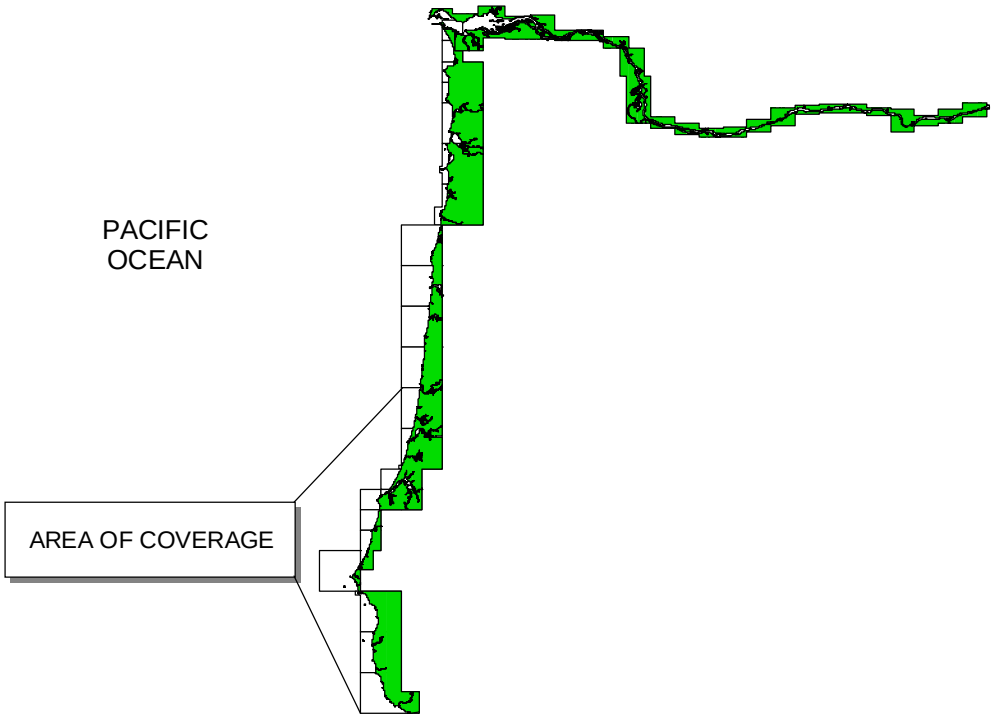
SOUTH OREGON COAST

GEOGRAPHIC RESPONSE PLAN (GRP)



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**
	(800) OILS-911
In Washington:	
Emergency Management Division	**(800) 258-5990**
Department of Ecology	**(360) 753-2353**

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**
Port Operations	(503) 240-9379
Pacific Strike Team	**(415) 883-3311**
District 13:	
MEP/drat	(206) 220-7210
Command Center	(206) 220-7021
Safety Officer	(206) 220-7242
Public Affairs	(206) 220-7235
Vessel Traffic Service (VTS)	(206) 217-6050

Environmental Protection Agency (EPA)

Region 10 Spill Response	**(206) 553-1263**
Washington Ops Office	(206) 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

Department Of Interior

Environmental Affairs	(503) 231-6157

U.S. Navy

Naval Shipyard	(206) 476-3466
Naval Base Seattle	(206) 526-3225
Supervisor of Salvage	(202) 695-0231

Army Corps Of Engineers

Hazards to Navigation	(206) 764-3754

Response Contractors

Fred Devine	**(503) 283-5285**
Global Diving	**(206) 623-0621**
NRC Environmental	**(503) 283-1150**
US Environmental Services	**(866) 876-7745**

Washington State

Department of Ecology:	
Headquarters	(206) 407-6900
SW Regional	**(360) 753-2353**
NW Regional	(206) 649-7000
Central Regional	(509) 575-2490
Eastern Regional	(509) 456-2926
Department of Emergency Management	
	(206) 438-8639
	(800) 258-5990
State Patrol	(206) 753-6856

Oregon State

Department of Environmental Quality	
Headquarters (Portland)	(503) 229-5153
Northwest Region (Portland)	(503) 229-5263
Eastern Region (Bend)	(541) 338-6146
Eastern Region (Pendleton)	(541) 278-4063
Western Region (Coos Bay)	(541) 269-2721
Western Region (Eugene)	(541) 686-7838
Western Region (Medford)	(541) 776-6010
Western Region (Salem)	(503) 378-8240
Emergency Management	**(503) 378-6377**
(In state)	**(800) 452-0311**
(In state)	**(800)OILS-911**
Stop Oregon Litter & Vandalism	(503) 647-9855

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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' "orders" during the emergent phase of the spill. During the project phase the GRP will continue to be used, but with input from natural resource trustees.

