mouth, currents can be extreme

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

128 Quinault St., Taholah, 98587

Driving Directions:

- Depart Ocean City
1. Go North West on SR 109 (22.51 Mile(s))
 2. Turn left on Quinault St (0.32 Mile(s))
- Arrive at 128 Quinault St., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 20.902' / W 124° 17.666', Sector Map OC-11
Strategy Objective:	Collection - collect oil along south bank of Quinault River
Implementation:	Deploy boom at an angle so that oil collects in natural eddy area downstream from the processing plant. Use anchors and lines as needed to maintain an effective angle. Use vac truck to remove collected oil.
Site Safety Note:	Several legal boundaries for fishing locations (do not remove) with fishing nets and lines that present navigational/safety hazards. Sneaker waves, high tides, and beach logs can be safety concerns.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	No access to north shore. Boat ramp upstream of tribal center. Must have tribal guide.
Resources Targeted:	tribal lands/resources, salmonids (anadromous), marine birds
Fixed Anchors:	77: N 47° 20.889' / W 124° 17.609', Water Depth 0ft, south bank anchor point, adjust as needed.
Watercourse Description:	River with tidal influence, Field Visit Width ~ 650ft

Suggested Equipment

Quantity	Description
200 ft	1/2 poly line
6 each	Anchor(s) for strong currents - ie. SARCA
500 ft	B3 - River Boom, or other appropriate type
4 each	Stake(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 08/09/2007



124°18'W
124°17.67'W
124°17.33'W

47°21'N

▲ Flow Direction
 ∨ Boom Location
 ▨ Staging Area
 ● Anchor Point
 ● Photo Point

— Pipelines

0 250 500 1,000 Feet

Quinault River Anchor, point for collection strategy



N 47.348050° W 124.293511° NW WGS 84 08/09/2007 11:12:05 AM

Image-959: Quinault River, anchor, point for collection strategy

Quinault River Collection area

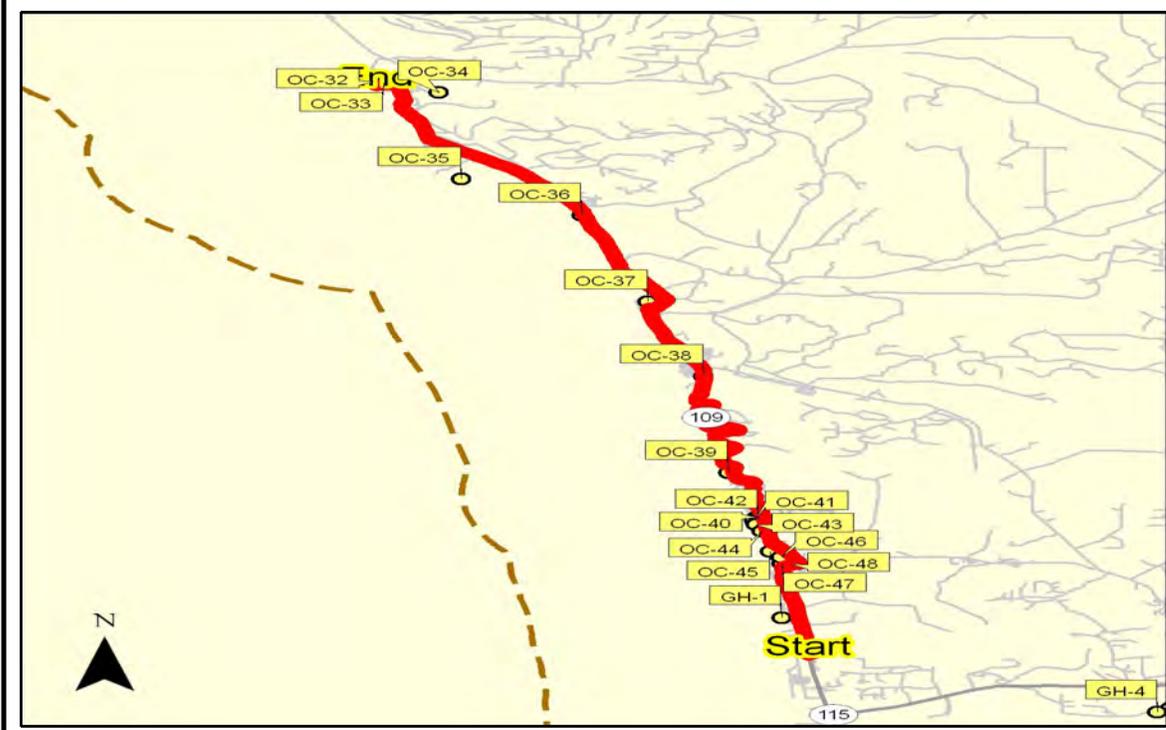


N 47.348050° W 124.293511° W WGS 84 08/09/2007 11:12:05 AM

Image-960: Quinault River, collection area

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

128 Quinault St., Taholah, 98587

Driving Directions:

- Depart Ocean City
1. Go North West on SR 109 (22.51 Mile(s))
 2. Turn left on Quinault St (0.32 Mile(s))
- Arrive at 128 Quinault St., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 20.627' / W 124° 16.660', Sector Map OC-11
Strategy Objective:	Collection, Exclusion - keep oil out of Quinault River, and collect oil at south bank collection site.
Implementation:	Deploy boom at an angle to tide flow to collect oil on the south bank. Use anchors and lines as needed to maintain an effective angle. There is a dirt road along the south bank that should be vac truck accessible.
Site Safety Note:	Several legal boundaries for fishing locations (do not remove) with fishing nets and lines that present navigational/safety hazards. Sneaker waves, high tides, and beach logs can be safety concerns.
Staging Area:	Staging Area Quinault Nation, OC-Quinault-staging
Field Notes:	No access to north shore. Boat ramp upstream of tribal center. Must have tribal guide.
Resources Targeted:	salmonids (anadromous), marine birds, tribal lands/resources
Fixed Anchors:	76: N 47° 20.553' / W 124° 16.654', Water Depth 0ft, south bank anchor point, adjust as needed
Watercourse Description:	River with tidal influence, Field Visit Width ~ 450ft



Suggested Equipment

Quantity	Description
200 ft	1/2 poly line
6 each	Anchor(s) for strong currents - ie. SARCA
800 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)
8 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
3	Laborer (s)

Status: Visited and Not Tested 08/09/2007

Quinault River Bridge, waves have been known to break this far up stream



N 47.547467° W 124.283575° E WGS 84 08/09/2007 10:18:25 AM

Image-958: Quinault River, bridge, waves have been known to break this far up stream

Quinault River Upstream from bridge

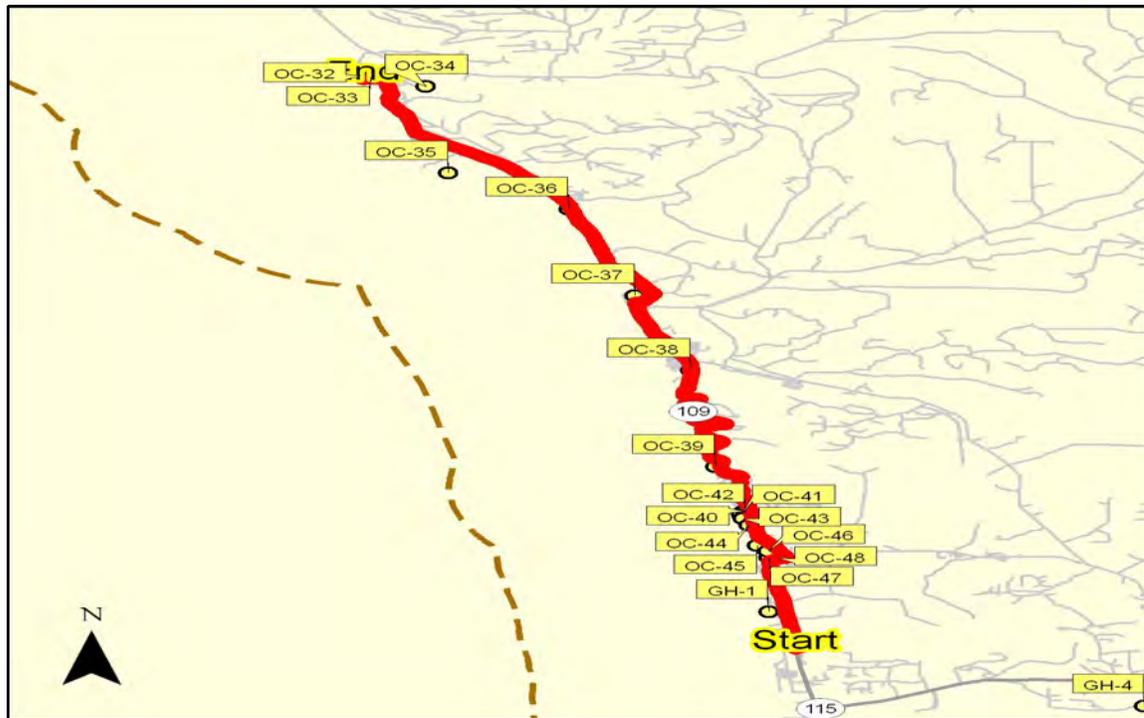


N 47.547378° W 124.283794° S WGS 84 08/09/2007 10:16:26 AM

Image-957: Quinault River, Upstream from bridge

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



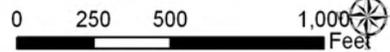
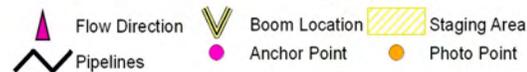
Closest Address:

128 Quinalt St., Taholah, 98587

Driving Directions:

- Depart Ocean City
- 1. Go North West on SR 109 (22.51 Mile(s))
- 2. Turn left on Quinault St (0.32 Mile(s))
- Arrive at 128 Quinalt St., Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 18.112' / W 124° 16.252', Sector Map OC-11
Strategy Objective:	Collection - use natural collection area in Grenville Bay - offshore skimming or onshore collection as needed.
Implementation:	Deploy boom at an angle to use the natural eddy to help concentrate oil for skimming. Must have tribal guide. Will require multiple anchors.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area.
Staging Area:	Moclips River Upstream, OC-37-staging
Field Notes:	Single-lane, gated road to Loran Station (but 100' down to beach). Tribal guide required. Do not drive on beach with out Tribal guide.
Resources Targeted:	general fish & wildlife resources, tribal lands/resources
Fixed Anchors:	79: N 47° 18.139' / W 124° 16.438', Water Depth 0ft, bank along inside of 'saddle' adjust as needed
Watercourse Description:	Bay, natural eddy area



Suggested Equipment

Quantity	Description
200 ft	1/2 poly line
6 each	Anchor(s) for strong currents - ie. SARCA
500 ft	B3 - Contractor Boom
1 each	Jon Boat(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 08/09/2007

Point Grenville From top of saddle to nw



N 47.501994° W 124.273947° NW WGS 84 08/09/2007 10:59:55 AM

Image-967: Point Grenville, view from top of saddle to nw

Point Grenville Approach to Saddle



N 47.502844° W 124.274008° SW WGS 84 08/09/2007 10:54:57 AM

Image-966: Point Grenville, approach to Saddle

Site Contact Information

High Priority - contact immediate or before entering:
 Tribe QUINAULT NATION, (W) 360/276-4422, (H) 360/276-8211



Closest Address:

Taholah, 98587

Driving Directions:

- Depart Ocean City
1. Go North on SR 109 (19.69 Mile(s))
 2. Turn left on Unnamed St (0.57 Mile(s))
- Arrive at Point (N 47° 18.112' / W 124° 16.252'), on the right

Site Lat/Long:	N 47° 17.063' / W 124° 14.072', Sector Map OC-12
Strategy Objective:	Exclusion - keep oil out of Wreck Creek.
Implementation:	Deploy boom across creek at bridge on Highway 109 as weather permits. Creek width varies from 10' (spring) to 40' (winter). In winter allow creek to flush. Recommend lining contractor boom with sorbent boom. Deploy on upstream side of river, in a chevron.
Site Safety Note:	Traffic danger - take precautions
Staging Area:	Moclips River Upstream, OC-37-staging
Field Notes:	Directly off Hwy 109/parking area. Beach vehicle access on both sides of Wreck Creek, about 1.25 miles to north and 0.5 miles to south. No boat landing site. Tribal guide required.
Resources Targeted:	salmonids (anadromous), sensitive habitat, shorebirds, tribal lands/resources
Fixed Anchors:	80: N 47° 17.136' / W 124° 14.060', Water Depth 0ft, north bank near bridge, adjust as needed
Watercourse Description:	River with tidal influence



Suggested Equipment

Quantity	Description
150 ft	B3 - River Boom, or other appropriate type
150 ft	Sorbent Boom
8 each	Stake(s)

Suggested Personnel

2	Laborer (s)
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Status: Visited and Not Tested 06/06/2007



Site Contact Information

High Priority - contact immediate or before entering:
 QUINALT NATION, (W) After-Hours , (H) 360/276-8211, After-Hours Emergencies

Image-866: Wreck Creek, upstream.

Image-868: Wreck Creek, from Ocean side



Closest Address:

SR 109 & Canyon Way, Taholah, 98587

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 (17.97 Mile(s))
 Arrive at SR 109 & Canyon Way, Taholah, WA, 98587, on the right

Site Lat/Long:	N 47° 14.536' / W 124° 12.877', Sector Map OC-12
Strategy Objective:	Exclusion, Collection - Keep oil out of river, and collection if possible.
Implementation:	Deploy from end of 6th street. Anchor boom to pilings on west side of river, use skiff to anchor other end downstream on the east side of river.
Staging Area:	Moclips River Upstream, OC-37-staging
Resources Targeted:	salmonids (anadromous), sensitive habitat, shorebirds, tribal lands/resources
Watercourse Description:	River with tidal influence



Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines

124°13'W 124°12.67'W
 0 250 500 1,000 Feet

Suggested Equipment

Quantity	Description
200 ft	B3 - Contractor Boom
1 each	Boat(s)
1 each	Vac Truck(s)

Suggested Personnel

1	Boat Operator (s)
1	Laborer (s)

Status: New - visited but not tested 06/06/2007



Image-870: Moclips River, end of 6th street



Image-871: Moclips River, downstream view

Site Contact Information
 No contact information available.



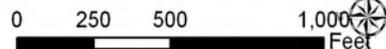
Closest Address:
 6th Street, Moclips, 98562

Driving Directions:
 Depart Ocean City
 1. Go North on SR 109 (13.58 Mile(s))
 2. Turn left on 2nd St (0.06 Mile(s))
 3. Turn right on Railroad Ave (0.27 Mile(s))
 4. Turn right on 6th St (0.03 Mile(s))
 Arrive at 6th Street, Moclips, WA, 98562, on the right

Site Lat/Long:	N 47° 12.375' / W 124° 11.865', Sector Map OC-13
Strategy Objective:	Exclusion, Collection - keep oil out of creek and collection of oil if possible.
Implementation:	Angle boom from bank at SE corner of bridge to the private boat ramp next to the house about 300 ft downstream on the far shore.
Site Safety Note:	High traffic area - also trail down to water from bridge has several open holes
Staging Area:	Moclips River Upstream, OC-37-staging
Resources Targeted:	shorebirds, salmonids (anadromous), public lands/facilities, sensitive habitat
Fixed Anchors:	37: N 47° 12.368' / W 124° 11.860', Use shoreline under bridge, or even bridge pilings to anchor boom.
Watercourse Description:	River with tidal influence



Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines



Suggested Equipment

Quantity	Description
300 ft	B3 - Contractor Boom
1 each	Vac Truck(s)

Suggested Personnel

1	Boat Operator (s)
1	Laborer (s)

Status: New - visited but not tested 06/06/2007



Site Contact Information

High Priority - contact immediate or before entering:
 Iron Springs Resort, (W) 360-276-4230
 R. Betcher, (H) 360 276 4376, private home with boat launch
 Pacific Beach State Park, (W) 360 276 4297, can provide description of local conditions.

Image-873: Joe Creek, view of recommended boom site

Image-874: Joe Creek, view from SE corner of Hwy 109 bridge



Closest Address:

SR 109 & Diamond Dr., Moclips, 98571

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 (10.96 Mile(s))
 Arrive at SR 109 & Diamond Dr., Moclips, Wa, 98571, on the right

Site Lat/Long:	N 47° 9.566' / W 124° 11.419', Sector Map OC-13
Strategy Objective:	Exclusion, Collection - keep oil out of Boone Creek, and if possible collection with vac truck.
Implementation:	Deploy boom across the entrance to the cove at the creek mouth as the weather permits. Recommend - that boom be anchored at north shore of resort road which leads to beach. Run boom across mouth of creek in SE direction and anchor on far shore at an angle. Cove becomes dry at low tide, and the creek is very shallow; 20' width. Back up boom with snares or sorbent sweeps across the creek at the culverts under Highway 109. Could get vac truck to waters edge on north shore via resort road.
Site Safety Note:	Use traffic precautions.
Staging Area:	Moclips River Upstream, OC-37-staging
Field Notes:	Road by Iron Springs Resort off 109 approx. 3 miles north of Copalis Beach
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Fixed Anchors:	136: N 47° 9.552' / W 124° 11.392', North shore of dirt road on resort property. Water is deep, will vary significantly with tides.
Watercourse Description:	River with tidal influence



Suggested Equipment

Quantity	Description
400 ft	B3 - Contractor Boom
100 ft	Snare Boom
1 each	Vac Truck(s)

Suggested Personnel

1	Boat Operator (s)
1	Laborer (s)

Status: Visited and Not Tested 06/06/2007



Image-879: Boone Creek, Recommended boom location from base of Resort road.



Image-880: Boone Creek, downstream from HWY 109

Site Contact Information
 High Priority - contact immediate or before entering:
 Iron Springs Resort, (W) 360-276-4230



Closest Address:
 20 Park Ln, Copalis Crossing, 98536

Driving Directions:
 Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (6.51 Mile(s))
 2. Turn left on Park Ln (0.09 Mile(s))
 Arrive at 20 Park Ln, Copalis Crossing, WA, 98536, on the right

Site Lat/Long:	N 47° 8.264' / W 124° 10.906', Sector Map OC-13
Strategy Objective:	Deflection - use tide to deflect oil to collection site on west bank of Copalis River
Implementation:	Deploy boom from the east bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Sneaker waves, high tides, and beach logs can all be safety concerns for this area. Beware of submerged logs and shallows. Recommend jet boat.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Copalis Beach food Bank Parking lot has boat ramp, 24 hr lighting & boat dock for recovery operations. Need State Park permission to drive on beach.
Resources Targeted:	salmonids (anadromous), public lands/facilities, sensitive habitat
Fixed Anchors:	81: N 47° 8.193' / W 124° 10.899', Water Depth 8ft, about middle of river channel, adjust as needed
Watercourse Description:	River with tidal influence



Suggested Equipment	
Quantity	Description
150 ft	1/2 poly line
4 each	Anchor(s) for strong currents - ie. SARCA
400 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
4 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 08/09/2007

▲ Flow Direction
∨ Boom Location
▨ Staging Area
● Photo Point
▲ Pipelines
● Anchor Point

0 250 500 1,000 Feet

Copalis River Mouth of river



08/09/2007 1:50:04 PM

Image-969: Copalis River, mouth of river

Copalis River Sand bank along east bank

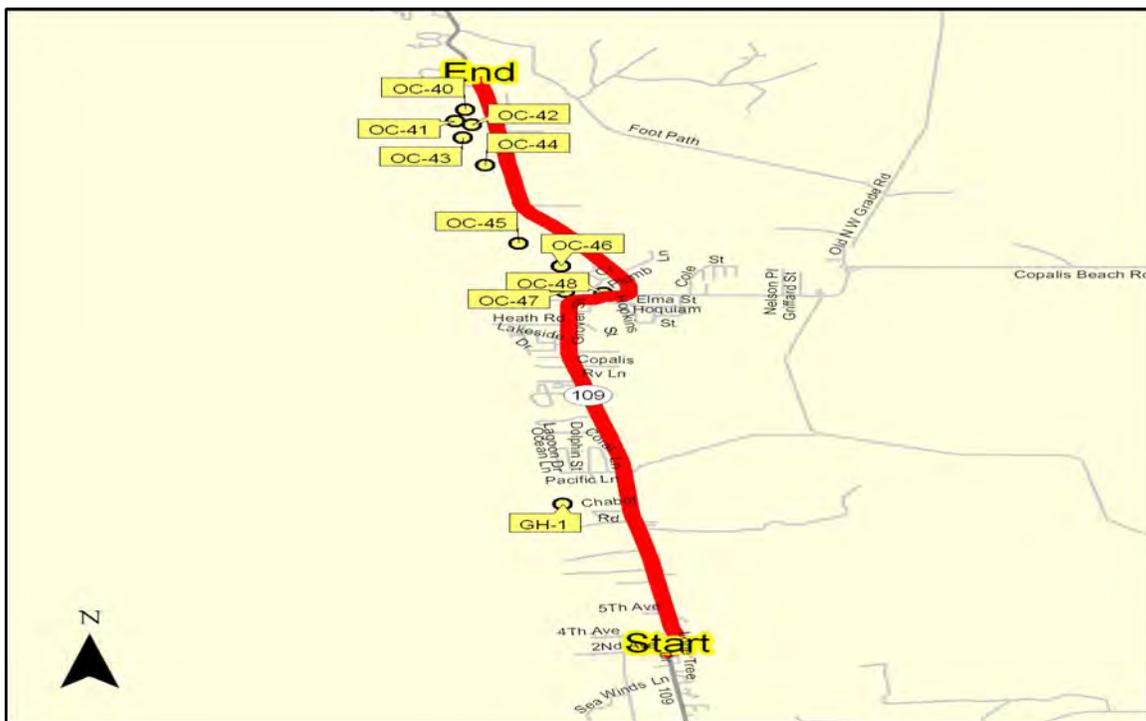


N 47.134575° W 124.181644° NE WGS 84 08/09/2007 2:03:25 PM

Image-968: Copalis River, sand bank along east shoreline

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



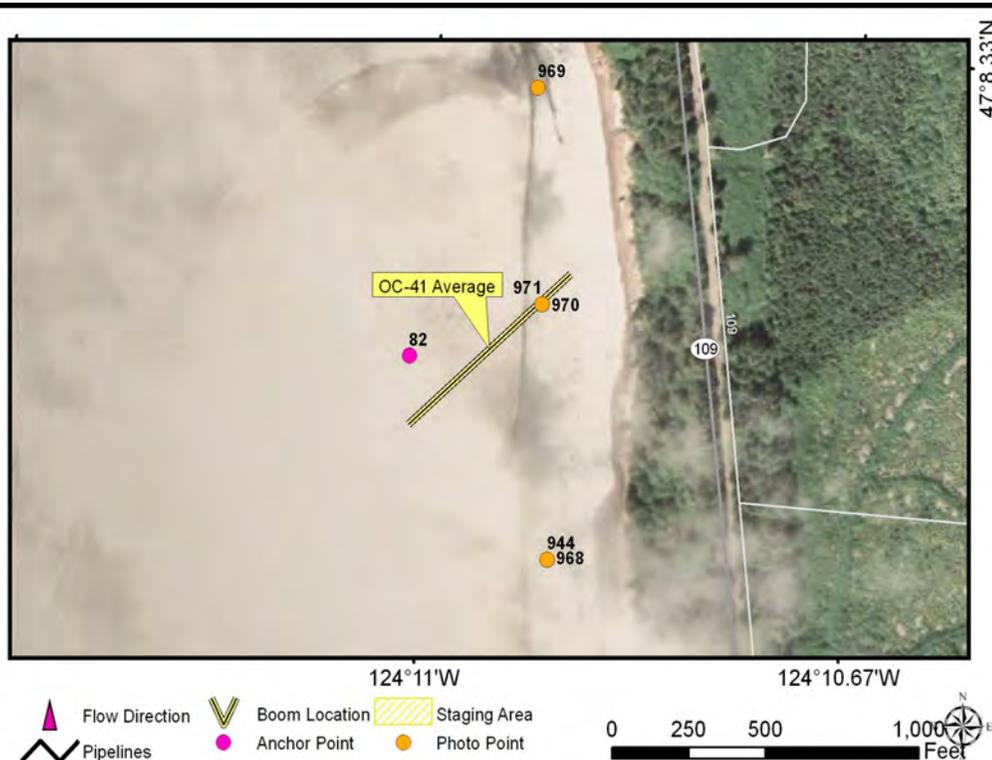
Closest Address:

SR 109 & Ocean View Ln., Copalis Crossing, 98536

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (5.2 Mile(s))
 Arrive at SR 109 & Ocean View Ln., Copalis Crossing, WA, 98536, on the right

Site Lat/Long:	N 47° 8.182' / W 124° 10.952', Sector Map OC-13
Strategy Objective:	Collection - use tidal push to collect oil on west bank
Implementation:	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat. Sneaker waves, high tides, and beach logs can all be safety concerns for this area.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Under some conditions this area is vac truck accessible. Must have permission from the park to drive along beach.
Resources Targeted:	waterfowl, shorebirds, sensitive habitat, salmonids (anadromous), public lands/facilities
Fixed Anchors:	82: N 47° 8.174' / W 124° 11.014', Water Depth 0ft, west bank, adjust as needed
Watercourse Description:	River with tidal influence, tides can go up about 1 mile from mouth, Field Visit Width ~ 400ft



Suggested Equipment	
Quantity	Description
100 ft	1/2 poly line
4 each	Anchor(s) for strong currents - ie. SARCA
400 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
4 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007



Copalis River First boom site
 N 47.136728° W 124.181858° NE WGS 84 08/09/2007 1:59:43 PM

Image-971: Copalis River, boom site

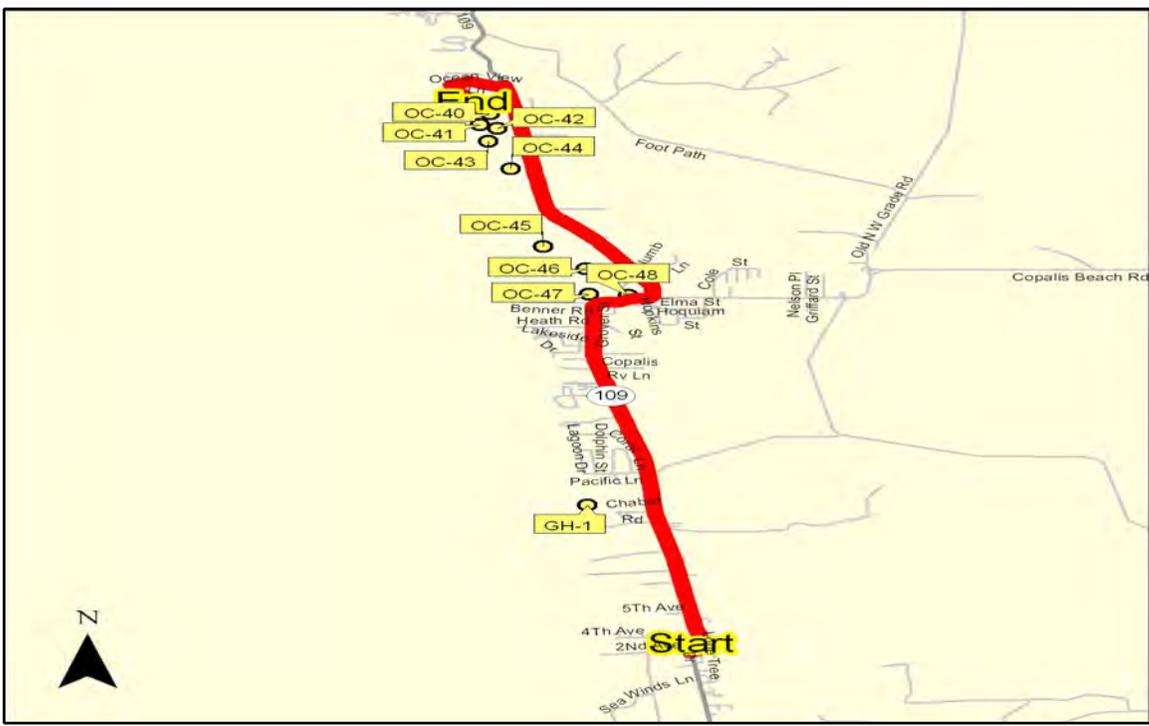


Copalis River Spit on west side of river
 N 47.136728° W 124.181858° W WGS 84 08/09/2007 1:58:14 PM

Image-970: Copalis River, spit on west side of river

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



Closest Address:

Driving Directions:

- Depart Ocean City
1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (5.2 Mile(s))
 2. Turn left on Ocean View Ln (0.21 Mile(s))
 3. Turn left on Unnamed St (0.24 Mile(s))
- Arrive at Point (N 47° 8.182' / W 124° 10.952'), on the left

Site Lat/Long:	N 47° 8.159' / W 124° 10.871', Sector Map OC-13
Strategy Objective:	Deflection - use tidal push to deflect oil to west bank for collection.
Implementation:	Deploy boom from the east bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle. Contact park regarding access to beach and possible (however unlikely) vac truck access.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat. Area can have high mosquito concentrations.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Marsh habitat is extensive on both banks and includes many side channels and area should be considered of high biological value. Additionally, west bank area is part of Griffiths/Priday State Park.
Resources Targeted:	salmonids (anadromous), sensitive habitat, public lands/facilities
Fixed Anchors:	68: N 47° 8.198' / W 124° 10.838', Water Depth 0ft, east bank, adjust as needed
Watercourse Description:	River with tidal influence, Marsh habitat is extensive on both banks, Field Visit Width ~ 450ft, sand, mud, logs



Flow Direction
 Boom Location
 Staging Area

Pipelines
 Anchor Point
 Photo Point

Suggested Equipment	
Quantity	Description
200 ft	1/2 poly line
3 each	Anchor(s) for strong currents - ie. SARCA
450 ft	B3 - River Boom, or other appropriate type
6 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007

Copalis River Sand bank along east bank



N 47.134575° W 124.131644° NE WGS 84 08/09/2007 2:03:25 PM

Image-944: Copalis River, sand bank along east bank.

Copalis River Second boom site



N 47.130750° W 124.180869° NE WGS 84 08/09/2007 2:11:04 PM

Image-943: Copalis River, view of east bank from west bank

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.

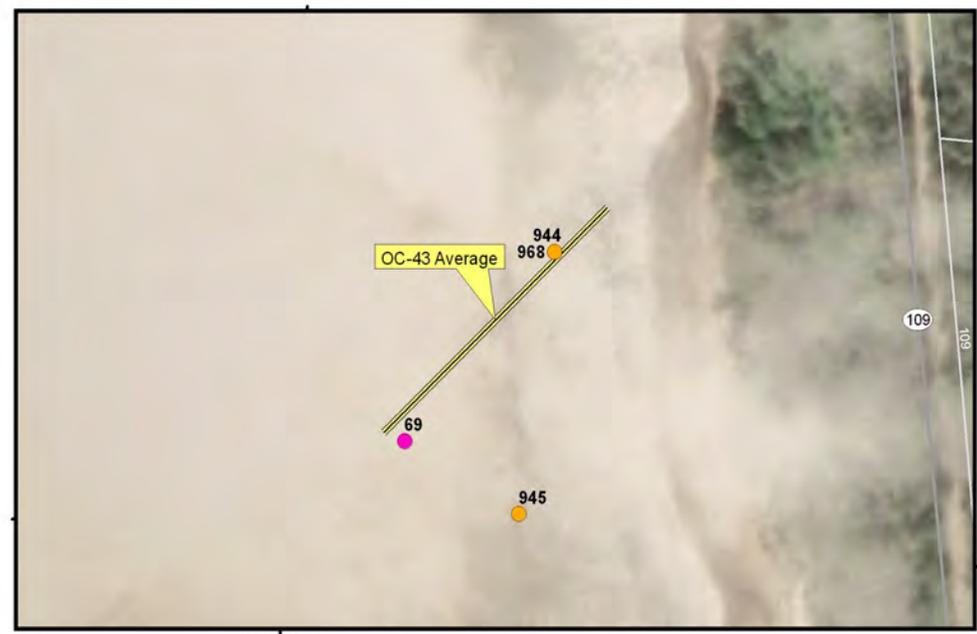


Closest Address:

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (4.85 Mile(s))
 Arrive at Point (N 47° 8.159' / W 124° 10.871'), on the left

Site Lat/Long:	N 47° 8.060' / W 124° 10.916', Sector Map OC-13
Strategy Objective:	Collection - collect oil along west bank, before it goes upstream into marshes.
Implementation:	Anchor boom on west bank oriented at NE angle toward northeast bank. Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Area can have high mosquito concentrations.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Recommend jet boat.
Resources Targeted:	public lands/facilities, salmonids (anadromous), waterfowl, sensitive habitat
Fixed Anchors:	69: N 47° 8.025' / W 124° 10.954', Water Depth 0ft, west bank, adjust as needed
Watercourse Description:	River with tidal influence, Marsh habitat is extensive on both banks and includes many side channels, Field Visit Width ~ 400ft, Field Visit Depth ~ 1ft, sand, mud, logs



124°11'W

47°8'N

0 250 500 Feet

Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines

Suggested Equipment	
Quantity	Description
100 ft	1/2 poly line
3 each	Anchor(s) for strong currents - ie. SARCA
450 ft	B3 - River Boom, or other appropriate type
4 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007

Copalis River Second boom site



N 47.133461° W 124.131803° NE WGS 84 08/09/2007 2:05:15 PM

Image-945: Copalis River, 2nd collection boom site

Copalis River Second boom site



N 47.130750° W 124.180869° NE WGS 84 08/09/2007 2:11:04 PM

Image-946: Copalis River, 2nd collection view

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



Closest Address:

Driving Directions:
 Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (4.75 Mile(s))
 Arrive at Point (N 47° 8.06' / W 124° 10.916'), on the left

Site Lat/Long:	N 47° 7.858' / W 124° 10.811', Sector Map OC-13
Strategy Objective:	Exclusion - keep oil out of side channel closest to the mouth on the east bank.
Implementation:	Deploy boom in a chevron to keep oil out of side channel. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat. Tides and storm surge can make this area very dangerous.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Marsh habitat is extensive on both banks and includes many side channels.
Resources Targeted:	waterfowl, salmonids (anadromous), public lands/facilities, sensitive habitat
Fixed Anchors:	71: N 47° 7.487' / W 124° 10.787', Water Depth 0ft, se corner of side channel closest to mouth, on west bank of river, adjust as needed
Watercourse Description:	Estuaries, larger side channel along west bank, Field Visit Width ~ 25ft, mud



Suggested Equipment	
Quantity	Description
30 ft	1/2 poly line
1 each	Anchor(s) for strong currents - ie. SARCA
100 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007

Copalis River Side channel, marsh habitat



N 47.117725° W 124.173692° E WGS 84 08/09/2007 1:23:32 PM

Image-949: Side channel east bank

Copalis River Side channel, marsh habitat

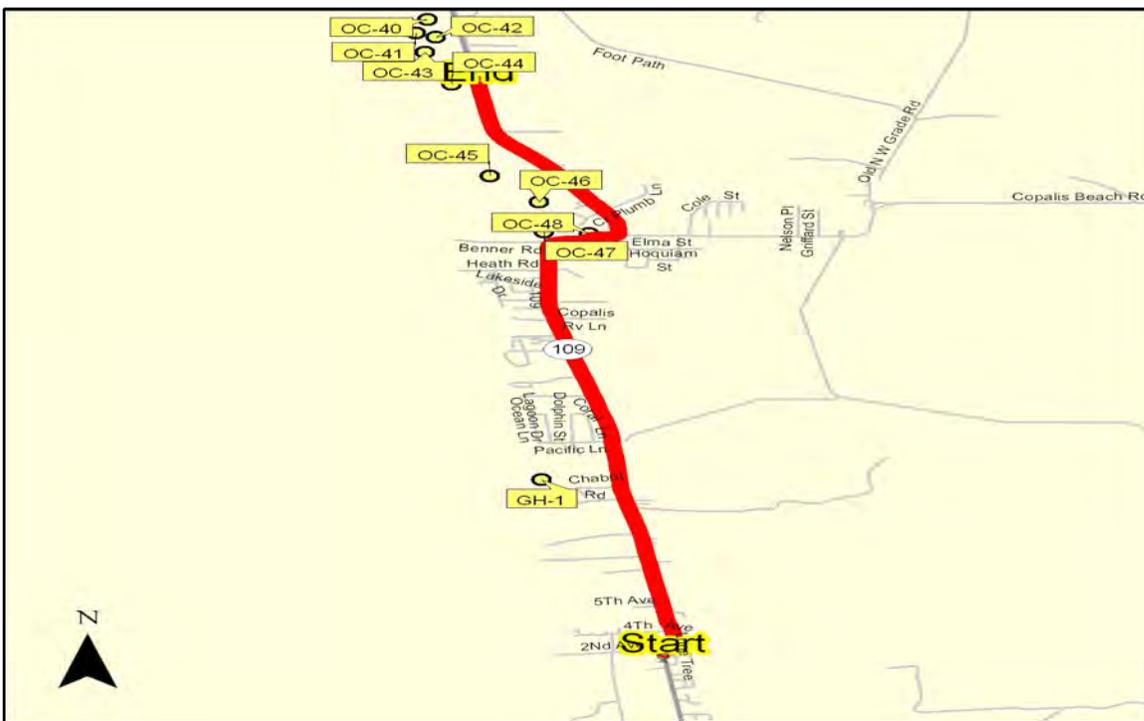


N 47.118567° W 124.174208° E WGS 84 08/09/2007 1:24:30 PM

Image-950: side channel on east bank

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.

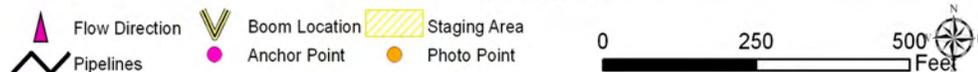


Closest Address:

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (4.5 Mile(s))
 Arrive at Point (N 47° 7.858' / W 124° 10.811'), on the left

Site Lat/Long:	N 47° 7.279' / W 124° 10.660', Sector Map OC-13
Strategy Objective:	Exclusion - keep oil out of side channel.
Implementation:	Deploy boom in a chevron, use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Take fast water precautions depending on flow. Area can have high mosquito concentrations.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Recommend jet boat. There are many side channels but this is one of three large ones on the west bank.
Resources Targeted:	waterfowl, sensitive habitat, salmonids (anadromous), public lands/facilities
Fixed Anchors:	70: N 47° 7.216' / W 124° 10.678', Water Depth 0ft, near sw corner of side channel, adjust as needed
Watercourse Description:	Saltmarsh, , mud



Suggested Equipment

Quantity	Description
25 ft	1/2 poly line
100 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
1 each	Sandbag(s)
4 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007

Copalis River Side channel, marsh habitat



08/09/2007 2:25:55 PM

Copalis River Side channel, marsh habitat



08/09/2007 2:24:34 PM

Image-947: Side channel

Image-948: Copalis River, side channel, marsh habitat

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.

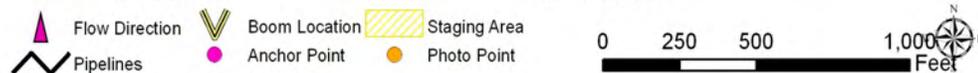


Closest Address:

Driving Directions:

Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (3.95 Mile(s))
 Arrive at Point (N 47° 7.279' / W 124° 10.66'), on the left

Site Lat/Long:	N 47° 7.111' / W 124° 10.464', Sector Map OC-13
Strategy Objective:	Exclusion - keep oil out of side channel
Implementation:	Deploy boom in a chevron. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Area can have high mosquito concentrations.
Resources Targeted:	waterfowl, shorebirds, sensitive habitat, public lands/facilities
Fixed Anchors:	74: N 47° 7.103' / W 124° 10.418', Water Depth 0ft, SE corner of channel, adjust as needed
Watercourse Description:	River with tidal influence, side channel which feed marsh area, Field Visit Width ~ 25ft, mud



Suggested Equipment	
Quantity	Description
50 ft	1/2 poly line
100 ft	B3 - River Boom, or other appropriate type
4 each	Stake(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/08/2007

Copalis River Side channel, marsh habitat



N 47.117725° W 124.173692° E WGS 84 08/09/2007 1:23:32 PM

Image-953: Copalis River, e bank side channel

Copalis River Side channel, marsh habitat



N 47.118567° W 124.174208° E WGS 84 08/09/2007 1:24:30 PM

Image-954: Coplais river, east bank channel

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



Closest Address:

Driving Directions:

- Depart Ocean City
1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (3.54 Mile(s))
 2. Turn left on Unnamed St (0.07 Mile(s))
- Arrive at Point (N 47° 7.111' / W 124° 10.464'), on the left

Site Lat/Long:	N 47° 6.922' / W 124° 10.451', Sector Map OC-13
Strategy Objective:	Exclusion - keep oil out of side channel.
Implementation:	Deploy boom in chevron, adjust angle based on field conditions. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	Beware of submerged logs and shallows. Recommend jet boat. Area can have high mosquito concentrations.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Marsh habitat is extensive on both banks and includes many side channels.
Resources Targeted:	waterfowl, salmonids (anadromous), public lands/facilities
Fixed Anchors:	72: N 47° 6.900' / W 124° 10.468', Water Depth 0ft, se corner of bank of side channel along the west bank of river, adjust as needed
Watercourse Description:	Estuaries, large side channel on west bank near bend in the river, Field Visit Width ~ 10ft, mud

Suggested Equipment

Quantity	Description
30 ft	1/2 poly line
1 each	Anchor(s) for strong currents - ie. SARCA
100 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
4 each	Stake(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007



Copalis River Side Channel, marsh habitat



N 47.115269° W 124.174036° W WGS 84 08/09/2007 1:21:53 PM

Image-951: Copalis Rv. bend side channel, marsh habitat

Copalis River Side channel, marsh habitat



N 47.115263° W 124.174208° W WGS 84 08/09/2007 2:55:15 PM

Image-988: Copalis River, side channel, marsh habitat

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



Closest Address:

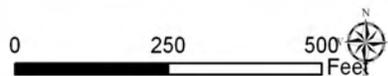
Driving Directions:
 Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (3.05 Mile(s))
 2. Make sharp left on Benner Rd (0.03 Mile(s))
 Arrive at Point (N 47° 6.922' / W 124° 10.451'), on the right

Site Lat/Long:	N 47° 6.913' / W 124° 10.269', Sector Map OC-13
Strategy Objective:	Collection - use tidal push to collect oil along southwest bank.
Implementation:	Deploy boom from the west bank at an angle to the tidal push. Use anchors and lines as needed to maintain an effective angle.
Site Safety Note:	High traffic area, take appropriate precautions. Beware of submerged logs and shallows. Recommend jet boat. Beware of old sharp metal debris along shore.
Staging Area:	Copalis River, collection site at boat launch, OC-48-staging
Field Notes:	Vacant lot across from food bank. This area is vac truck accessible.
Resources Targeted:	waterfowl, sensitive habitat, salmonids (anadromous), public lands/facilities
Fixed Anchors:	73: N 47° 6.963' / W 124° 10.202', Southwest bank, adjust as needed
Watercourse Description:	River with tidal influence, low energy zone, Field Visit Width ~ 250ft, mud



124°10.33'W

Flow Direction
 Boom Location
 Staging Area
 Anchor Point
 Photo Point
 Pipelines



Suggested Equipment

Quantity	Description
100 ft	1/2 poly line
3 each	Anchor(s) for strong currents - ie. SARCA
400 ft	B3 - River Boom, or other appropriate type
1	Jet Boat
4 each	Stake(s)
1 each	Vac Truck(s)

Suggested Personnel

1	Boat Operator (s)
2	Laborer (s)

Status: New - visited but not tested 08/09/2007

Copalis River Bank across from food bank, can launch John Boat



N 47.114983° W 124.171064° WGS 84 08/09/2007 1:18:48 PM

Image-952: Copalis River bank across from food bank, can launch John Boat

Copalis River Bank amoring, storm drain at gap in tires

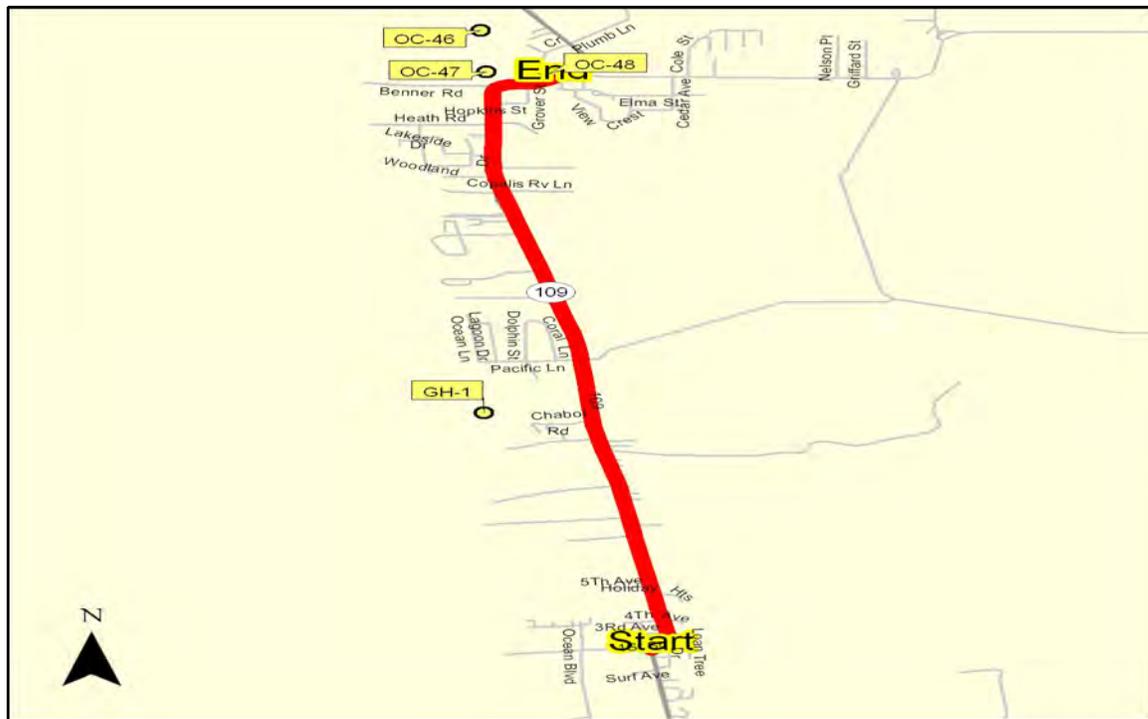


N 47.114864° W 124.172622° SE WGS 84 08/09/2007 2:36:49 PM

Image-987: Copalis River, storm drain downstream of launch area

Site Contact Information

High Priority - contact immediate or before entering:
 State Park, Griffiths/Priday State Park, (W) 360-289-3553, Griffiths-Priday Ocean State Park is a 364-acre marine park with 8,316 feet of saltwater shoreline on the Pacific Ocean and 9,950 feet of freshwater shoreline on the Copalis River.