Strategy Selection

Chapter 4.1 of the GRP contains complete strategy descriptions in matrix form and response priorities. The accompanying maps are located in Chapter 4.2. The strategies depicted in Chapter 4.2 will be implemented after reviewing on scene information including: tides, currents, weather conditions, oil type, initial trajectories, etc.

It is important to note that strategies rely on the trajectory of the spill. A booming strategy listed as a high priority would not necessarily be implemented if the spill trajectory and location did not warrant action in that area.

Chapter 6 outlines the sensitive resources requiring protection and the seasonality of their sensitivity. This information must be consulted before strategies are implemented as there may be flight restrictions associated with a resource. Flight restriction information is also found in chapter 6.

Standardized Response Language

In order to avoid confusion in response terminology, this GRP uses strategy names defined in Appendix A (e.g. diversion booming, exclusion booming).

Response Equipment

A table outlining equipment availability and response times is being developed for this geographic response plan. In the interim, strategies will be deployed in the order equipment arrives on scene and as directed/selected by the on-scene coordinator.

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Record of Changes

Date	Change Number	Summary of Changes
1 August 1995	Original Release	
1 February 1997	1 - complete reprint	Editing. Corrected strategies. Added maps and text to chapters five and six.
1 November 1997	2 - page changes	Editing.
1 December 1999	3	Added Section 6.9, Aquaculture. Converted chapter 3 & 4 maps to .tif files.
1 April 2000	4	Added a NEW CARISSA paragraph to Section 2.6. Revised, renumbered and added lat/lon to chapter 4 strategies.
1 December 2004	5	Updated DEQ logo and contact sheet.

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South Coast, Oregon

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. They prioritize resources to be protected and allow for immediate and proper action.

GRPs are developed for marine waters of Washington and Oregon State, the Columbia River, and the inland areas of Washington, Oregon and Idaho. They are prepared through the efforts of the Washington Department of Ecology, Oregon Department of Environmental Quality, Idaho State Emergency Response Commission, the U.S. Coast Guard, and the Environmental Protection Agency.

GRPs are developed through workshops involving federal, state, and local oil spill emergency response experts, representatives from tribes, industry, ports, environmental organizations, pilots and response contractors. Workshop participants identify resources which require protection, develop operational strategies, and pinpoint logistical support.

The first goal of a GRP is to identify resources, physical features, hydrology, currents and tides, winds and climate that may affect response strategies. After compiling this information, sensitive resources are identified.

Secondly, response strategies are developed based on the sensitive resources noted, hydrology, and climatic considerations. Individual response strategies identify the amount and type of equipment necessary for implementation. The response strategies are then applied to likely spill scenarios for oil movement, taking into account factors such as wind and tidal conditions.
Finally, additional logistical support is identified, including:

- Location of operations center for the central response organization;
- Local equipment and trained personnel;
- Local facilities and services and appropriate contacts for each;
- Response times for bringing equipment in from other areas.

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

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2. Site Description

The Southern Oregon Coast addressed in this GRP includes that coastline which falls between the Oregon/California border and north to Florence, Oregon, a distance of approximately 160 miles. Terrain varies from sandy beaches and dunes to intermittent offshore rocks and rocky intertidal zones with steep cliffs that have limited or no access. The varied stretches of sandy beach, some within the Oregon Dunes National Recreational Area, represent significant human use area. Portions of the coastline are steep, completely inaccessible, rocky cliffs. Other areas are rocky intertidal to cobble type beaches. There are many offshore rocks that provide bird rookeries and marine mammal haulouts. Interspread along the coastline are many estuaries and small fresh water drainages. In addition to the physical characteristics, there is a variety of coastal and marine fauna that completes the habitat and nesting for many types of wildlife.

The major sensitive human resource sites are at South Jetty Beach, Siltcoos Beach, Umpqua Beach, and Horsefall Beach. Major sensitive wildlife resource sites mostly contain varying levels of anadromous fish, marine mammals, snowy plover nesting, and brown pelicans. Snowy Plover nesting usually occurs March through September. Marine mammal pupping usually occurs in late spring and summer.

2.1 Physical Features

The outflow from rivers with headwaters in the Cascades or Coastal Ranges form estuaries along the coast. These estuaries are a meeting point between salt and fresh water and the surrounding land. The resulting fragile environment is characterized by highly variable physical, chemical, and biological conditions, allowing organisms from salt and fresh water and land to proliferate with abundance and diversity unknown to any other single type of environment. Components of these estuaries include tidelands, salt mashes, sandspits, uplands, and river channels, all of which interact to create the highly productive habitat.

This GRP addresses the southern 160 miles of the Oregon coastline. In addition to the miles of sandy beaches, sensitive estuaries (from Florence south) include Siuslaw River, Umpqua River, Coos Bay (see separate GRP for details), Coquille River, Sixes River , Elk River, Rogue River, Pistol River, Chetco River, and Winchuck River.

Siuslaw River--Siuslaw River estuary is narrow and crooked with the Siuslaw River being its main tributary. Between 30-40% of the surface area at high tide is dominated by tidal flats which are more extensive upstream and nearly nonexistent in the lower parts. Head of tide extends to mile 25.

Umpqua Bay--Umpqua Bay consists of the lower reaches of the Umpqua River with the mouth and zero river mile being the same point. Tidal effects extend up the river as far as Scottsburg at river mile 27.5.

Coquille River--Coquille River estuary lies approximately 225 miles south of the mouth of the Columbia River. It is a long and narrow estuary and is one of the smallest on Oregon's coast. The estuary is fully exposed to waves at the throat. Tidal effects extend as far as from 36-40 miles upstream (near Myrtle Point).

Sixes River--The Sixes River estuary lies 233 miles south of the mouth of the Columbia River. Population in the area is largely rural; the small town of Sixes being near the river and Port Orford approximately 5 miles to the south.

Elk River--Elk River estuary lies approximately 237 miles south of the Columbia River mouth. Port Orford is the nearest populated community. The mouth of the Elk River may migrate several hundred yards and change its position periodically due to the sand bar and the coastline characteristics. During the summer months the sand bar prevents saline water from entering the estuary except during periods of extremely high tides.

Rogue River--Rogue River estuary lies 264 miles south of the Columbia River's mouth. The lack of a bay, steep stream gradient, and the east west orientation of the mouth allow the tidal energy to be effective at flushing sediments out of the estuary. Head of tide usually extends not more than 3-4 miles upriver.

Pistol River--Pistol River estuary lies 274 miles south of the Columbia River's mouth. Pistol River's mouth may migrate several hundred yards and change its position periodically due to the sand bar and coastline characteristics. During the summer months the sand bar prevents saline water from entering the estuary except during periods of extremely high tides.

Chetco River--The Chetco River discharges into the Pacific Ocean at a point 300 miles south of the Columbia river. The estuary is partially exposed to tides at the throat.

Winchuck River--The Winchuck River meets the ocean 1/2 mile north of the Oregon/California state border. It is a very small estuary with its mouth closed during the summer and much of the summer flow subsurface due to the coarse bottom sediment.

2.2 Hydrology

The rivers meeting the ocean drain the mid-coast, Umpqua River, South Coast, and Rogue River drainage Basins. Depending upon their outflow, they create either a Two Layered, Partially Mixed, or Well Mixed Estuary. The estuaries and their types are as follows:

Partially Mixed or Two Layered, Depending upon outflow:
Siuslaw River, Umpqua River, Coquille River, Rogue River, and Chetco River.

Well Mixed:
Coos Bay, Sixes River, Elk River, Pistol River, and Winchuck River.

High fresh water runoff occurs during spring snow melt and late fall and winter.

2.3 Currents and Tides

The nearshore current is characterized by a predominantly northern flow in the winter months and a southern flow in the summer months. The beaches are subject to large wave actions and high energy environments.
Tides in South Coast are of the mixed semidiurnal type with paired highs and lows of unequal duration and amplitude.

2.4 Winds

The southern coast can be affected by strong winds, at times in excess of 100 miles per hour. These winds typically come from the north to northwest in the summer and the southeast to east in the winter.

2.5 Climate

The entire coast is characterized by a maritime climate with cool summers and mild winters. Air temperatures are in the mid 40's in the winter and the low 60's in the summer. Water temperatures are fairly constant, normally in the low 50's.

2.6 Risk Assessment

The primary transportation routes for the Trans-Alaskan Pipeline Trade which affect the Oregon Coast are between Prince William Sound and Richmond, California. The routes for major shipping traffic keep the crude-laden super tankers 50-60 nm off shore. This distance minimizes coastal effects from a catastrophic spill. Refined product in barges and small tankers is transported close to the shoreline, as do cargo vessels with bunker fuels while in transit of the coast. Any of these could provide a spill source.