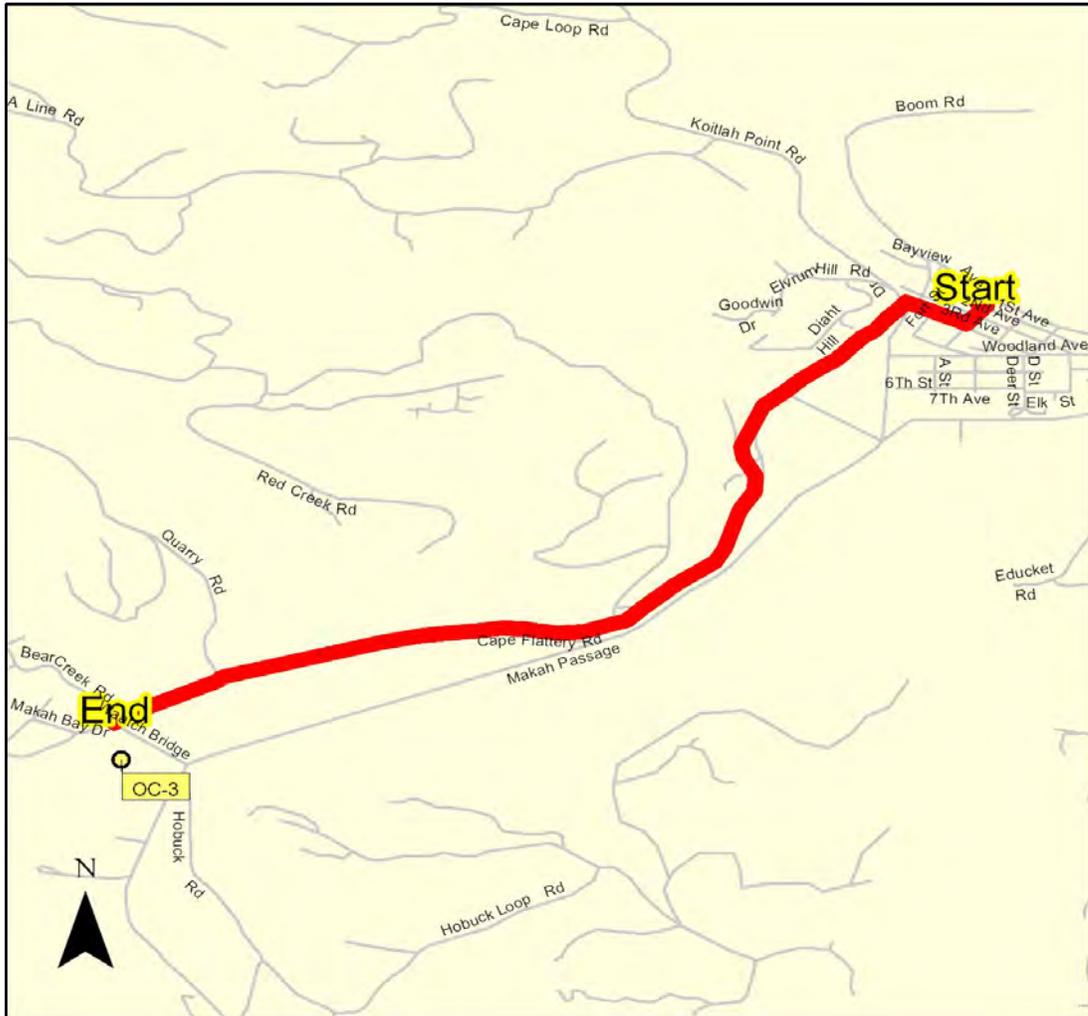
Closest Address:

Driving Directions:

- Depart Ocean City
1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (3.18 Mile(s))
- Arrive at Point (N 47° 6.913' / W 124° 10.269'), on the left

APPENDIX C - DETAILED STAGING LOCATIONS AND DESCRIPTIONS

Lat/Long:	N 48° 20.745' / W 124° 39.820', Sector Map OC-2
Staging Description:	Both sides of bridge has small pull out areas.
Site Contacts:	High Priority: Contact before entering or immediate notification required. Lloyd Lee, Makah Tribal Police, H 360 645-2701 MAKAH TRIBE, W 360 645-2701



Closest Address:
Hobuck Rd. & Cape Flattery Rd.,
Sekiu, 98381

Driving Directions:
Depart Neah Bay
1. Go South East on 1st St toward Washington St (0.03 Mile(s))
2. Make sharp right on Washington St (0.08 Mile(s))
3. Turn right on SR 112 (HWY 112) (0.15 Mile(s))
4. Turn left on Cape Flattery Rd (2.44 Mile(s))
Arrive at Hobuck Rd. & Cape Flattery Rd., Sekiu, WA, 98381, on the left

Strategy Sites Served:
OC-01(Marine)
OC-02(Marine)
OC-03(Marine)
OC-04(Marine)
OC-05(Marine)
OC-06(Marine)

Lat/Long:	N 47° 44.963' / W 124° 25.802', Sector Map OC-7
Staging Description:	There is a gravel/cobble launch ramp, sufficient only for small boats. Staging area is paved and large enough for vac truck as long as the river is not flooding. Waves reflect several times in the estuary. North shore is not safely accessible. Tidal influence to Oil City park
Site Contacts:	High Priority: Contact before entering or immediate notification required. Tribe HOH TRIBE, W 360/374-6582, M 360/374-2223 Olympic National Park Dispatch, W 360-565-3000x0



Closest Address:
2464 Lower Hoh Road, Forks, 98531

Driving Directions:
Depart Forks
1. Go South on US 101 (S Forks Ave) (23.98 Mile(s))
2. Bear right on Lower Hoh Rd (1.9 Mile(s))
Arrive at 2464 Lower Hoh Road, Forks, WA, 98531, on the left

Strategy Sites Served:
OC-14(Marine)
OC-15(Marine)
OC-16(Marine)
OC-17(Marine)

Lat/Long:	N 47° 14.536' / W 124° 12.877', Sector Map OC-12
Staging Description:	Park at dead end of 6th Street. Road is paved and could support vacuum truck. Bank has gentle slop which would support launching of shallow draft skiff.
Site Contacts:	

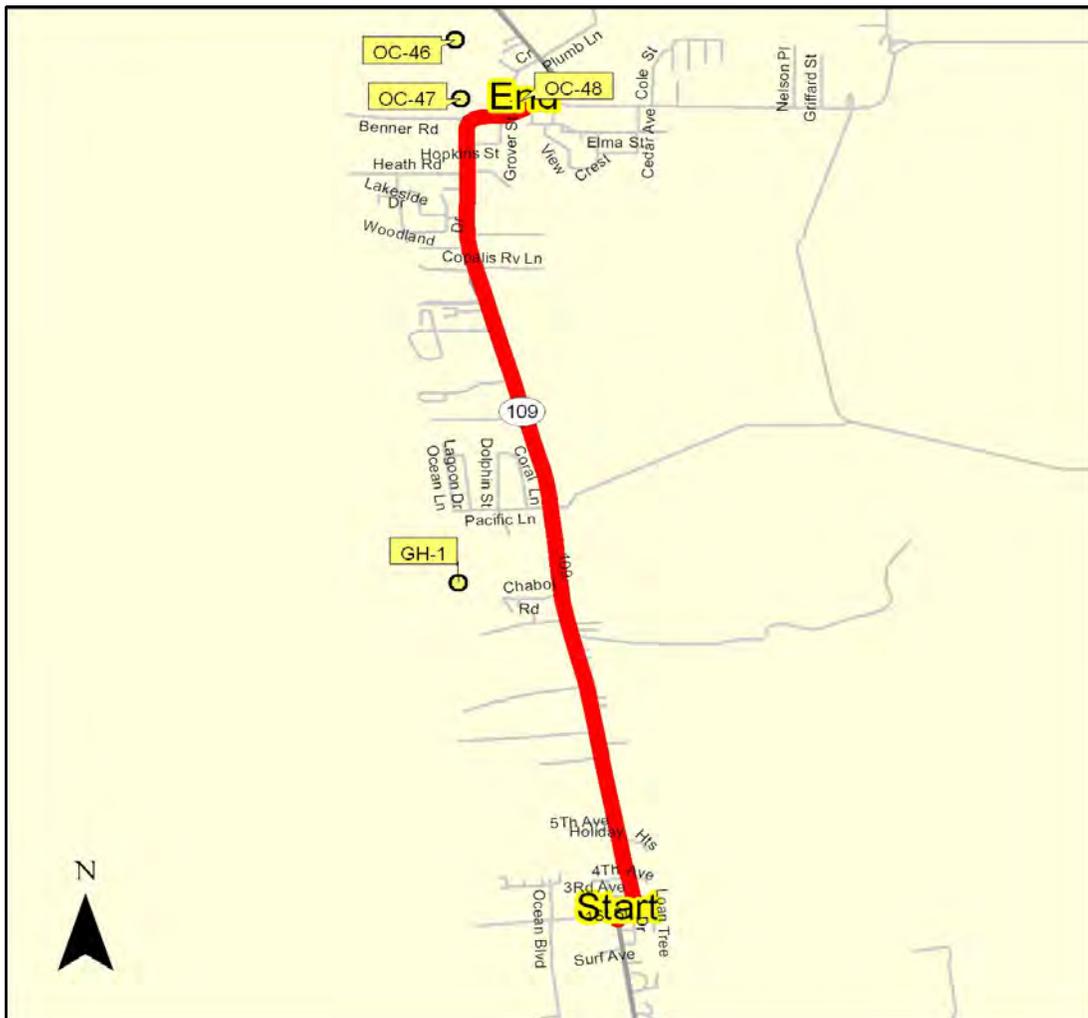


Closest Address:
6th Street, Moclips, 98562

Driving Directions:
Depart Ocean City
 1. Go North on SR 109 (13.58 Mile(s))
 2. Turn left on 2nd St (0.06 Mile(s))
 3. Turn right on Railroad Ave (0.27 Mile(s))
 4. Turn right on 6th St (0.03 Mile(s))
 Arrive at 6th Street, Moclips, WA, 98562, on the right

Strategy Sites Served:
 OC-35(Marine)
 OC-36(Marine)
 OC-37(Marine)
 OC-38(Marine)
 OC-39(Marine)

Lat/Long:	N 47° 6.913' / W 124° 10.269', Sector Map OC-13
Site Contacts:	High Priority: Contact before entering or immediate notification required. State Park, Griffiths/Priday State Park, W 360-289-3553



Closest Address:

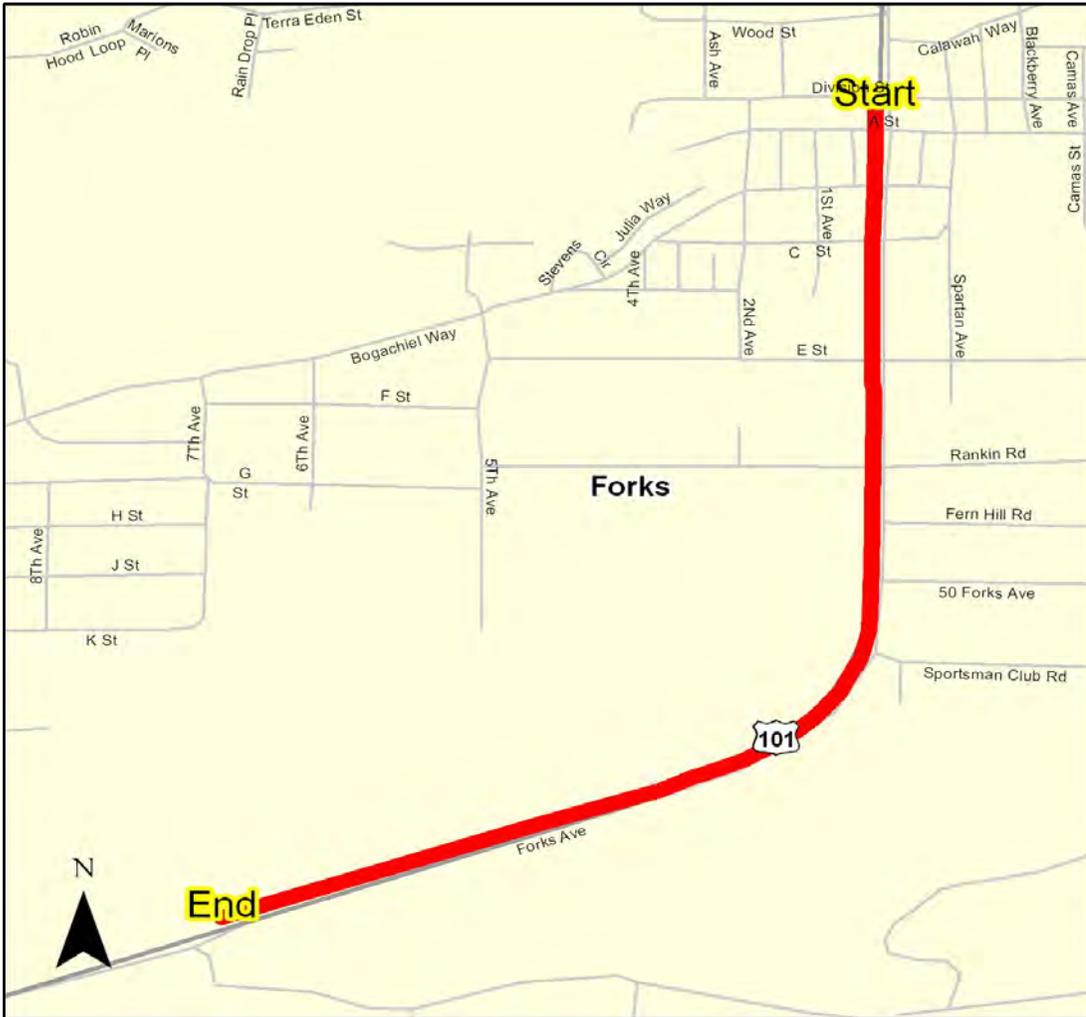
Driving Directions:

Depart Ocean City
 1. Go North on SR 109 toward 2nd Ave/Pacific Blvd NW (3.18 Mile(s))
 Arrive at Point (N 47° 6.913' / W 124° 10.269'), on the left

Strategy Sites Served:

- OC-40(Marine)
- OC-41(Marine)
- OC-42(Marine)
- OC-43(Marine)
- OC-44(Marine)
- OC-45(Marine)
- OC-46(Marine)
- OC-47(Marine)
- OC-48(Marine)

Lat/Long:	N 47° 56.236' / W 124° 23.764', Sector Map OC-6
Staging Description:	Paved, 2400 foot, lighted runway. Bordered by Highway 101
Site Contacts:	Responsible party or alternate contact: Leinan Dan, Forks Municipal Airport, W 360 374-5412x240

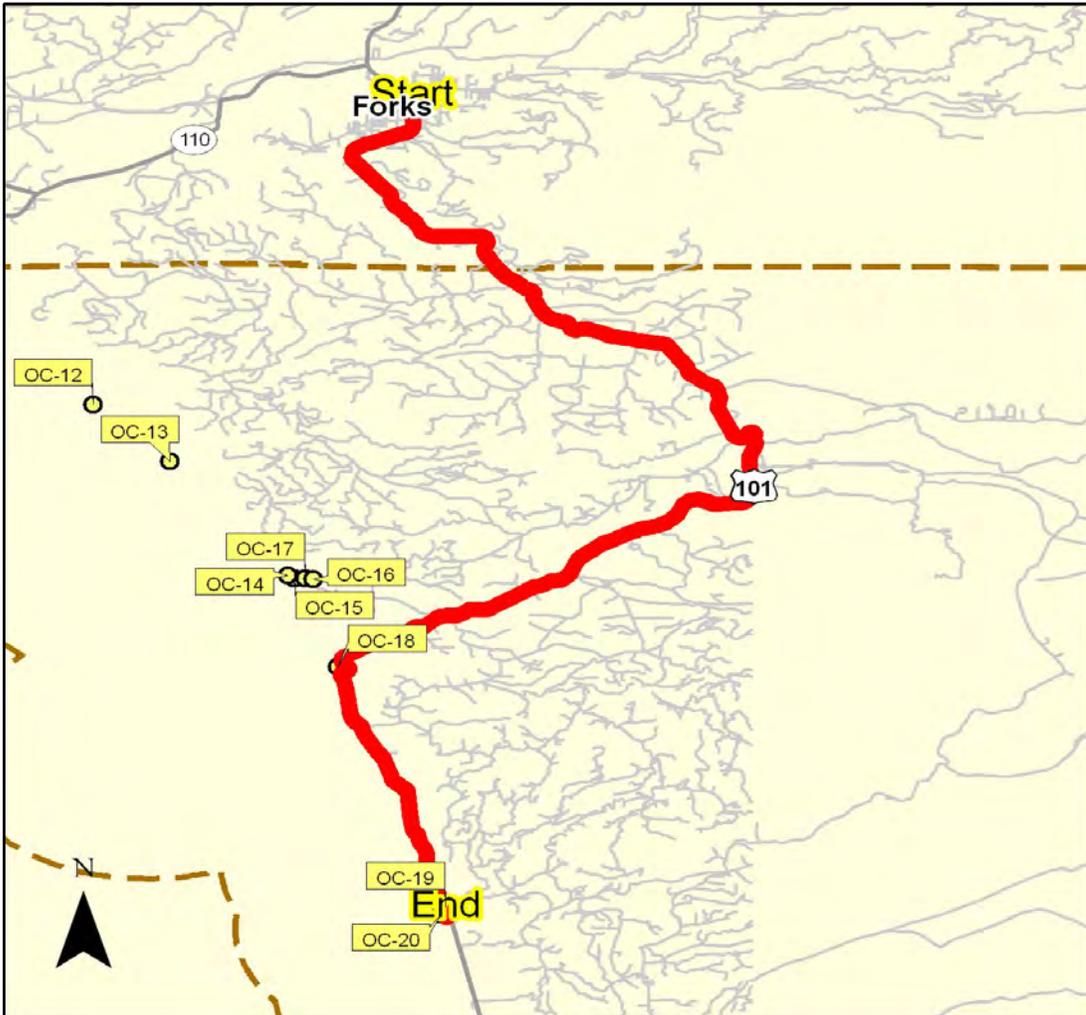


Closest Address:
Forks

Driving Directions:
Depart Forks
1. Go South West on US 101 (S Forks Ave) toward A St SW/A St (1.23 Mile (s))
Arrive at Point (N 47° 56.236' / W 124° 23.764'), on the left

Strategy Sites Served:
OC-07(Marine)
OC-08(Marine)
OC-12(Marine)
OC-13(Marine)

Lat/Long:	N 47° 36.292' / W 124° 22.358', Sector Map OC-9
Staging Description:	If boom is being carried by hand - staging area is parking in front of the beach access site in the cabin beach area. Campground to the south has parking for shoreline trailer and access to beach. Jon boat if used would need to be launched from bridge (HWY101) or with ATV from beach. Responders would need ATV to transport 20 inch boom.
Site Contacts:	High Priority: Contact before entering or immediate notification required. Kalaloch Lodge, W 866.525.2562



Closest Address:
157151 Highway 101, Forks

Driving Directions:
Depart Forks
1. Go South on US 101 (S Forks Ave) (34.34 Mile(s))
2. Turn right on Unnamed St (0.11 Mile(s))
Arrive at Point (N 47° 36.292' / W 124° 22.358'), on the right

Strategy Sites Served:
OC-18(Marine)
OC-19(Marine)
OC-20(Marine)

Lat/Long:	N 47° 54.791' / W 124° 38.047', Sector Map OC-6
Staging Description:	Station facilities include barracks, gym, operations and administrative buildings, all constructed on tribal land under a 50-year lease. In addition, a covered mooring for one motor lifeboat was completed in October 1989.
Site Contacts:	High Priority: Contact before entering or immediate notification required. USCG - Quillayute River, W 360 374-6469



Closest Address:

Driving Directions:

Depart Forks

1. Go South on US 101 (S Forks Ave) toward A St SW/A St (0.04 Mile(s))
2. Make U-turn at A St SW/A St and go back on US 101 (S Forks Ave) (1.58 Mile(s))
3. Turn left on SR 110 (La Push Rd) (13.87 Mile(s))
4. Make sharp right on Alder St (0.06 Mile(s))
5. Turn left on Church Rd (0.07 Mile(s))
6. Turn right on Quillayute St (Quillayute St) (0.04 Mile(s))
7. Turn left on Quillayute St (0.25 Mile(s))

Arrive at Point (N 47° 54.791' / W 124° 38.047'), on the right

Strategy Sites Served:

OC-09(Marine)
OC-10(Marine)
OC-11(Marine)

Lat/Long:	N 47° 20.588' / W 124° 17.240', Sector Map OC-11
Site Contacts:	High Priority: Contact before entering or immediate notification required. Tribe QUINAULT NATION, W 360/276-4422, H 360/276-8211



Closest Address:

Driving Directions:

Depart Moclips
 1. Go West on Otis Ave E toward SR 109 (0.03 Mile(s))
 2. Turn right on SR 109 (8.22 Mile(s))
 3. Continue on 5th Ave (0.14 Mile(s))
 4. Continue on Unnamed St (0.41 Mile(s))
 Arrive at Point (N 47° 20.588' / W 124° 17.24'), on the right

Strategy Sites Served:

- OC-21(Marine)
- OC-22(Marine)
- OC-23(Marine)
- OC-24(Marine)
- OC-32(Marine)
- OC-33(Marine)
- OC-34(Marine)

Lat/Long:	N 47° 33.983' / W 124° 21.679', Sector Map OC-9
Site Contacts:	High Priority: Contact before entering or immediate notification required. Olympic National Park Dispatch, W 360-565-3000x0



Closest Address:

Driving Directions:
 Depart Forks
 1. Go South on US 101 (S Forks Ave) (37.08 Mile(s))
 Arrive at Point (N 47° 33.983' / W 124° 21.679'), on the left

Strategy Sites Served:
 OC-25(Marine)
 OC-26(Marine)
 OC-27(Marine)
 OC-28(Marine)
 OC-29(Marine)
 OC-30(Marine)
 OC-31(Marine)

5. Shoreline Information

5.1. Shoreline Types and Sensitivity

The type of shoreline, degree of exposure to waves and currents, and biological sensitivity are the main criteria for selecting appropriate treatment techniques. Each shoreline type has particular properties (including vegetation types) which facilitate or resist the penetration and persistence of oil. Areas of comparatively uniform sediment type and grain size experience a deeper penetration of oil. Grain size definitions are:

Mud	<0.0625 mm
Fine Sand	0.0625 - 2 mm
Medium to Coarse Sand	2 -4 mm
Pebble/Cobble	4 - 256 mm

Persistence of oil in a particular area is directly related to the intensity of wave action, tides, and currents. Based on numerous oil spill studies of shoreline characteristics, treatment, and oil impact, the matrices in Chapter 6 were formulated following the basic prototype of the Environmental Sensitivity Index Atlas.

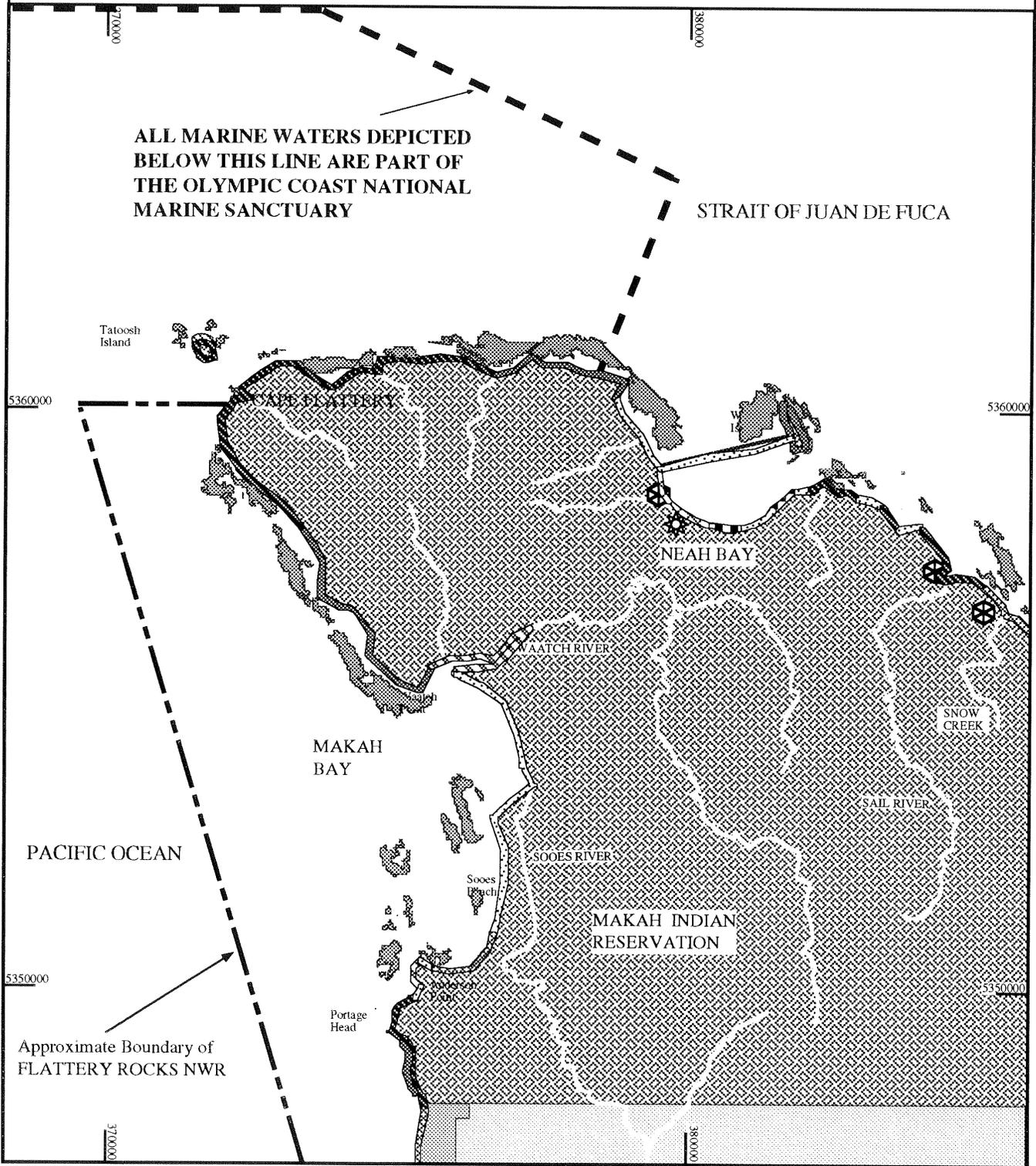
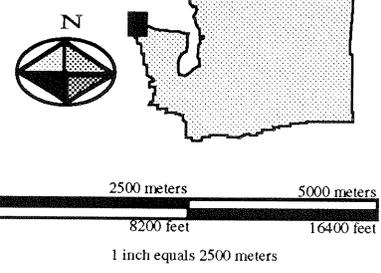
The environmental sensitivity index (ESI) system ranks coastal environments on a scale of 1-10 or 11 (less sensitive to more sensitive) with respect to oil spill sensitivity and potential biological injury is being used for mapping extensive areas of the coastline of the U.S.. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, rank low on the scale while sheltered areas have the highest ranking. The shoreline types used in this manual are a combination of the two similar systems used for the Delaware/Pennsylvania/New Jersey ESI Atlas, and the Maryland and Virginia atlases. The numbering system for the Countermeasure Manual Shoreline Types does not correspond exactly to either atlas; however, the corresponding shoreline types can be identified easily from the ESI maps and reassigned the appropriate number (after field verification.) The shoreline ranking system provides a useful first step in the design of contingency plans because it identifies the priority areas that require maximum effort for protection and cleanup. Strike teams and contractors with this document can focus their activities on environmental priorities, particularly during the first few hours and days of the spill.⁹

⁹Regional Response Team III. Draft, *Shoreline Countermeasures Manual*. (Department of the Interior, March 22, 1991).

CAPE FLATTERY SHORELINE TYPES

OUTER COAST GRP

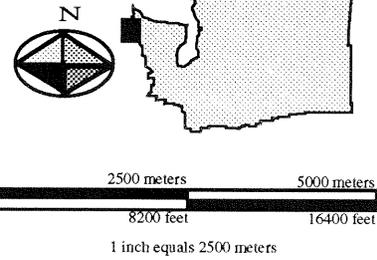
- | | | | |
|---|----------------------------------|---|----------------------------|
|  | EXPOSED ROCKY SHORE (OR SEAWALL) |  | GRAVEL/COBBLE/RIPRAP BEACH |
|  | WAVE-CUT PLATFORM |  | EXPOSED TIDAL FLAT |
|  | FINE GRAINED BEACH |  | SHELTERED ROCKY FLAT |
|  | COARSE GRAINED BEACH |  | SHELTERED TIDAL FLAT |
|  | SAND/GRAVEL BEACH |  | MARSH |
|  | Park |  | KELP |
|  | Reservation |  | Boat Launch |
|  | Town or City |  | USFWS Refuge Boundary |



CAPE ALAVA SHORELINE TYPES

OUTER COAST GRP

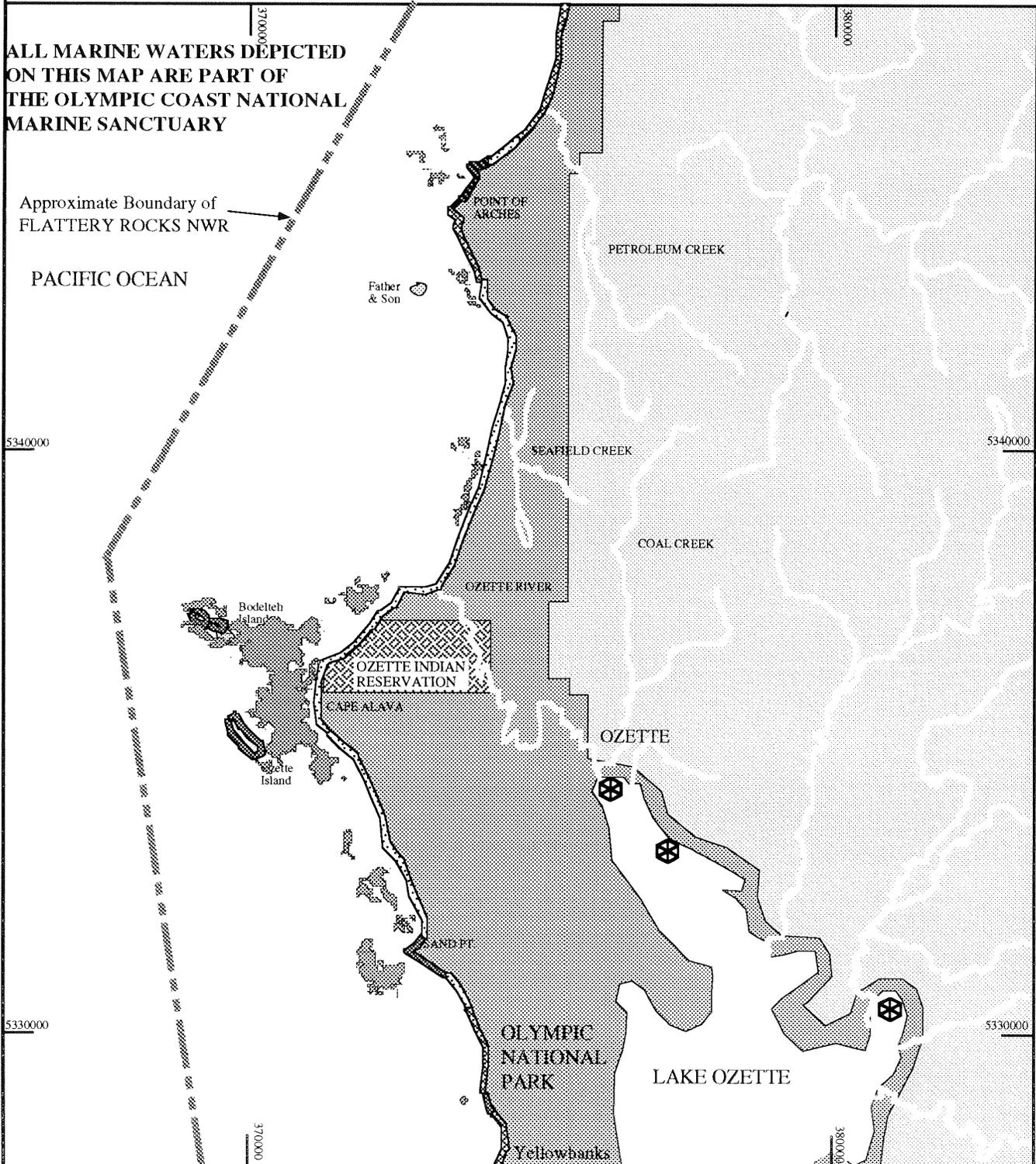
- | | | | |
|--|----------------------------------|--|----------------------------|
| | EXPOSED ROCKY SHORE (OR SEAWALL) | | GRAVEL/COBBLE/RIPRAP BEACH |
| | WAVE-CUT PLATFORM | | EXPOSED TIDAL FLAT |
| | FINE GRAINED BEACH | | SHELTERED ROCKY FLAT |
| | COARSE GRAINED BEACH | | SHELTERED TIDAL FLAT |
| | SAND/GRAVEL BEACH | | MARSH |
| | Park | | KELP |
| | Reservation | | Boat Launch |
| | Town or City | | USFWS Refuge Boundary |



ALL MARINE WATERS DEPICTED
ON THIS MAP ARE PART OF
THE OLYMPIC COAST NATIONAL
MARINE SANCTUARY

Approximate Boundary of
FLATTERY ROCKS NWR

PACIFIC OCEAN

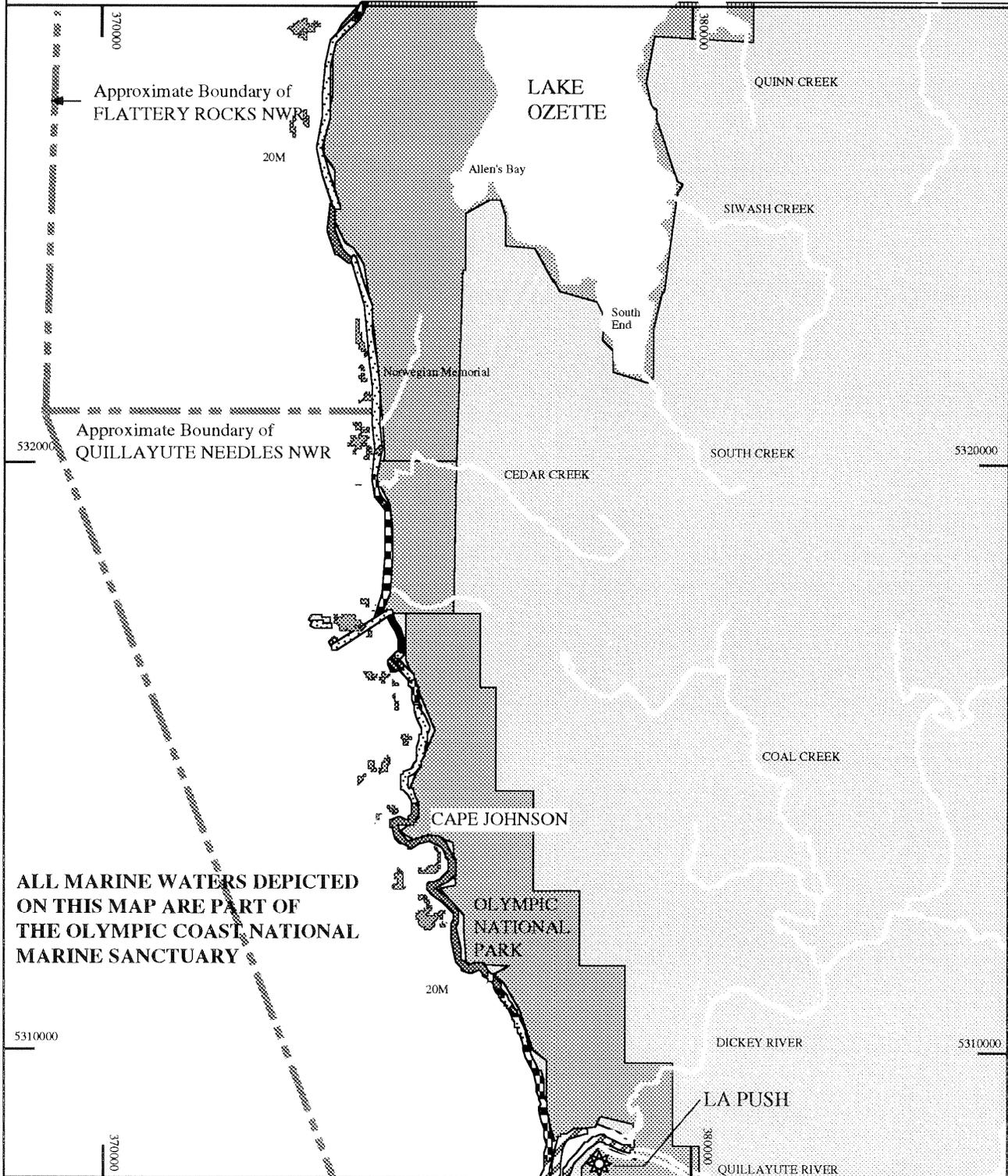
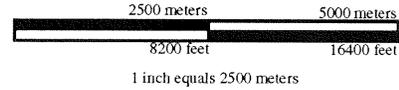
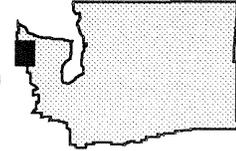


SOUTH LAKE OZETTE

OUTER COAST GRP

SHORELINE TYPES

- | | | | |
|--|----------------------------------|--|----------------------------|
| | EXPOSED ROCKY SHORE (OR SEAWALL) | | GRAVEL/COBBLE/RIPRAP BEACH |
| | WAVE-CUT PLATFORM | | EXPOSED TIDAL FLAT |
| | FINE GRAINED BEACH | | SHELTERED ROCKY FLAT |
| | COARSE GRAINED BEACH | | SHELTERED TIDAL FLAT |
| | SAND/GRAVEL BEACH | | MARSH |
| | Park | | KELP |
| | Reservation | | Boat Launch |
| | Town or City | | USFWS Refuge Boundary |



LA PUSH

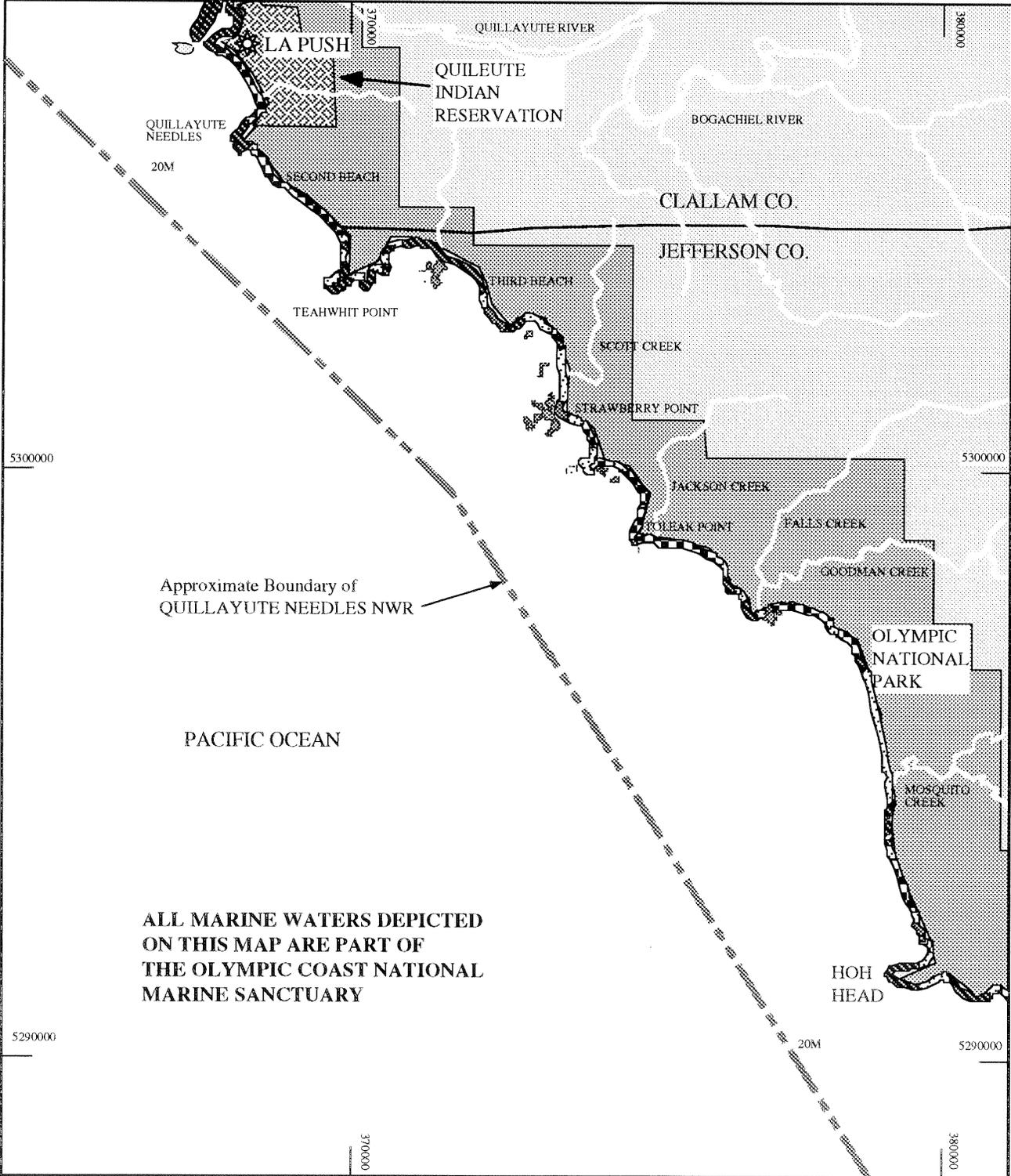
SHORELINE TYPES

OUTER COAST GRP

- | | | | |
|---|----------------------------------|---|----------------------------|
|  | EXPOSED ROCKY SHORE (OR SEAWALL) |  | GRAVEL/COBBLE/RIPRAP BEACH |
|  | WAVE-CUT PLATFORM |  | EXPOSED TIDAL FLAT |
|  | FINE GRAINED BEACH |  | SHELTERED ROCKY FLAT |
|  | COARSE GRAINED BEACH |  | SHELTERED TIDAL FLAT |
|  | SAND/GRAVEL BEACH |  | MARSH |
|  | Park |  | KELP |
|  | Reservation |  | Boat Launch |
| | |  | Town or City |
| | |  | USFWS Refuge Boundary |



2500 meters 5000 meters
8200 feet 16400 feet
1 inch equals 2500 meters

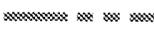


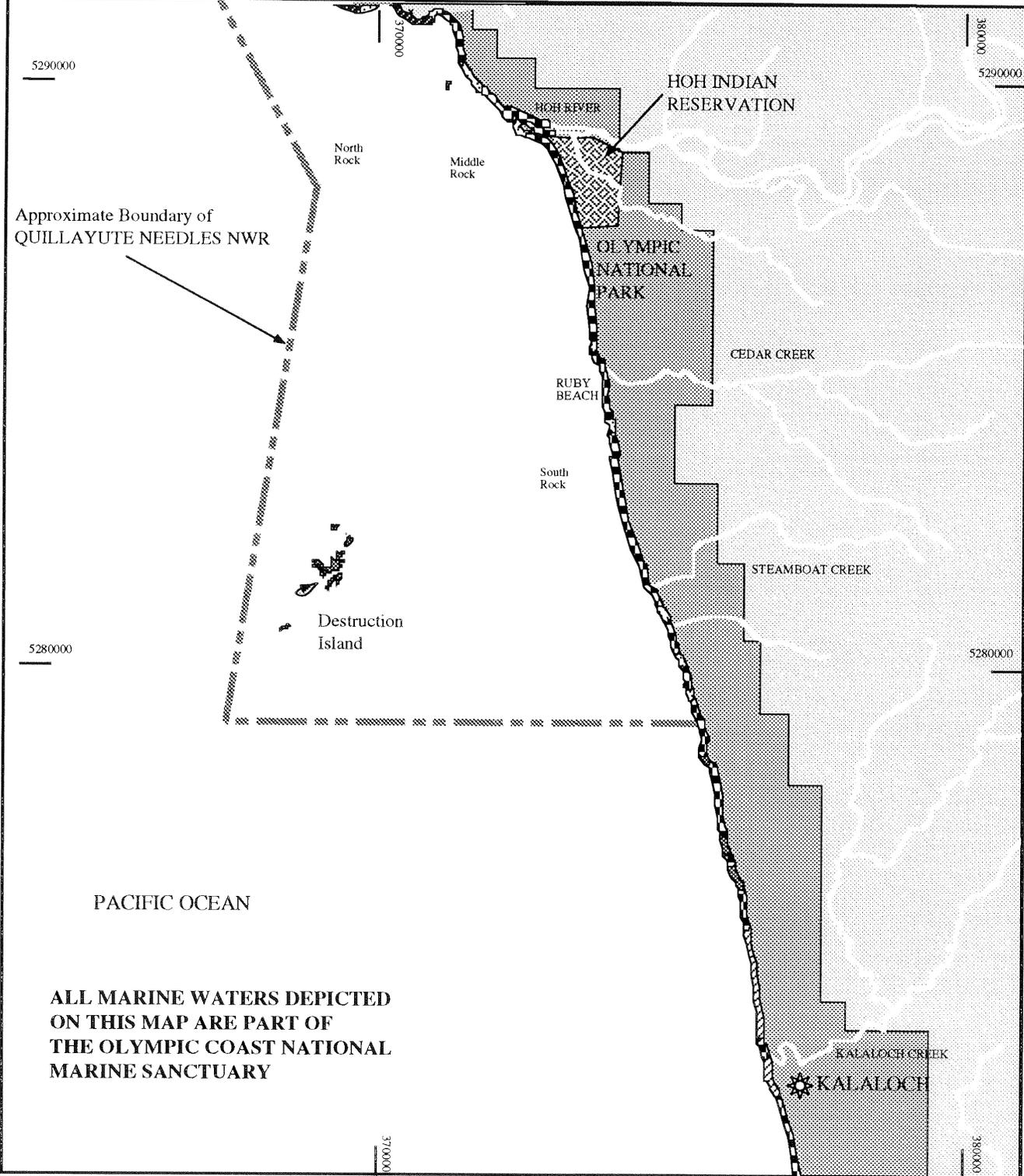
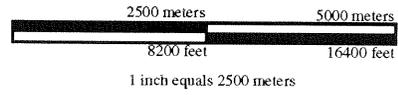
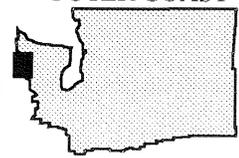
ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

HOH RIVER

OUTER COAST GRP

SHORELINE TYPES

- | | | | |
|---|----------------------------------|---|----------------------------|
|  | EXPOSED ROCKY SHORE (OR SEAWALL) |  | GRAVEL/COBBLE/RIPRAP BEACH |
|  | WAVE-CUT PLATFORM |  | EXPOSED TIDAL FLAT |
|  | FINE GRAINED BEACH |  | SHELTERED ROCKY FLAT |
|  | COARSE GRAINED BEACH |  | SHELTERED TIDAL FLAT |
|  | SAND/GRAVEL BEACH |  | MARSH |
|  | Park |  | KELP |
|  | Reservation |  | Boat Launch |
| | |  | Town or City |
| | |  | USFWS Refuge Boundary |



PACIFIC OCEAN

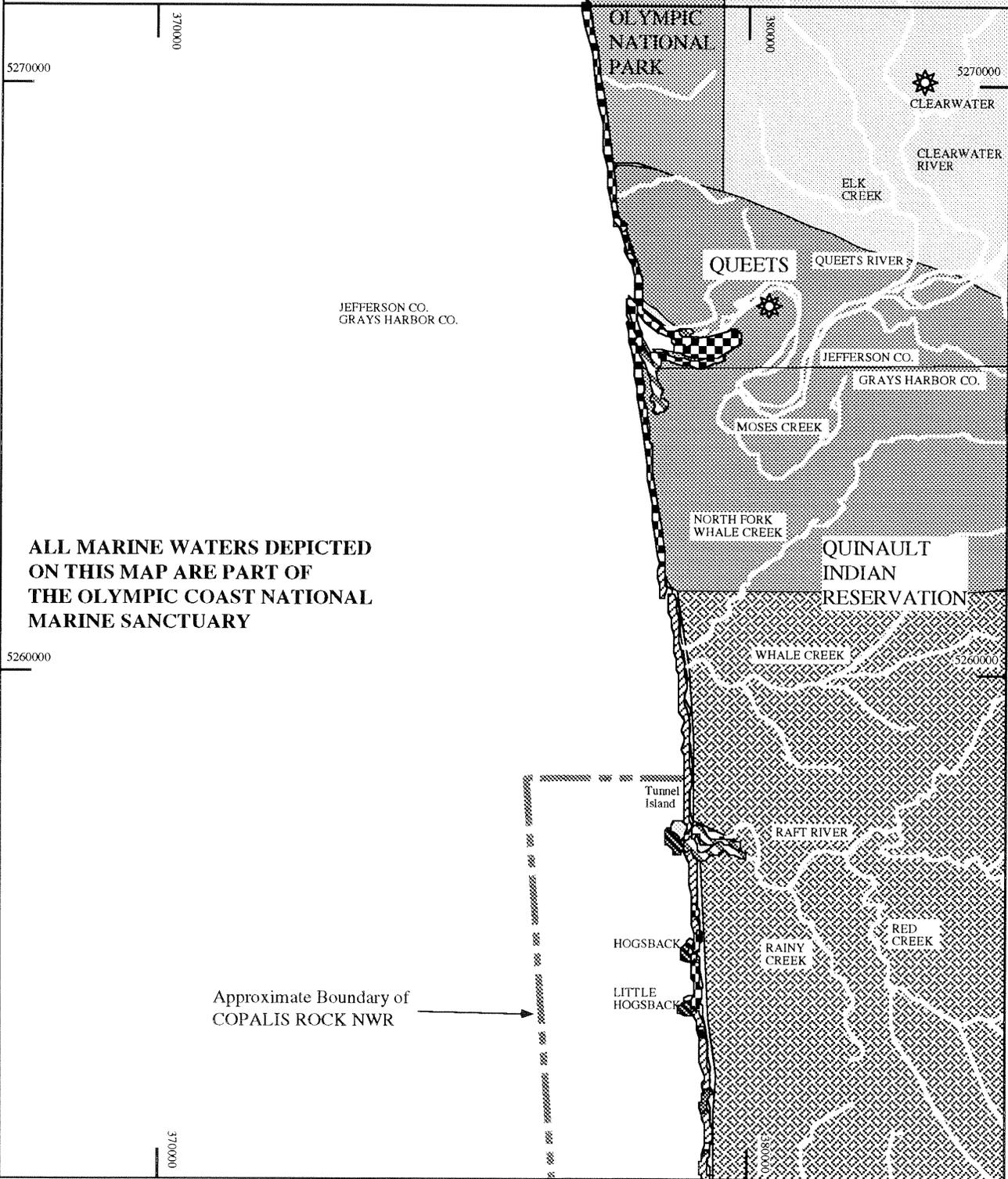
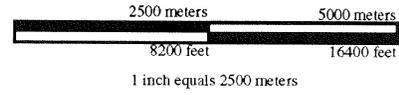
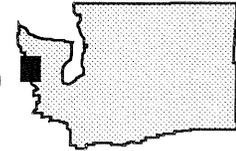
**ALL MARINE WATERS DEPICTED
ON THIS MAP ARE PART OF
THE OLYMPIC COAST NATIONAL
MARINE SANCTUARY**

QUEETS

OUTER COAST GRP

SHORELINE TYPES

- | | | | |
|--|----------------------------------|--|----------------------------|
| | EXPOSED ROCKY SHORE (OR SEAWALL) | | GRAVEL/COBBLE/RIPRAP BEACH |
| | WAVE-CUT PLATFORM | | EXPOSED TIDAL FLAT |
| | FINE GRAINED BEACH | | SHELTERED ROCKY FLAT |
| | COARSE GRAINED BEACH | | SHELTERED TIDAL FLAT |
| | SAND/GRAVEL BEACH | | MARSH |
| | Park | | KELP |
| | Reservation | | Boat Launch |
| | Town or City | | USFWS Refuge Boundary |



ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

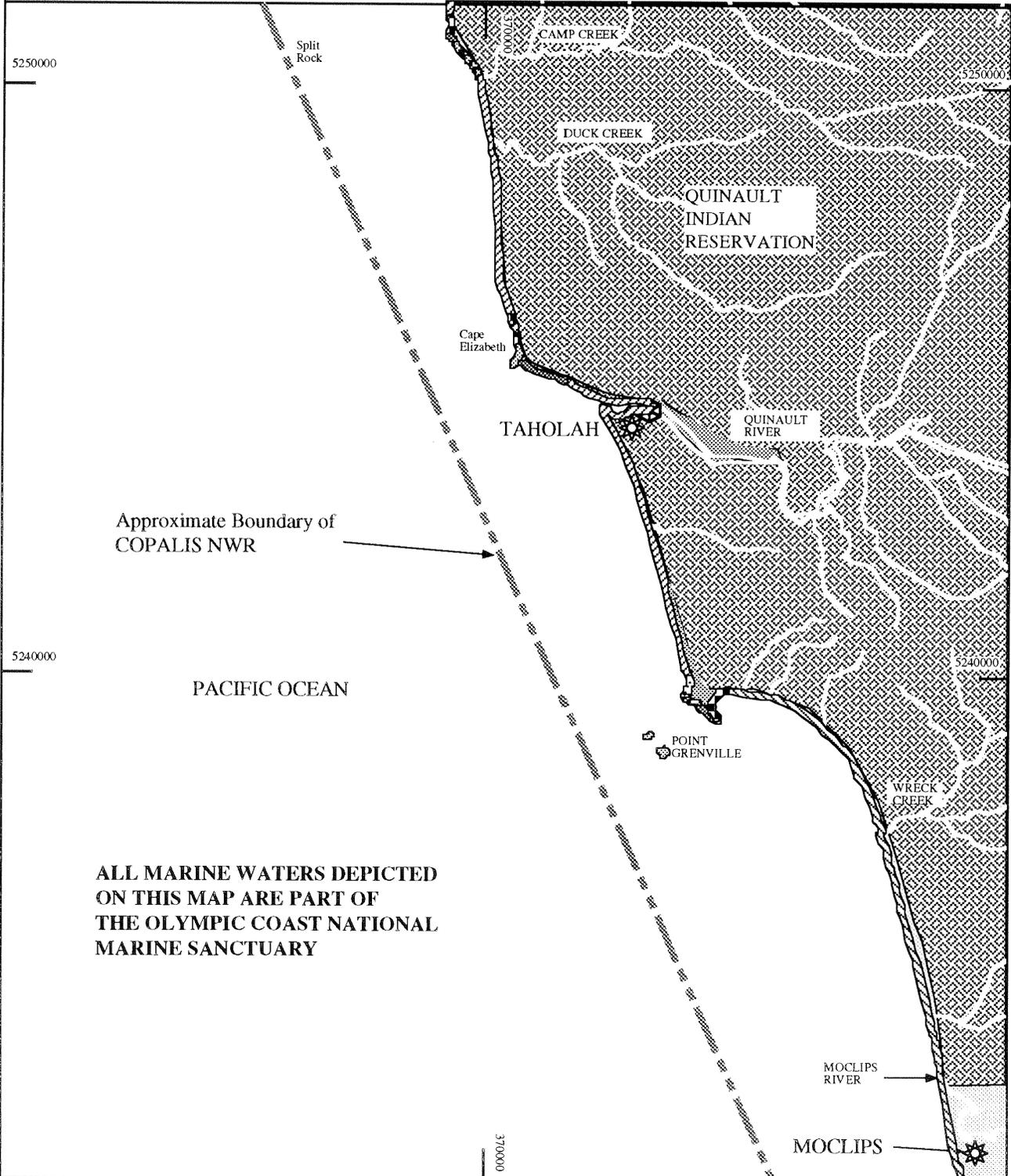
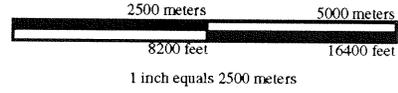
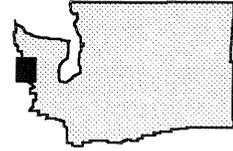
Approximate Boundary of COPALIS ROCK NWR

QUINAULT

OUTER COAST GRP

SHORELINE TYPES

- | | | | |
|--|----------------------------------|--|----------------------------|
| | EXPOSED ROCKY SHORE (OR SEAWALL) | | GRAVEL/COBBLE/RIPRAP BEACH |
| | WAVE-CUT PLATFORM | | EXPOSED TIDAL FLAT |
| | FINE GRAINED BEACH | | SHELTERED ROCKY FLAT |
| | COARSE GRAINED BEACH | | SHELTERED TIDAL FLAT |
| | SAND/GRAVEL BEACH | | MARSH |
| | Park | | KELP |
| | Reservation | | USFWS Refuge Boundary |
| | Boat Launch | | |
| | Town or City | | |



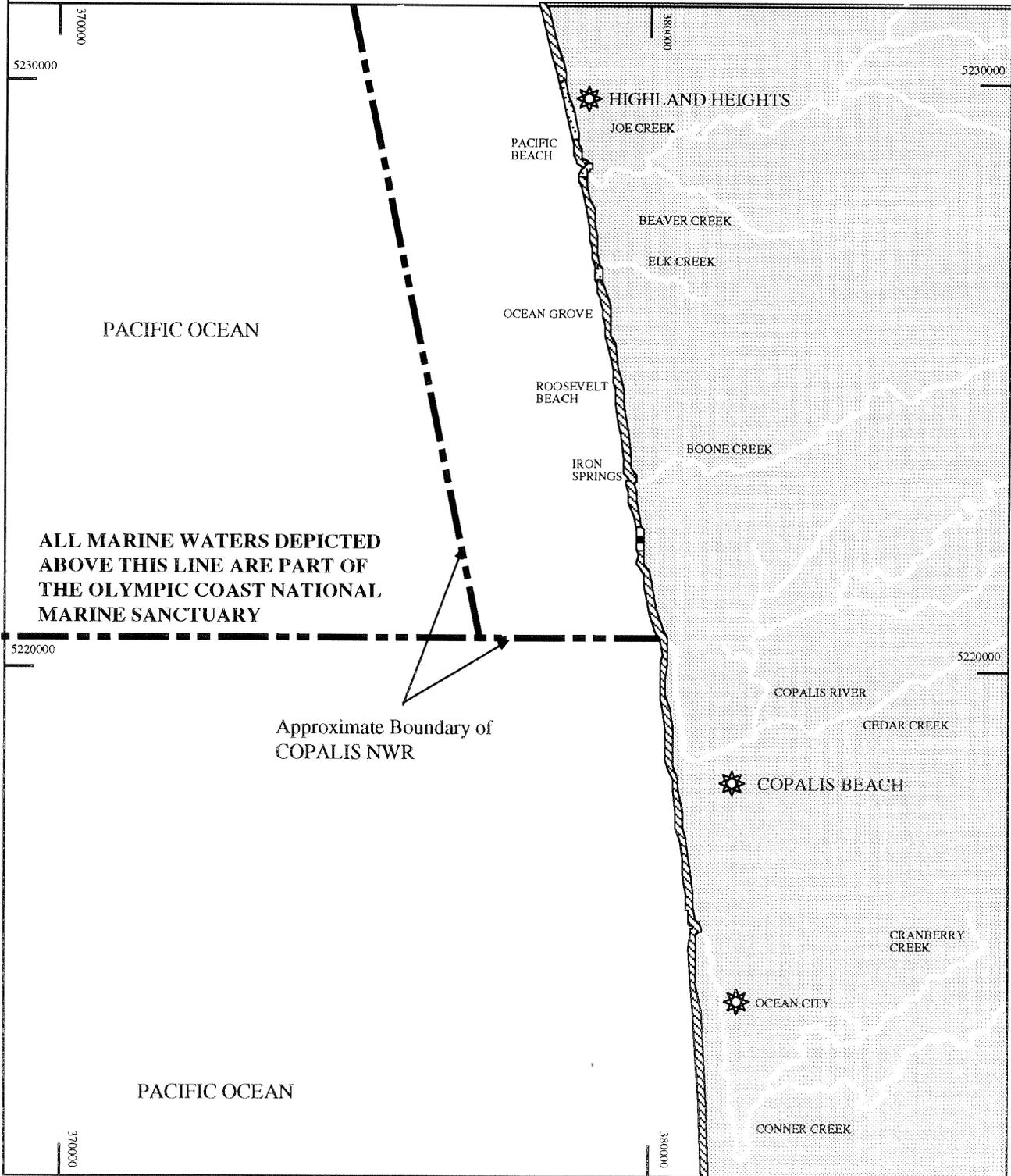
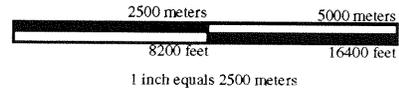
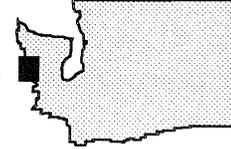
ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

COPALIS BEACH

OUTER COAST GRP

SHORELINE TYPES

- | | | | |
|--|----------------------------------|--|----------------------------|
| | EXPOSED ROCKY SHORE (OR SEAWALL) | | GRAVEL/COBBLE/RIPRAP BEACH |
| | WAVE-CUT PLATFORM | | EXPOSED TIDAL FLAT |
| | FINE GRAINED BEACH | | SHELTERED ROCKY FLAT |
| | COARSE GRAINED BEACH | | SHELTERED TIDAL FLAT |
| | SAND/GRAVEL BEACH | | MARSH |
| | Park | | KELP |
| | Reservation | | Boat Launch |
| | Town or City | | USFWS Refuge Boundary |



5.3 Shoreline Countermeasure Matrices

The matrices included here show which shoreline countermeasure techniques have been considered for the fourteen shoreline types described in Chapter 2 of the “Shoreline Countermeasures Manual & Matrices”, Northwest Area Plan, Chapter 9650, Page 9-37. Four matrices have been constructed for the major categories of oil (heavy, medium, light, very light).

Countermeasure methods are described in Chapters 3 and 4 of the manual. Countermeasures in Chapter 3 are traditional or conventional techniques that the OSC can use without any additional concurrence. However, the cutting of vegetation countermeasure should be used only during specific seasonal windows under specific conditions and with landowner approval. Countermeasures in Chapter 4 are described under a separate section called “Shoreline Countermeasure Methods Using Alternative Technology” may be useful in certain situations. These methods are considered more experimental and controversial in their application and potential impacts and require more formal review and consultation before implementing. The exact requirements are spelled out in the National Contingency Plan and the Northwest Area Plan. The Shoreline Countermeasures Matrices are a particularly dynamic component of the manual and should continue to be revised as the existing techniques are used and evaluated, and as both old and new techniques are refined.

Each matrix has a written explanation of how it is to be used as a countermeasure advisability matrix. The matrices are only a general guide for removing oil from shoreline substrates. They must be used in conjunction with the entire “Shoreline Countermeasures Manual” plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the State OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered.

Selection of countermeasure techniques to be used in each spill is based upon the degree of oil contamination, shoreline types, and the presence of sensitive resources. Extremely sensitive areas are generally limited to manual cleanup methods. It is important to note that the primary goal of countermeasure implementation is the removal of oil from the shoreline with no further injury or destruction to the environment. The three categories of guidance used in the matrices are defined as follows:

R	Recommended	May be the preferred method that best achieves the goal of minimizing destruction or injury to the environment
C	Conditional	Viable and possibly useful but may result in limited adverse effects to the environment
	Shaded	Not applicable or not generally recommended.

SHORELINE COUNTERMEASURES MATRIX

Heavy Oil (Heavy Crude Oils, Intermediate Fuel Oils, Bunker C & Heavily Weathered Medium Crudes)

- Heavy oils with little or no evaporation or dissolution
- Water-soluble fraction likely to be <10ppm
- Heavy contamination of intertidal areas likely
- Severe impacts to waterfowl and fur-bearing mammals (coating and ingestion)
- Long-term contamination to sediments possible
- Weathers very slowly
- Dispersion seldom effective
- Shoreline cleanup difficult under all conditions

SHORELINE TYPES CODES

1- Exposed rock shores and vertical, hard man-made structure (e.g. seawalls) 2 - Exposed wave-cut platforms 3 - Fine to medium grained sand beaches & steep unvegetated river banks 4 - Course grained sand beaches 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material 6A - Gravel beaches - pebbles to cobble	6B - Gravel beaches - cobbles to boulders 6C - Exposed rip rap 7 - Exposed tidal flat 8A- Sheltered vertical rock shores and vertical, hard man-made structures (e.g. seawalls, docks, bulkheads) 8B - Sheltered rubble slope 9A - Sheltered sand and mud flats 9B - Sheltered vegetated low bank 10 - Marshes
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SHORELINE TYPES

COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	C	C	C	C	C	C	C	C	R	C	C	R	C	R
Manual removal of oil	C	R	R	R	R	C	C	C		R	R		C	C
Passive collection of oil	R	R	R	R	R	R	R	R	C	R	R	C	R	R
Oiled debris removal	C	R	R	R	R	R	R	R	C	R	R	C	R	C
Trenching/recovery wells			C	C	C									
Oiled sediment removal			C	C	C	C		C					C	
Ambient water flooding (Deluge)			C	C	C	R	R	R		R	R		C	C
Amb water flush <50 psi	C	C			C	R	C	R		C	C		C	C
Amb water flush <100 psi	C	C					C	C		C	C			
Warm water flush <90°F	C						C	C		C				
Hot water flush >90°F	C									C				
Vacuum removal of oil	C	C	C	C	C	C	C	C		C	C		C	C
Sediment reworking			C	C	C	C								
Sediment Removal-cleaning-replacement			C	C	C	C		C						
Cutting oiled vegetation							C	C		C	C		C	C
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, cleaning														
Nutrient enhancement			C	C	C	C	C	C						C
Microbial addition														

- R** Recommend - May be Preferred Alternative
C Conditional (Refer to NW Shoreline Countermeasures Manual)
 Shaded areas are Not Applicable or Not Generally Recommended
 * Follow approved process defined in NCP and NW Area Plan

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources.

SHORELINE COUNTERMEASURES MATRIX

Medium Oil (Most Crude Oils & Some Heavily Weathered Light Crudes)

- About 1/3 will evaporate within 24 hours
- Maximum water-soluble fraction is 10-100ppm
- Oil contamination of intertidal areas can be severe and long-term
- Impact to waterfowl and fur-bearing mammals can be severe
- Chemical dispersion is an option within 1-2 days
- Cleanup most effective if conducted quickly

SHORELINE TYPES CODES

1- Exposed rock shores and vertical, hard man-made structure (e.g. seawalls) 2 - Exposed wave-cut platforms 3 - Fine to medium grained sand beaches & steep unvegetated river banks 4 - Course grained sand beaches 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material 6A - Gravel beaches - pebbles to cobble	6B - Gravel beaches - cobbles to boulders 6C - Exposed rip rap 7 - Exposed tidal flat 8A- Sheltered vertical rock shores and vertical, hard man-made structures (e.g. seawalls, docks, bulkheads) 8B - Sheltered rubble slope 9A - Sheltered sand and mud flats 9B - Sheltered vegetated low bank 10 - Marshes
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SHORELINE TYPES

COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	C	C	C	C	C	C	C	C	R	C	C	R	C	R
Manual removal of oil	C	R	R	R	R	C	C	C		R	R		C	C
Passive collection of oil	R	R	R	R	R	R	R	R	C	R	R	R	R	R
Oiled debris removal	C	R	R	R	R	R	R	R	C	R	R	C	R	C
Trenching/recovery wells			C	C	C									
Oiled sediment removal			C	C	C	C							C	
Ambient water flooding (Deluge)			C	C	C	R	R	R		R	R		C	C
Amb water flush <50 psi	C	C			C	R	C	R		R	R		C	C
Amb water flush <100 psi	C	C					C	C		C				
Warm water flush <90°F	C						C	C		C				
Hot water flush >90°F	C									C				
Vacuum removal of oil	C	C	R	R		C	R	R		C	C		C	C
Sediment reworking			C	C	C	C								
Sediment Removal-cleaning-replacement			C	C	C	C		C			C			
Cutting oiled vegetation							C	C		C	C		C	C
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, cleaning														
Nutrient enhancement			C	C	C	C	C	C			C			C
Microbial addition														

- R** Recommend - May be Preferred Alternative
- C** Conditional (Refer to NW Shoreline Countermeasures Manual)
- Shaded areas are Not Applicable or Not Generally Recommended
- * Follow approved process defined in NCP and NW Area Plan

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources.

SHORELINE COUNTERMEASURES MATRIX

Light Oil (Diesel, No 2 Fuel Oils, Light Crudes)

- Moderately volatile; will leave residue (up to 1/3 of spilled amount)
- Moderate concentrations of toxic (soluble) compounds
- Long-term contamination of intertidal resources possible
- Potential for subtidal impacts (dissolution, mixing, sorption onto suspended sediments)
- No dispersion necessary
- Cleanup can be very effective

SHORELINE TYPES CODES

1- Exposed rock shores and vertical, hard man-made structure (e.g. seawalls) 2 - Exposed wave-cut platforms 3 - Fine to medium grained sand beaches & steep unvegetated river banks 4 - Course grained sand beaches 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material 6A - Gravel beaches - pebbles to cobble	6B - Gravel beaches - cobbles to boulders 6C - Exposed rip rap 7 - Exposed tidal flat 8A- Sheltered vertical rock shores and vertical, hard man-made structures (e.g. seawalls, docks, bulkheads) 8B - Sheltered rubble slope 9A - Sheltered sand and mud flats 9B - Sheltered vegetated low bank 10 - Marshes
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SHORELINE TYPES

COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	R	R	C	C	C	C	C	C	R	C	C	R	C	R
Manual removal of oil			C	C	C	C	C	C		R	R		C	
Passive collection of oil	C	R	C	R	R	C	R	R						
Oiled debris removal	C	C	R	R	R	R	R	R	C	R	R	C	C	C
Trenching/recovery wells			C	C	C									
Oiled sediment removal			C	C	C	C								
Ambient water flooding (Deluge)			C	C	C	R	R	R			C			C
Amb water flush <50 psi		C			C	C	C	C		R	C			C
Amb water flush <100 psi														
Warm water flush <90°F														
Hot water flush >90°F														
Vacuum removal of oil							C	C						C
Sediment reworking			C	C	C	C								
Sediment Removal-cleaning-replacement			C	C	C									
Cutting oiled vegetation							C	C		C	C		C	C
ALTERNATIVE METHODS*														
In-situ burning of shore														
Chemical stabilization, protection, cleaning														
Nutrient enhancement			C	C	C	C	C	C						C
Microbial addition														

- R** Recommend - May be Preferred Alternative
C Conditional (Refer to NW Shoreline Countermeasures Manual)
 Shaded areas are Not Applicable or Not Generally Recommended
 * Follow approved process defined in NCP and NW Area Plan

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources.

SHORELINE COUNTERMEASURES MATRIX

Very Light Oil (Jet fuels, Gasoline)

- Highly volatile (should all evaporate within 1-2 days)
- High concentration of toxic (soluble) compounds
- Result: Localized, severe impacts to water column and intertidal resources
- Duration of impact is a function of the resource recovery rate
- No dispersion necessary

SHORELINE TYPES CODES

1- Exposed rock shores and vertical, hard man-made structure (e.g. seawalls) 2 - Exposed wave-cut platforms 3 - Fine to medium grained sand beaches & steep unvegetated river banks 4 - Course grained sand beaches 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material 6A - Gravel beaches - pebbles to cobble	6B - Gravel beaches - cobbles to boulders 6C - Exposed rip rap 7 - Exposed tidal flat 8A- Sheltered vertical rock shores and vertical, hard man-made structures (e.g. seawalls, docks, 8B - Sheltered rubble slope 9A - Sheltered sand and mud flats 9B - Sheltered vegetated low bank 10 - Marshes
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SHORELINE TYPES

COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Manual removal of oil														
Passive collection of oil			C	C	C	C	C	C						
Oiled debris removal	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Trenching/recovery wells			C	C	C									
Oiled sediment removal														
Ambient water flooding (Deluge)														C
Amb water flush <50 psi														
Amb water flush <100 psi														
Warm water flush <90°F														
Hot water flush >90°F														
Vacuum removal of oil														
Sediment reworking			C	C	C	C								
Sediment Removal-cleaning-replacement														
Cutting oiled vegetation														
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, cleaning														
Nutrient enhancement														
Microbial addition														

- R** Recommend - May be Preferred Alternative
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Purpose of Chapter 6

The information presented in this chapter highlights some of the more significant environmentally sensitive areas within the GRP region that could be impacted as a result of an oil spill. Consistent with the overall purpose of the GRP's, this information is only intended to provide a level of detail required during the initial phase of spill response. During an actual event, additional resource information will be available from the resource trustee agencies supporting the Environmental Unit in the Planning Section. Specific resource concerns for areas that already have designated protection strategies in Chapter 4 of the GRP may be found in the "Resources Protected" column in the matrix describing the individual strategies.

The information provided in Chapter 6 is intended for use in:

- Preparing an initial ICS 232 form (Resources-at-Risk summary) for Incident Command
- Identifying those sites where it may be necessary to implement Flight Restriction Zones in order to prevent disturbance/injury to sensitive wildlife species.
- Identifying sensitive shoreline habitats to assist SCAT teams in their initial assessments and to help personnel in the Environmental Unit in developing appropriate cleanup strategies.

Chapter 6 consists of two sets of maps and tables - one for wildlife and the other for fish, shellfish and selected sensitive marine habitats. These data are presented separately, both for ease of reading and because each of the two data sets has slightly different applications within the context of spill response.

The wildlife maps and tables present information on the location and seasonal sensitivity of key wildlife resources. Types of data included here are concentration areas for waterfowl, marine birds and shorebirds; seabird colonies; nesting areas for sensitive species such as eagles, herons and falcons; and marine mammal haulout sites. This information is intended for the rapid identification of areas where significant wildlife oiling impacts could be anticipated and to denote areas where flight restriction zones may be required to protect sensitive wildlife. Each site depicted on these maps is identified by a unique number in order to facilitate the process of communicating Flight Restriction Zone recommendations to the Operations Section in ICS. The tables accompanying the wildlife maps present information on the season(s) during which sites may be particularly sensitive to disturbance.

The fish/shellfish/marine habitat maps present general information on the location of baitfish spawning beaches, herring spawning areas, streams used by anadromous salmonids, hardshell clam concentrations, and kelp and eelgrass beds. This information will be most useful to personnel involved in assessing initial risks to fish and shellfish resources and to those conducting initial beach reconnaissance, pending availability of more detailed resource information and the formation of SCAT teams.

Because the operational uses of this information differ from those of the wildlife data, individual site identification numbers have not been assigned. Tables associated with these maps will identify the seasonal sensitivity of each resource. In addition, notes accompanying each table will provide information on the general distribution and seasonal sensitivity of those resources that are not mapped but may occur anywhere in the GRP region (ex. juvenile salmonids in shallow nearshore waters).

6. Sensitive Resource Description

6.1. Fish and Wildlife*

Washington's outer coast possesses a variety of features which contribute to making the area especially valuable to fish and wildlife. These include a wide diversity of shoreline habitats, the presence of abundant food resources, exceptional water quality, minimal human disturbance, and the presence of nearshore kelp beds, rocks, islands, and reefs.

This region possesses most our state's significant seabird nesting colonies, our state's entire population of sea otters, and essential habitats for other marine mammals and birds. The area is also a temporary home to many such species that are seasonal residents or pass through the area during their migrations. Marine fish and invertebrates of the area, in addition to their own inherent value, provide an ample food base for these diverse and abundant populations of marine birds and mammals.

Birds

The coast of Washington teems with birds year around. Just offshore, a string of rocky, windswept islands from Cape Flattery to Point Grenville hosts large colonies of seabirds. Some of the more important of these inaccessible islands include Tatoosh, Bodeliteh, Carroll, Jagged, Quillayute Needles, Alexander, Destruction, Willoughby, Split, and the islands in the vicinity of Point Grenville. Three species of cormorants, Glaucous-winged Gulls and Common Murres breed on the islands' exposed, rocky ledges and flats. Other birds including Leach's and Fork-tailed Storm-petrels, Rhinoceros and Cassin's Auklets, and Tufted Puffins dig nesting burrows into the soft soil on the crests of the islands. Thousands of these seabirds were killed during the *Nestucca* and *Tenyo Maru* oil spills.

Many species that breed in other parts of the world spend a portion of their year along Washington's coast. Numerous species of loons, grebes, albatrosses, shearwaters, waterfowl, gulls and terns can be found foraging from the surf line to many miles offshore. While some species may be quite rare, others such as the Sooty Shearwater can number over one hundred thousand during the summer and fall months. Shorebirds can be found along most beaches, with their numbers highest from mid August through mid May. Sand and mud beaches are used by species including Sanderlings, Dunlins and Black-bellied Plovers. Black Turnstones and Surfbirds will use rocky shorelines and jetties. Black Oystercatchers, the only shorebird to breed in Washington's saltwater environment, can be found in all seasons on the rocky, intertidal habitats. The Marbled Murrelet, Bald Eagle, and Peregrine Falcon are three coastal breeders that are federally listed as Threatened or Endangered. All three are vulnerable during an oil spill. The murrelet by direct contact with oil while swimming and the two raptors by feeding on beached, oiled birds.

Marine Mammals

Six species of whales and dolphins regularly occur in this region's nearshore zone. The entire U.S population of gray whales migrates through Washington waters in the spring and fall. Many stop to feed intensively in shallow coastal waters during the northward migration in spring. Some individuals stay behind and inhabit Washington waters throughout the summer. Humpback whales are found in our waters primarily during the summer months and tend to concentrate west of the entrance to the Strait of Juan de Fuca. Harbor porpoise are common year round and may be found from the surf zone out to several miles offshore. Orcas, Dall's porpoise, and minke whales, while common residents, are less commonly observed because they tend to be more patchily distributed and generally occur further offshore. Numerous other species of whales or dolphins either occur further offshore (closer to the continental shelf) or have been recorded as rare or accidental within the region.

* Generated for the GRP by the Spill Response and Resource Protection Team of the Washington Department of Fish and Wildlife

With regard to seals and sea lions, this region is home to one permanent resident, the harbor seal. The islands and nearshore rocks of this region provide both pupping and resting sites for this, the most numerous of our state's pinnipeds. The largest seal haulouts occur at Destruction Island, Giant's Graveyard, Cape Johnson, and Cape Alava. Four additional species of pinniped occur as regular seasonal residents or migrants. These are the Steller sea lion (federally listed as threatened), California sea lion, northern fur seal, and northern elephant seal. As in the case of harbor seals, both sea lion species use nearshore islands and rocks as resting sites. Fur seals and elephant seals, on the other hand, very rarely come ashore in this area unless they are in distress. They instead occur further offshore where they both feed and rest in the water.

Washington's entire sea otter population, currently estimated at about 400 animals, occupies a range that extends roughly from Destruction Island to Cape Flattery. They are most commonly found within a mile or two of shore, especially in areas where beds of giant kelp occur. Here they feed on a wide variety of bottom-dwelling invertebrates. Because a sea otter's fur is its only protection against cold ocean waters, it is especially vulnerable to the effects of oiling - much more so than any other marine mammal. Washington's sea otter population is especially vulnerable because of its limited geographic range. This region also supports a large population of river otters which, although not classified as marine mammals, are largely marine in their habits. Most commonly found near the mouths of freshwater streams or along beaches, these animals also frequently swim in the intertidal zone and have been found as far as 3 miles offshore on Destruction Island.

Fish

The outer coast contains significant commercial and recreational fish resources. Nearshore kelp beds provide diverse habitat and offer protection to juvenile fish. Many species of rockfish dominate this kelp habitat, along with lingcod, kelp greenling, wolf eel, and cabezon. Chinook, Coho, Sockeye, Pink, and Chum salmon, as well as steelhead and sea-run cutthroat trout, inhabit outer coast waters. Other important fish in this area include albacore tuna, halibut, Pacific hake, Pacific cod, sablefish, pollock, and spiny dogfish. Tidepool sculpin, gunnels, pricklebacks, and other small fish thrive in the dynamic rocky intertidal zones. Flounder, sand lance, sole, sanddab, surf perch, and surf smelt are associated with sandy intertidal and subtidal habitat.

Marine Invertebrates

Cold, nutrient-rich upwelling off the outer coast nourishes high plant productivity nearshore, providing food and habitat for many invertebrates. Kelp beds and rocky reefs support subtidal invertebrates such as abalone, octopus, and scallops. Invertebrate diversity peaks in rocky intertidal areas, which hosts animals such as sponges, isopods, amphipods, barnacles, various bivalves, sea urchins, sea cucumbers, sea stars, polychaete worms, crabs, snails, and colorful nudibranchs. Other important intertidal invertebrates on the outer coast include sand dollars, Dungeness crabs, mud shrimp, and razor clams. In fact, the majority of recreational harvesting of razor clams in the contiguous United States occurs on Washington's outer coast.

6.2. Other Resources

Over 120 species of algae have been identified in the rocky intertidal areas of Washington's outer coast. Two species of brown algae dominate the extensive kelp forests of this area - bull kelp (*Nereocystis leutkeana*) and giant kelp (*Macrocystis integrifolia*). Bull kelp tends to inhabit more protected inshore waters, while giant kelp occurs in more exposed areas. Both species play a critical role in providing shelter and food resources to outer coast fish and wildlife.

The entire outer coast offers valuable recreational experiences - from the pristine wilderness shoreline protected within Olympic National Park to popular state park camping and shellfish gathering sites to the south. The early presence of humans in this area has also resulted in many sensitive archaeological/cultural sites - particularly in the vicinity of Cape Flattery, Cape Alava, and La Push. In addition to shell middens,

petroglyphs, and artifacts, the outer coast also hosts a number of less apparent sites which have important religious, traditional, historic, or subsistence values to local tribes.

6.3. Flight Restriction Zones

Flight restriction zones have been designated in the GRP to minimize disturbance to certain wildlife species. An identified location could represent a marine mammal haulout site, a seabird or heron colony, or the individual nest of a sensitive species such as bald eagle. While some zones may be restricted year around, others will be in effect only during the months listed in the matrix.

In general, the no-fly bubble is the area within a 1,500 foot radius and below 1,000 feet in altitude around the location. However, restrictions on flight are greater in this GRP zone due to the presence of the Olympic Coast National Marine Sanctuary, Olympic National Park, and the numerous National Wildlife Refuge sites in this area. Therefore, non-emergency response aircraft must stay above 2,000 feet in elevation within one nautical mile of shore or offshore islands unless otherwise authorized. All aircraft, including those from the government, contractors or media, are expected to avoid these zones when restrictions are in effect. During oil spills, pilots are also asked to avoid disturbing any large concentrations of birds and other wildlife. By keeping a safe distance or altitude, pilots can prevent the accidental hazing of unaffected wildlife into oiled areas and minimize the risk of aircraft/ bird collisions. Due to the density of coastal eagle nests in this region, pilots are asked to avoid low altitude flights over treeline adjacent to the beach. In addition to flight restrictions, boat and ground crews must also remain at least 200 yards away from the boundaries of any offshore National Wildlife Refuge rocks/islands or sensitive areas identified in Section 6.5. Tribal authorities also request notification when overflights may affect culturally-sensitive areas within reservation boundaries.

6.4. Hazing

Hazing or directed harassment, is a method used to drive or herd wildlife out of an area where they are at risk of becoming oiled. Hazing techniques include the use of visual and audio devices, personnel for herding, vessels and aircraft. In the right circumstances it can be effective in protecting some wildlife species. In other cases it can be disastrous as unaffected wildlife can be driven into oiled areas, or forced to abandon nests or young.

National Marine Fisheries Service staff or their designees will perform all hazing of marine mammals other than sea otters. Before hazing can begin for all other species of wildlife, clearance must be obtained from the Washington Department of Fisheries and Wildlife and the United States Fish and Wildlife Service. All hazing efforts during a spill will be directed by these agencies. The deliberate harassment of wildlife without first securing permission from these agencies is a violation of Federal and State laws.

The following information must be provided for a determination on whether hazing might be authorized in a given situation.

1. Description of the situation where hazing authorization is being sought
2. Location to be hazed
3. Species of wildlife to be hazed and number of animals
4. Methods and equipment used
5. Date and time of hazing
6. Name, phone number, radio frequency, pager number and the amount of hazing experience of the individual requesting permission

The responsible agencies will evaluate each request on a case by case basis. All hazing of marine mammals, threatened and endangered species, and all hazing by aircraft will be performed only under authority and general supervision of WDF&W, USFWS, NMFS or persons designated by these agencies. Representatives of these agencies can be contacted through the planning section of the Unified Command System during the spill event.

										Includes half the month											
CAPE FLATTERY FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE																					
NOAA Chart 18480																					
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WOC-1	Seal & Sail Rocks	Yes						Yes	[Shaded]												
WOC-2	Mushroom Rock					Yes		Yes	[Shaded]	[Shaded]											
WOC-3	Tatoosh Island	Yes	Yes		Yes	Yes		Yes	[Shaded]												
WOC-4	Fuca Pillar					Yes		Yes	[Shaded]	[Shaded]											
WOC-5	Portage Head					Yes		Yes	[Shaded]	[Shaded]											

FLIGHT AND GROUND ENTRY RESTRICTIONS	
[Shaded]	Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones
[Horizontal Lines]	Sensitive season - Minimize overflight disturbance
Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance	

CAPE FLATTERY

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

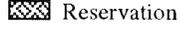
1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



Sensitive Wildlife Area



Park



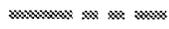
Reservation



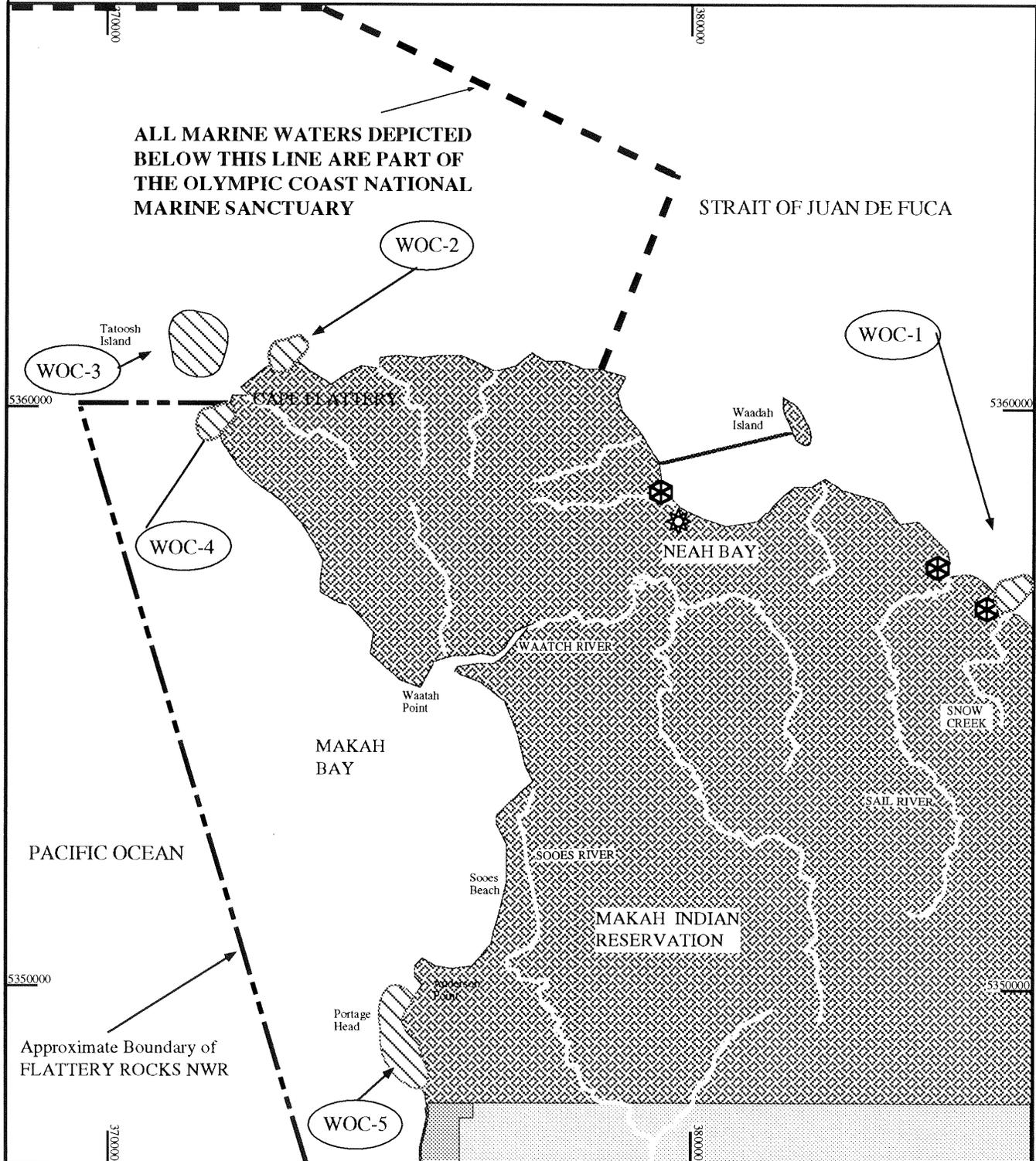
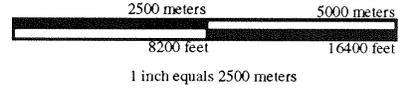
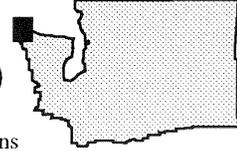
Boat Launch



Town or City



USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED BELOW THIS LINE ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

STRAIT OF JUAN DE FUCA

Approximate Boundary of FLATTERY ROCKS NWR

 Includes half the month

CAPE ALAVA FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

NOAA Chart 18480

Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec							
WOC-6	Point of Arches					Yes		Yes																			
WOC-7	Ozette/Bodelteh Islands	Yes	Yes		Yes	Yes	Yes	Yes																			
WOC-8	Cape Alava	Yes	Yes		Yes	Yes	Yes	Yes																			
WOC-9	White Rock	Yes	Yes					Yes																			
WOC-10	Sand Point				Yes		Yes	Yes																			

FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

 Sensitive season - Minimize overflight disturbance

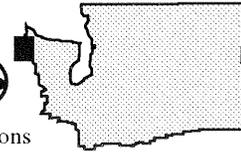
Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

CAPE ALAVA

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



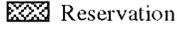
Sensitive Wildlife Area



Park



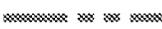
Boat Launch



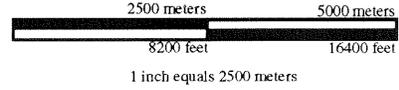
Reservation



Town or City



USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

Approximate Boundary of FLATTERY ROCKS NWR

PACIFIC OCEAN

WOC-6

Father & Son

POINT OF ARCHES

PETROLEUM CREEK

WOC-8

SEAFIELD CREEK

COAL CREEK

OZETTE RIVER

CAPE ALAVA

OZETTE INDIAN RESERVATION

OZETTE

WOC-9

SAND PT.

WOC-10

OLYMPIC NATIONAL PARK

LAKE OZETTE

Yellowbanks

										Includes half the month													
SOUTH LAKE OZETTE FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE																							
NOAA Chart 18480																							
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
WOC-11	Jagged Island	Yes				Yes	Yes	Yes	[Solid black shading]														
WOC-12	Carroll Islands	Yes	Yes		Yes		Yes																
WOC-13	Sea Lion Rock	Yes	Yes		Yes		Yes																
WOC-14	NW of Cape Johnson Rocks					Yes	Yes		[Horizontal line shading]														
WOC-15	SW of Cape Johnson Rocks					Yes	Yes		[Horizontal line shading]														

FLIGHT AND GROUND ENTRY RESTRICTIONS

[Solid black shading] Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

[Horizontal line shading] Sensitive season - Minimize overflight disturbance

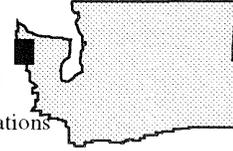
Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

SOUTH LAKE OZETTE

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



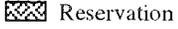
Sensitive Wildlife Area



Park



Boat Launch



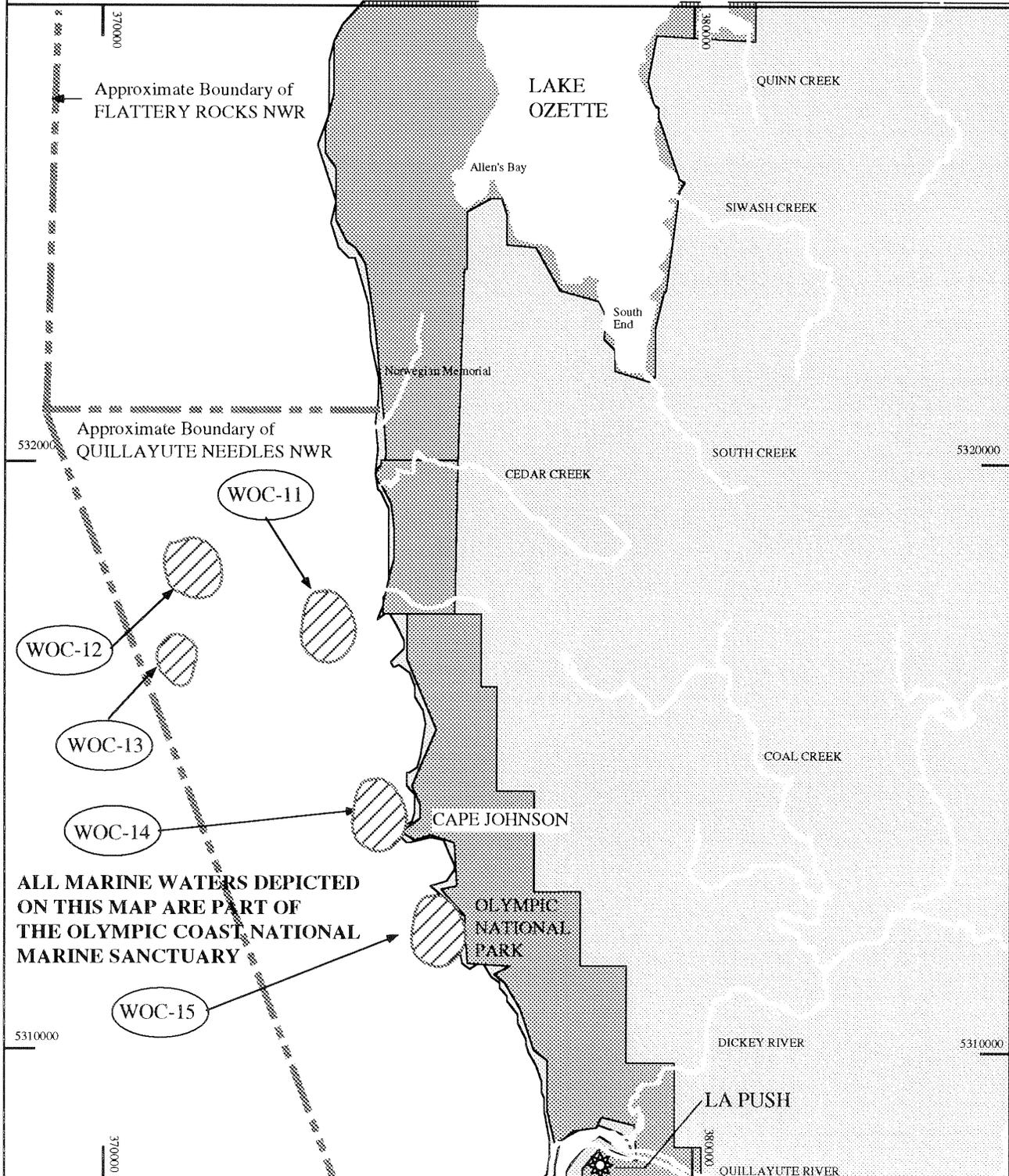
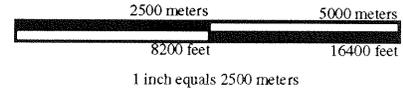
Reservation



Town or City



USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

 Includes half the month

LA PUSH FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

NOAA Chart 18480

Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec								
WOC-16	James Island Complex	Yes				Yes		Yes																				
WOC-17	Quillayute																											
WOC-18	Needles	Yes	Yes		Yes	Yes	Yes	Yes																				
WOC-19	Giants Graveyard				Yes	Yes	Yes	Yes																				
WOC-20	Headland east of Hoh Head					Yes		Yes																				

FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

 Sensitive season - Minimize overflight disturbance

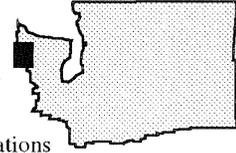
Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

LA PUSH

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations

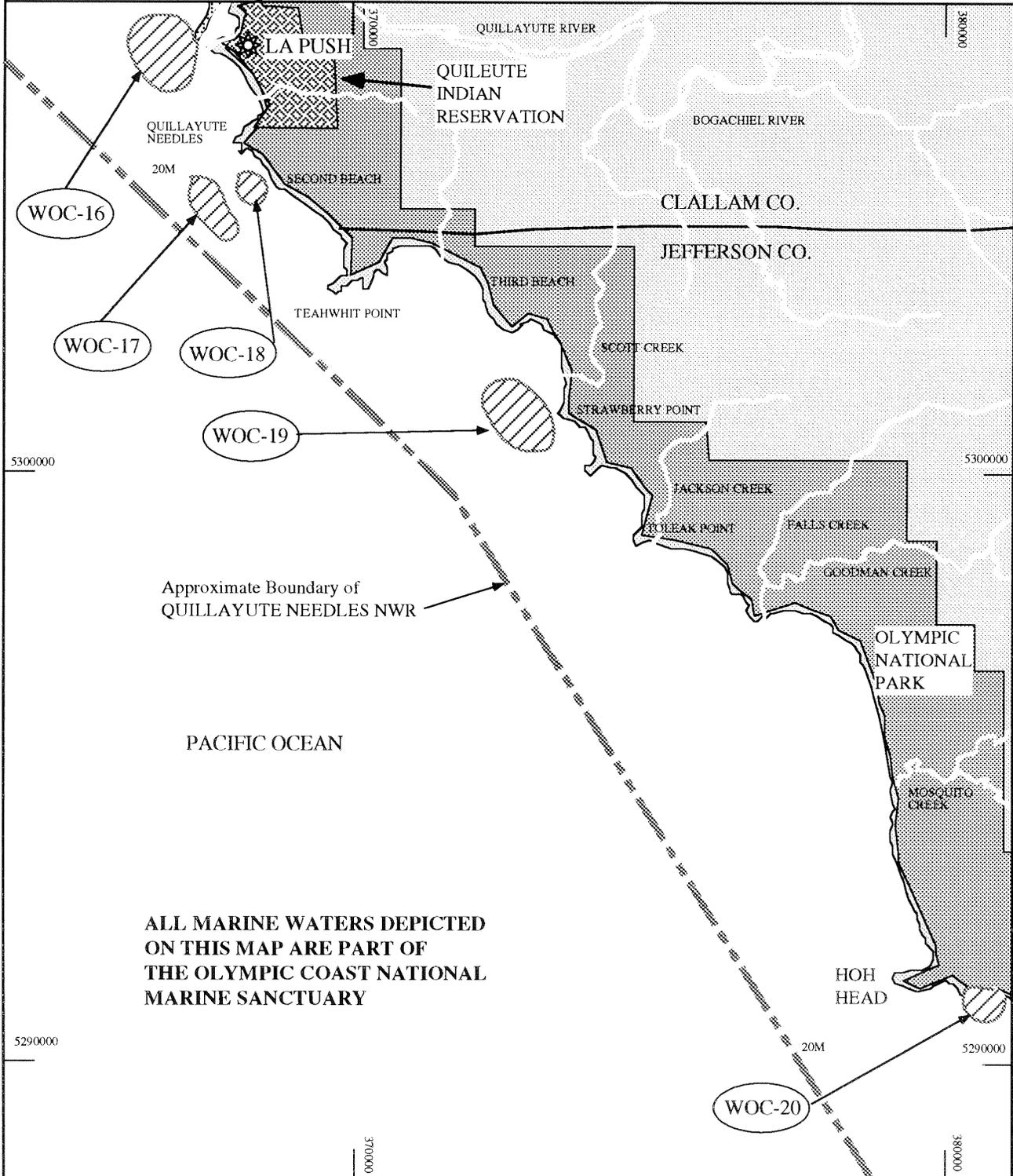
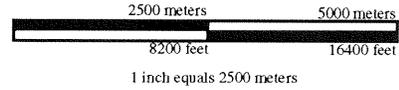


 Sensitive Wildlife Area

 Park
 Reservation

 Boat Launch
 Town or City

 USFWS Refuge Boundary



**ALL MARINE WATERS DEPICTED
ON THIS MAP ARE PART OF
THE OLYMPIC COAST NATIONAL
MARINE SANCTUARY**

	 Includes half the month
HOH RIVER FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE	

NOAA Chart 18480

Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOC-21	Destruction Island	Yes	Yes		Yes		Yes	Yes												

FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

 Sensitive season - Minimize overflight disturbance

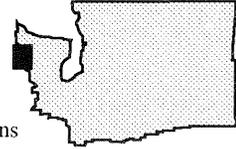
Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

HOH RIVER

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



Sensitive Wildlife Area



Park



Boat Launch

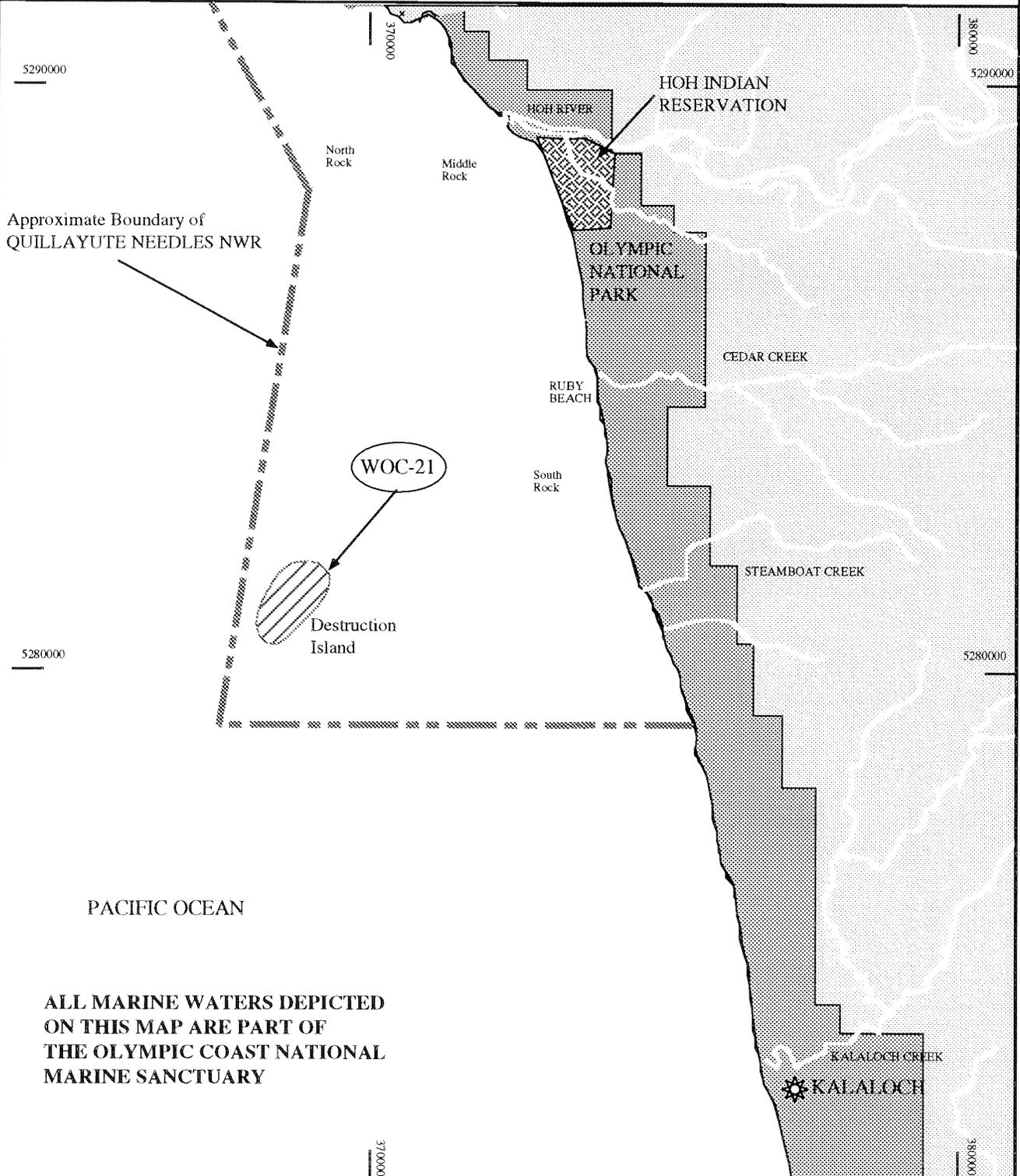
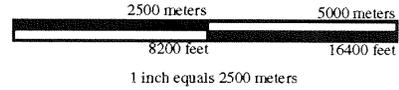


Reservation



Town or City

USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED
ON THIS MAP ARE PART OF
THE OLYMPIC COAST NATIONAL
MARINE SANCTUARY

 Includes half the month

QUEETS FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

NOAA Chart 18500

Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOC-22	Tunnel Island	Yes		Yes		Yes		Yes												
WOC-23	Split/Willoughby Rocks/Rock 535	Yes	Yes		Yes		Yes													

FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

 Sensitive season - Minimize overflight disturbance

Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

QUEETS

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



Sensitive Wildlife Area



Park



Boat Launch

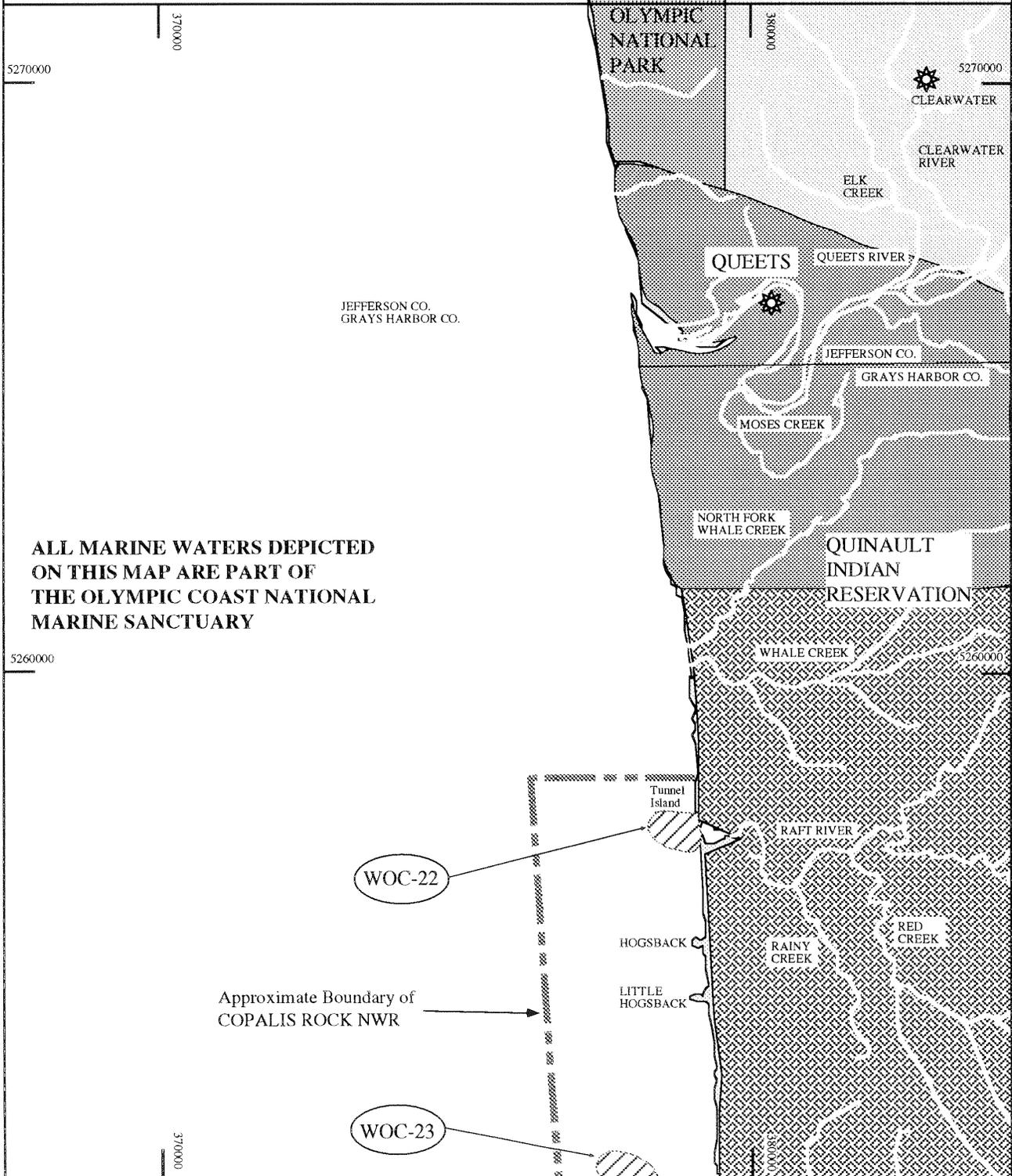
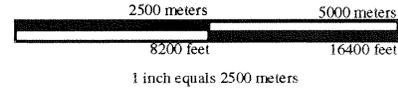


Reservation



Town or City

USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

 Includes half the month

QUINAULT FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

NOAA Chart 18500

Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOC-23	Split/Willoughby Rocks/Rock 535	Yes	Yes		Yes			Yes												
WOC-24	Pratt Cliff					Yes		Yes												
WOC-25	Cape Elizabeth				Yes	Yes														
WOC-26	Point Grenville	Yes	Yes					Yes												

FLIGHT AND GROUND ENTRY RESTRICTIONS

 Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

 Sensitive season - Minimize overflight disturbance

Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

QUINAULT

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



Sensitive Wildlife Area



Park



Boat Launch

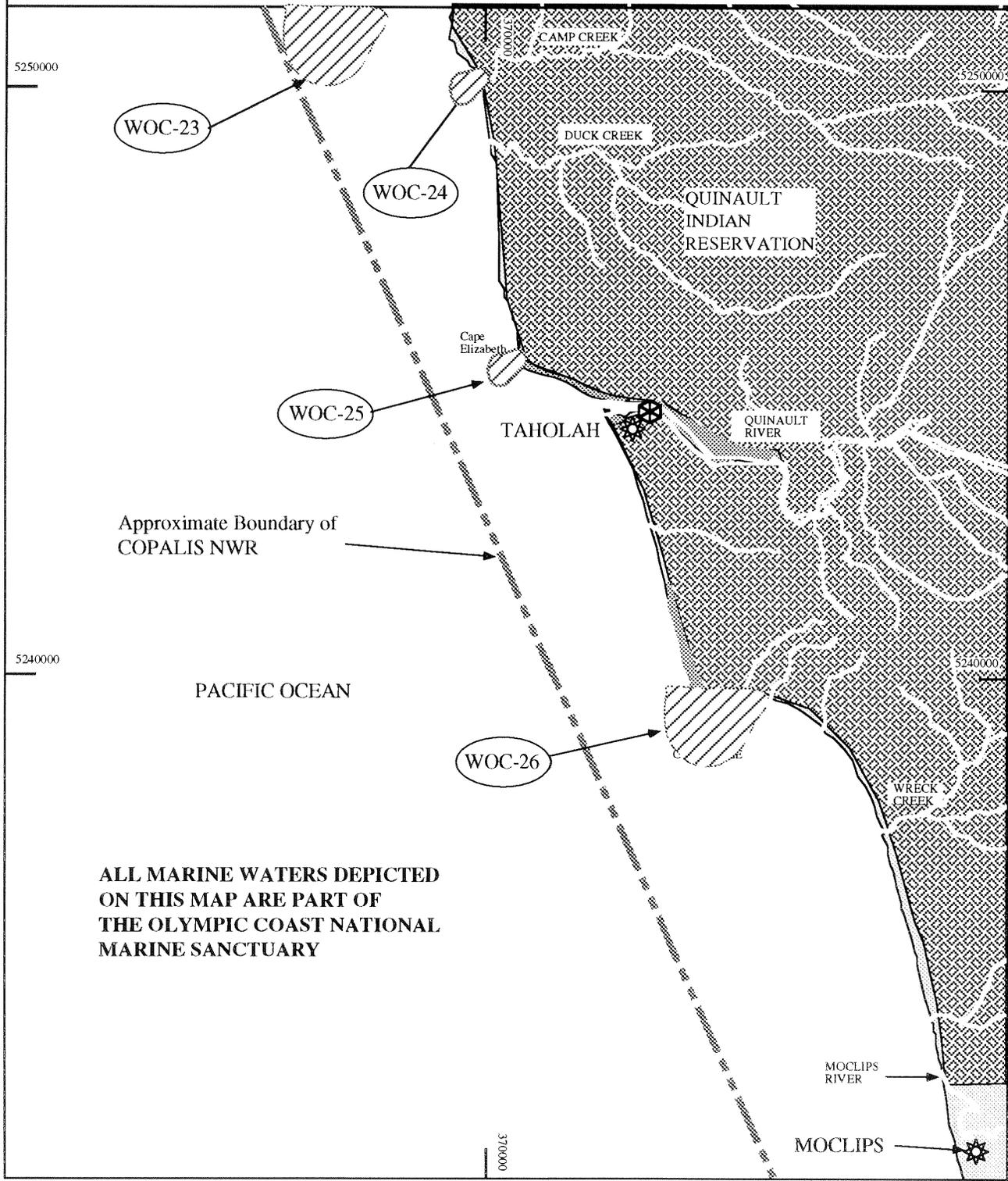
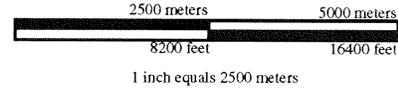


Reservation



Town or City

USFWS Refuge Boundary



ALL MARINE WATERS DEPICTED ON THIS MAP ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

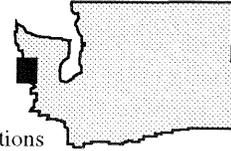
											Includes half the month											
COPALIS BEACH FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE																						
NOAA Chart 18500																						
Code	Location	Seabird Colony	Seabird Conc	Waterfowl Conc	Marine Mammal Haulout	Sensitive Nesting Species	Sea Otter & Kelp Bed	Flight Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
WOC-27	Copalis River mouth		Yes					No														
FLIGHT AND GROUND ENTRY RESTRICTIONS																						
<div style="display: flex; align-items: flex-start; gap: 10px;"> <div style="width: 20px; height: 15px; background-color: black; margin-bottom: 5px;"></div> <p>Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones</p> </div> <div style="display: flex; align-items: flex-start; gap: 10px;"> <div style="width: 20px; height: 15px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <p>Sensitive season - Minimize overflight disturbance</p> </div> <p>Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance</p>																						

COPALIS BEACH

OUTER COAST GRP

FLIGHT RESTRICTION ZONES FOR SENSITIVE WILDLIFE SPECIES

1. Pilots refer to chapter 6.3 Flight Restriction Zones
2. All ground entry within 200 yards of sensitive nesting species is restricted
3. All boaters are requested to approach no closer than 200 yards from seal and waterfowl concentrations



Sensitive Wildlife Area



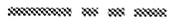
Park



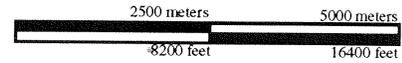
Boat Launch



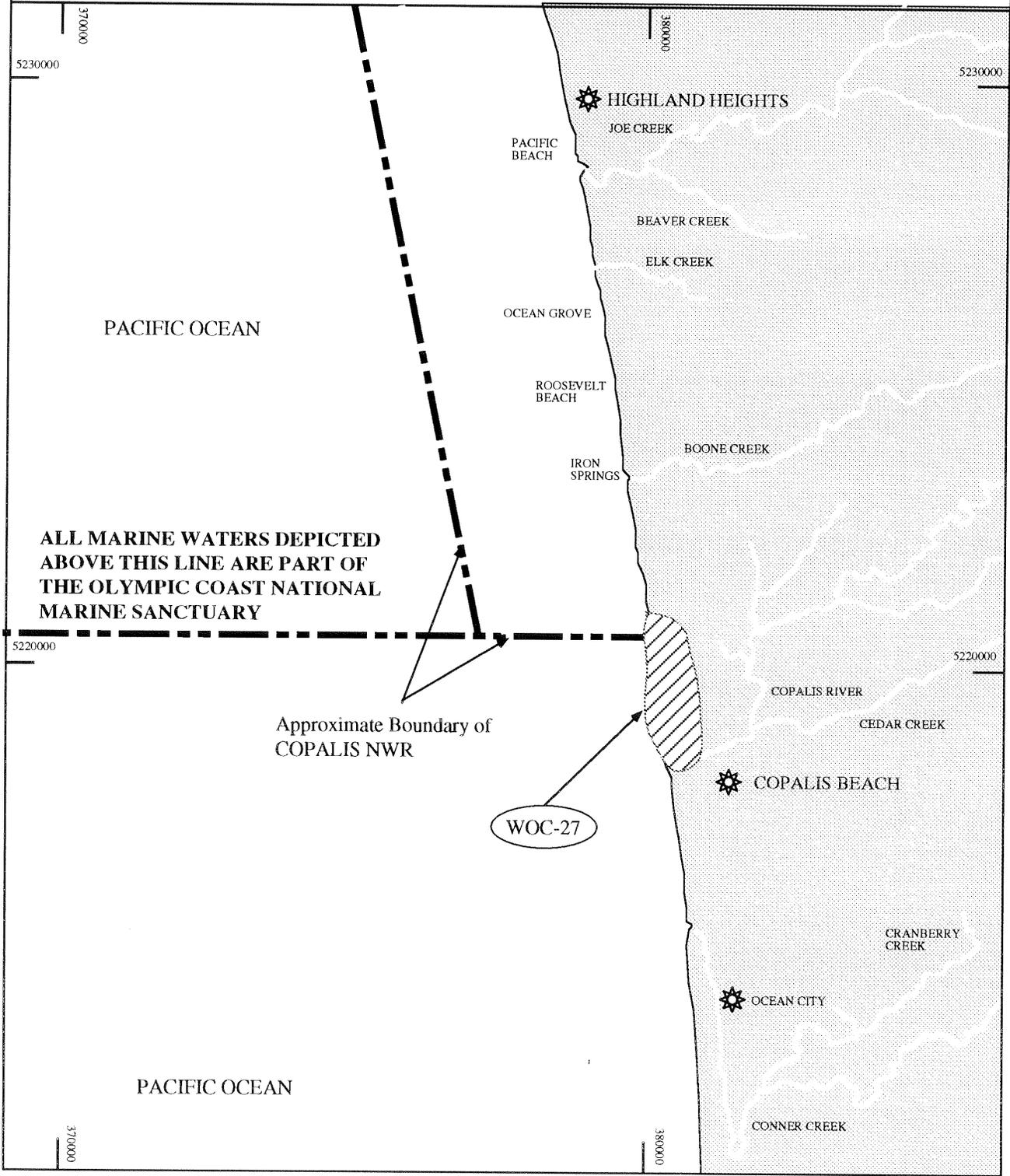
Town or City



USFWS Refuge Boundary



1 inch equals 2500 meters



ALL MARINE WATERS DEPICTED ABOVE THIS LINE ARE PART OF THE OLYMPIC COAST NATIONAL MARINE SANCTUARY

Approximate Boundary of COPALIS NWR

WOC-27

7. Logistical Information

The following is not a complete list of logistical resources - for more information please refer to the Area Contingency Plan, Summary of Area Resources Chapter 6. The subject headings which have an asterisk (*) are being developed; please consult local DEM officials (phone numbers listed on pages 6-53 to 6-55 of the ACP) for specific information.

To submit data for this section, please use Comments/ Corrections/ Suggestions (Appendix C).

Logistical Support

Subject	Name	Characteristics	Contact	Phone #
Command Posts				
	Olympic National Park HQ/ Pt. Angeles		Curt Sauer	360-452-4501
	Ozette Ranger Sta		Curt Sauer	360-452-4501
	Mora Ranger Sta		Curt Sauer	360-452-4501
	Kalaloch Ranger Sta		Curt Sauer	360-452-4501
	Olympic Coast National Marine Sanctuary HQ	138 First St. Port Angeles, WA	Todd Jacobs	360-457-6622
	USCG Station Quillayute	La Push	Officer in Charge	360-374-5112
	USCG Station Neah Bay	Neah Bay	Officer in Charge	360-645-2236
	Kalaloch Lodge	HWY 101 35 mi S of Forks		360-962-2271
	Quinault Indian Nation Community Center		Bruce Jones	360-276-8211
Communications				
	NPS radio channels/repeater sys.		Mel Kossen	360-452-4501
	NPS Mobile hand radios		Mel Kossen	360-452-4501
Equipment Cache Locations				
	NPS Park HQ Emergency Ops Center (Port Angeles)		Larry Nickey	360-452-4501
Inventory of Local Support Equipment				
	NOAA National Marine Sanctuary Work Boat "Tatoosh"	36'x12' Aluminum (Neah Bay/Port Angeles)	Todd Jacobs	360-457-8496
Helicopter Support/Air Support				
	NPS contract Helicopters		Larry Nickey	360-452-4501
	Forks Airport	HWY 101, Forks		
	Eagle Air	Forks Airport		
Access Points				

Subject	Name	Characteristics	Contact	Phone #
<i>Property Access Information and Contacts</i>				
	Quinault Indian Nation		Bruce Jones	360-276-8211
	Quinault Police Dept	24hr	Police Chief	360-276-4422
	Rayonier Inc.	Logging Roads		360-374-6565
	Quileute Tribe		Vince Cooke	360-374-5695
	Makah Tribe		Chad Bowechop	360-645-2201
<i>Staging Areas</i>				
	Kalaloch Lodge			360-962-2271
	Quinault Indian Nation		Bruce Jones	360-276-8211
<i>Recreational Activities</i>				
<i>Key Local Elected Officials</i>				
<i>Tribal Resources</i>				
	Makah Tribe		Chad Bowechop	360-645-2201
	Quileute Tribe		Vince Cooke	360-374-5695
	Hoh Tribe		Mary Litka	360-374-6570
	Hoh Police Dept	24hr	Darryl Elmore	360-374-6570 H: 374-5066
	Quinault Indian Nation	Envr. Protection	Bruce Jones	360-276-8211 H: 533-8189
	Quinault Indian Nation	Asst. Envr. Pro.	Julie Figg	360-276-8211, ext. 372
	Quinault Indian Nation	President	Pearl Capeoman-Boller	360-276-8211, ext. 206
	Quinault Indian Nation	DNR	Pauline Capoeman	360-276-8211, ext. 278
	Quinault Indian Nation	Emergency Serv.	Lisa Hall	360-276-8365
	Taholah Police Dept	24hr	Ray Knutzen	360-276-4422
<i>Fire Department</i>				
	Forks Police & Fire			360-374-2223
	Taholah Fire Dept.			360-276-4422
	Neah Bay Fire			360-645-2701
<i>Local Personnel Support</i>				
<i>Volunteers</i>				
<i>Wildllife Rehab Facilties</i>				
<i>Marinas/Port Docks</i>				
<i>Housing/ Feeding/ Response Community Support*</i>				
	Cape Flattery Resort	55 units	Cape Flattery area	360-645-2551
	Cape Motel	Bay View Ave. 10 units	Cape Flattery area	360-645-2250

Subject	Name	Characteristics	Contact	Phone #
	Hilden's Motel	Bowman Beach, 5 units	Cape Flattery area	360-645-2306
	Ocean Park Resort		LaPush	360-374-5267
	Forks Motel	451 Forks Ave.	Forks	360-374-6243
	Olympic Suites	800 Olympic Drive	Forks	360-374-5400
	Pacific Inn Motel	350 Forks Ave.	Forks	1-800-235-7344
	Amanda Park Motel	HWY 101	Amanda Park	1-800-410-2237
	Lake Quinault Lodge	South Shore Road	Lake Quinault	1-800-562-6672
	Rain Forest Resort Village	South Shore Road	Lake Quinault	1-800-255-6936
	Lake Quinault Resort Motel	North Shore Road	Amanda Park	360-288-2362
	Forks Community Hospital		Forks	360-374-6271
	Kalaloch Lodge	HWY 101	35 mi. S of Forks, Kalaloch	360-962-2271
<i>Interim Storage/Permits*</i>				
	Permit for low overflights of Marine Sancturay	below 2,000 ft/1 mi. from shore	Todd Jacobs	360-457-6622
<i>Fishing Fleets & Affiliated Organizations*</i>				
<i>Boat Cleaning Capability*</i>				
<i>Safe Havens*</i>				

APPENDICES

Appendix A: Summary of Protection Techniques

Protection Techniques	Description	Primary Logistical Requirements	Limitations
ONSHORE			
Beach Berms	A berm is constructed along the top of the mid-inter tidal zone from sediments excavated along the downgradient side. The berm should be covered with plastic or geo-textile sheeting to minimize wave erosion.	<ul style="list-style-type: none"> • Bulldozer/Motor grader -1 • Personnel - equipment operator & 1 worker • Misc. - plastic or geotextile sheeting 	<ul style="list-style-type: none"> • High wave energy • Large tidal range • Strong along shore currents
Geotextiles	A roll of geotextile, plastic sheeting, or other impermeable material is spread along the bottom of the supra-tidal zone & fastened to the underlying logs or stakes placed in the ground.	<ul style="list-style-type: none"> • Geotextile - 3 m wide rolls • Personnel - 5 • Misc. - stakes or tie-down cord 	<ul style="list-style-type: none"> • Low sloped shoreline • High spring tides • Large storms
Sorbent Barriers	A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes & filling the space between with loose sorbents.	Per 30 meters of barrier <ul style="list-style-type: none"> • Wire mesh - 70 m x 2 m • Stakes - 20 • Sorbents - 30 m² • Personnel - 2 • Misc. - fasteners, support lines, additional stakes, etc. 	<ul style="list-style-type: none"> • Waves > 25 cm • Currents > 0.5 m/s • Tidal range > 2 m
Inlet Dams	A dam is constructed across the channel using local soil or beach sediments to exclude oil from entering channel.	<ul style="list-style-type: none"> • Loader - 1 • Personnel - equipment operator & 1 worker or several workers w/shovels 	<ul style="list-style-type: none"> • Waves > 25 cm • Tidal range exceeding dam height • Freshwater outflow

NEARSHORE			
Containment Booming	Boom is deployed in a "U" shape in front of the oncoming slick. The ends of the booms are anchored by work boats or drogues. The oil is contained within the "U" & prevented from reaching the shore.	For 150 meters Slick: <ul style="list-style-type: none"> • Boom - 280 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, drogues, connectors, etc. 	<ul style="list-style-type: none"> • High winds • Swells > 2 m • Breaking waves > 50 cm • Currents > 1.0 m/s
Exclusion Booming	Boom is deployed across or around sensitive areas & anchored in place. Approaching oil is deflected or contained by boom.	Per 300 meters of Boom <ul style="list-style-type: none"> • Boats - 1 • Personnel - boat crew & 3 boom tenders • Misc.- 6 anchors, anchor line, buoys, etc. 	<ul style="list-style-type: none"> • Currents > 0.5 m/s • Breaking waves > 50 cm • Water depth > 20 m
Deflection Booming	Boom is deployed from the shoreline away from the approaching slick & anchored or held in place with a work boat. Oil is deflected away from shoreline.	Single Boom, 0.75 m/s knot current <ul style="list-style-type: none"> • Boom - 60 m • Boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit 	<ul style="list-style-type: none"> • Currents > 1.0 m/s • Breaking waves > 50 cm
Diversion Booming	Boom is deployed from the shoreline at an angle towards the approaching slick & anchored or held in place with a work boat. Oil is diverted towards the shoreline for recovery.	Single Boom, 0.75 m/s knot current <ul style="list-style-type: none"> • Boom - 60 m • boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit 	<ul style="list-style-type: none"> • Currents > 1.0 m/s • Breaking waves > 50 cm
Skimming	Self-propelled skimmers work back & forth along the leading edge of a windrow to recover the oil. Booms may be deployed from the front of a skimmer in a "V" configuration to increase sweep width. Portable skimmers are placed within containment booms in the area of heaviest oil concentration.	Self-propelled (None) Towed <ul style="list-style-type: none"> • Boom - 200 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, bridles, connectors, etc. Portable <ul style="list-style-type: none"> • Hoses - 30 m discharge • Oil storage - 2000 liters 	<ul style="list-style-type: none"> • High winds • Swells > 2 m • Breaking waves > 50 cm • Currents > 1.0 m/s

Source is R. Miller of Clean Sound Cooperative.

Appendix B: Original Geographic Response Plan Contributors**Industry and Response Contractors**

John Crawford, Foss Environmental
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 Trygve Enger, Foss Environmental
 John Felton, Washington Maritime Cooperative
 Jim Haugen, Marine Spill Response Corporation
 Mary Hess, Anvil Corporation
 Mike Kelley, Clean Sound Cooperative
 Julie Knight, Island Oil Spills Association
 Hugh Maffett, Marine Spill Response Corporation
 Mac McCarthy, Clean Sound Cooperative
 Bill Park, Marine Spill Response Corporation
 James Riedel, Riedel-Smith
 Lisa Stone, Marine Spill Response Corporation

Federal Representatives**United States Coast Guard**

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 Bill Carey
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 Scott Knutson
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 Ray Miller
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NOAA

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USFWS

Louise Vicencio

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Ulrich Wilson

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 Michael Cardwell-Snqhepi'nes
 Julie Figg
 Paul Griffehte
 Lisa Hall
 Bruce Jones
 David Molen
 Van Rosaud
 John Sims
 Larry Workman
 Keith Zany

Quileute Tribe

Mitch Lesoing

Makah Tribe

Vince Cooke

*** Special thanks to Thom Davis for his extensive effort in developing draft strategy information prior to the 1995 workshops.**

Appendix C: Geographic Response Plan Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify one of the following agencies: or use tear out sheet (page C-3)

- Washington Department of Ecology, SPPR program, Natural Resources Unit
- USCG Marine Safety Office Puget Sound, Planning Department
- USCG Marine Safety Office Portland
- Oregon Department of Environmental Quality
- Idaho Emergency Response Commission
- Environmental Protection Agency Region 10

Phone Numbers:

Washington DOE	(360) 407-6972
USCG MSO Puget Sound	(206) 217-6213
USCG MSO Portland	(503) 240-9307
Oregon DEQ	(503) 229-5774
Idaho ERC	(208) 334-3263
EPA	(206) 553-6901

Bulletin Board System (BBS):

USCG MSO Puget Sound	(206) 217-6216
USCG MSO Portland	(503) 240-9308

Internet/E-mail Address:

WADOE	dald461@ecy.wa.gov
OR DEQ	WYLIE.Jack@deq.state.or.us
USCG MSO Puget Sound	jlehto@pacnorwest.uscg.mil
USCG MSO Portland	mwilcox@pacnorwest.uscg.mil
USEPA	sheldrake.beth@epamail.epa.gov

Address:

Commanding Officer
 United States Coast Guard
 MSO Puget Sound
 Planning Department
 1519 Alaskan Way South
 Seattle, WA 98134-1192

Washington Department Of Ecology
 SPPR Program
 Natural Resources Unit
 P.O. Box 47600
 Olympia, WA 98504-7600

Office Of The Governor
 Idaho Emergency Response Commission
 1109 Main
 Statehouse
 Boise, ID 83720-7000

Commanding Officer
 United States Coast Guard
 Planning Department
 MSO Portland
 6767 North Basin Ave
 Portland, OR 97217-3992

Oregon Department of Environmental
 Quality
 Water Quality Division
 811 SW Sixth Avenue
 Portland, OR 97204

Environmental Protection Agency
 Emergency Response Branch
 1200 Sixth Avenue
 Seattle, WA 98101

Geographic Response Plan

Comments/Corrections/Suggestions

Directions:

Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make comments in the space provided. Add extra sheets as necessary. Submit to: Dale Davis

Department of Ecology
Spills Program
300 Desmond Drive
P.O. Box 47600
Olympia, WA 98504-7600
dald461@ecy.wa.gov

Name: _____	Title: _____	Agency: _____
Address: _____		
City: _____	State/Province: _____	Zip/Postal Code: _____
Phone: (____) _____	E-Mail: _____	

GRP: _____	Page Number: _____
Location on page (chapter, section, paragraph) (e.g. 2.1, paragraph 3): _____	

Comments: _____

Northwest Area Committee
c/o Washington Department of Ecology
Spills Program
Natural Resources Unit - GRP Corrections
P.O. Box 47600
Olympia, WA 98504-7600