Bunker fuel from the M/V Tenyo Maru, which sank off the northern coast of Washington, washed up as far south as Lincoln City during the summer of 1991. Additionally, unidentified or "mystery" tarballs occasionally wash up on Oregon’s beaches. These are most likely from offshore vessels illegally pumping bilges while at sea. This demonstrates the vast distances the nearshore current is capable of transporting floating product.

In February 1999 the M/V NEW CARISSA, with almost 400,000 gallons of fuel on board, went aground near Coos Bay after anchoring just offshore in a storm. After a week of of pounding in the surf and a partially successful attempt to burn the fuel, the ship broke in two. Approximately 70,000 gallons of oil spilled, impacting the Oregon coast. The bow section was towed to sea, only to break loose in a severe storm and re-ground near Waldport. The bow was towed to sea a second time and sunk. The stern remains grounded on the North Spit of Coos Bay.

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3. Reference Maps

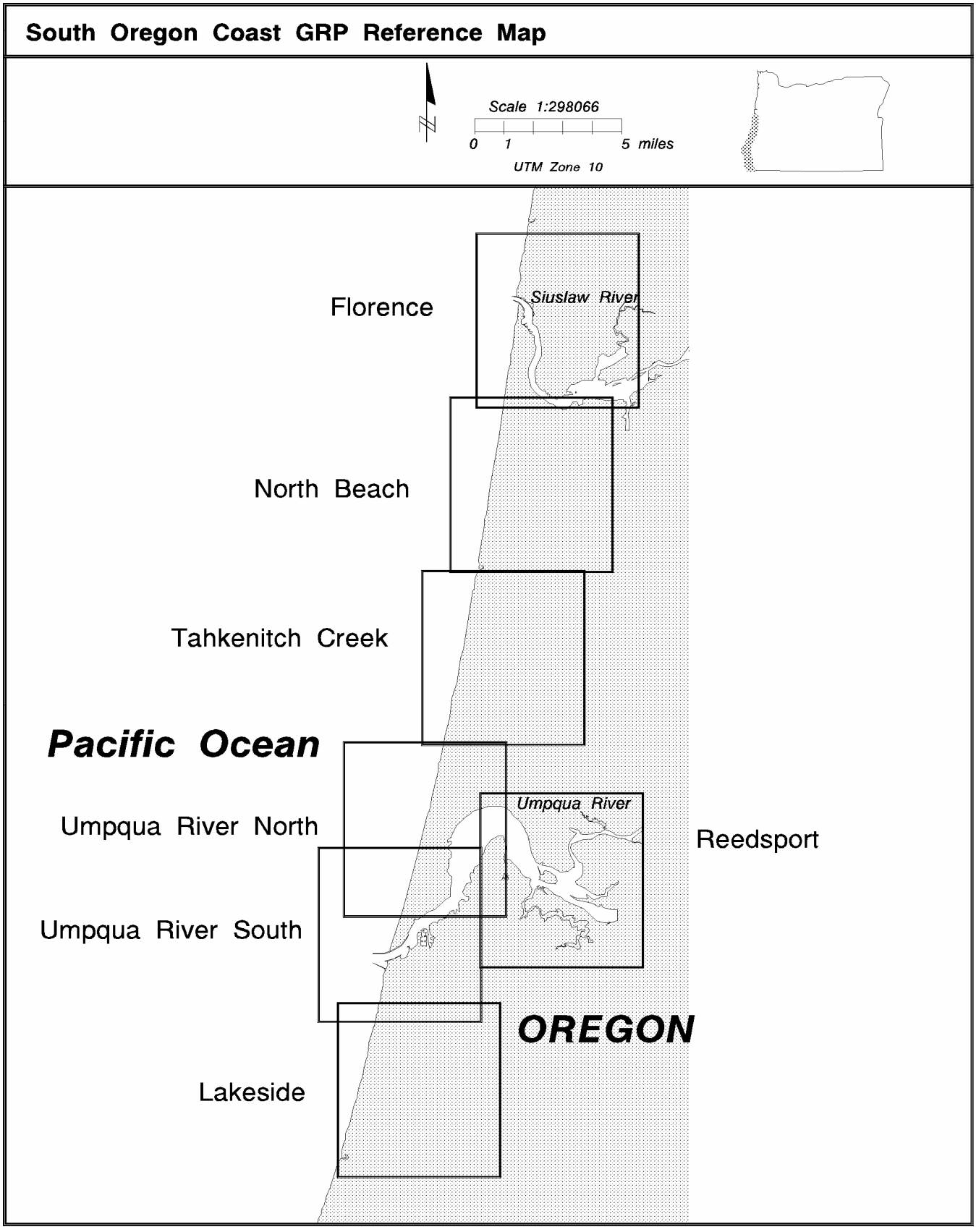

Figure 3-1. South Oregon Coast Reference Map One

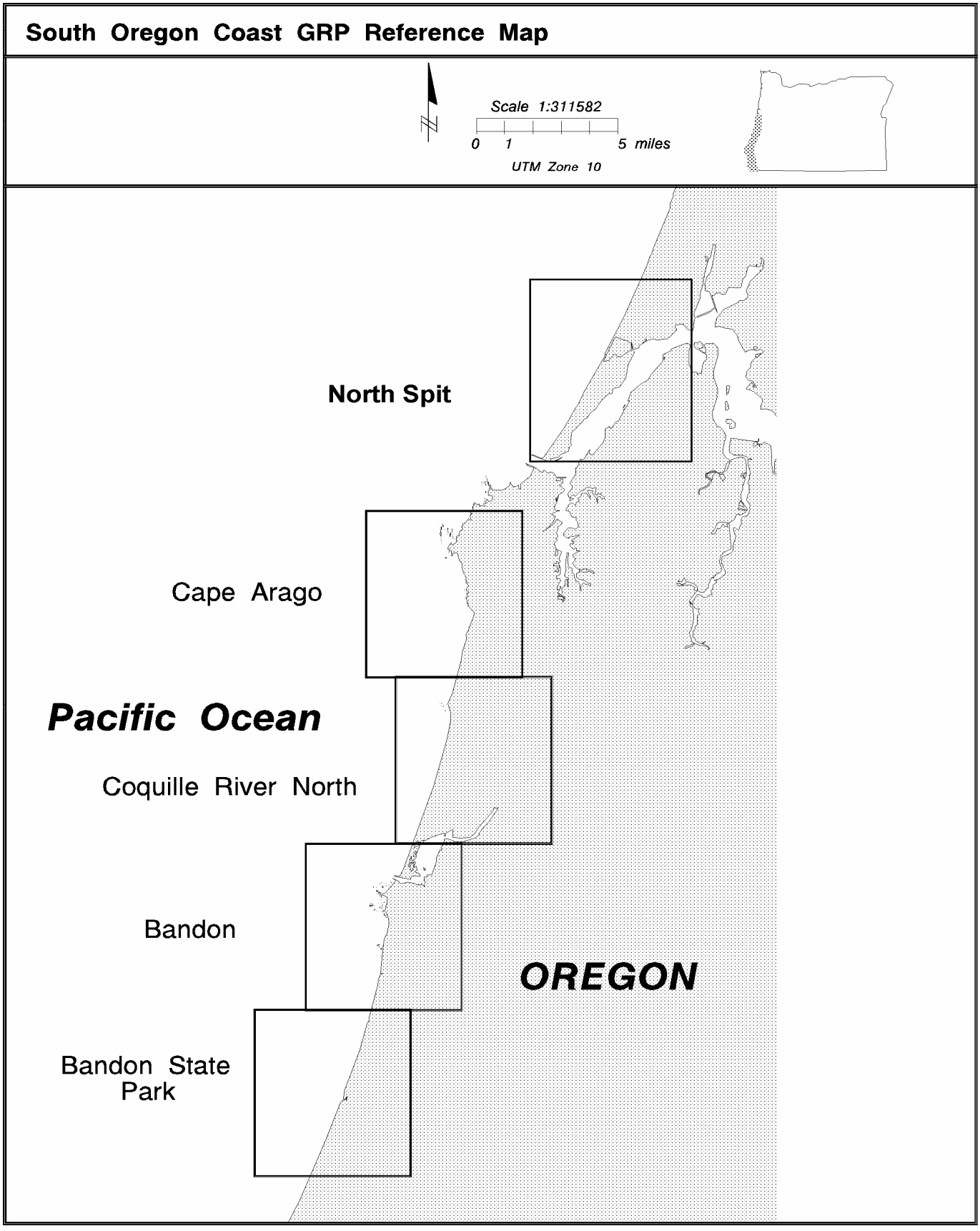

Figure 3-2. South Oregon Coast Reference Map Two

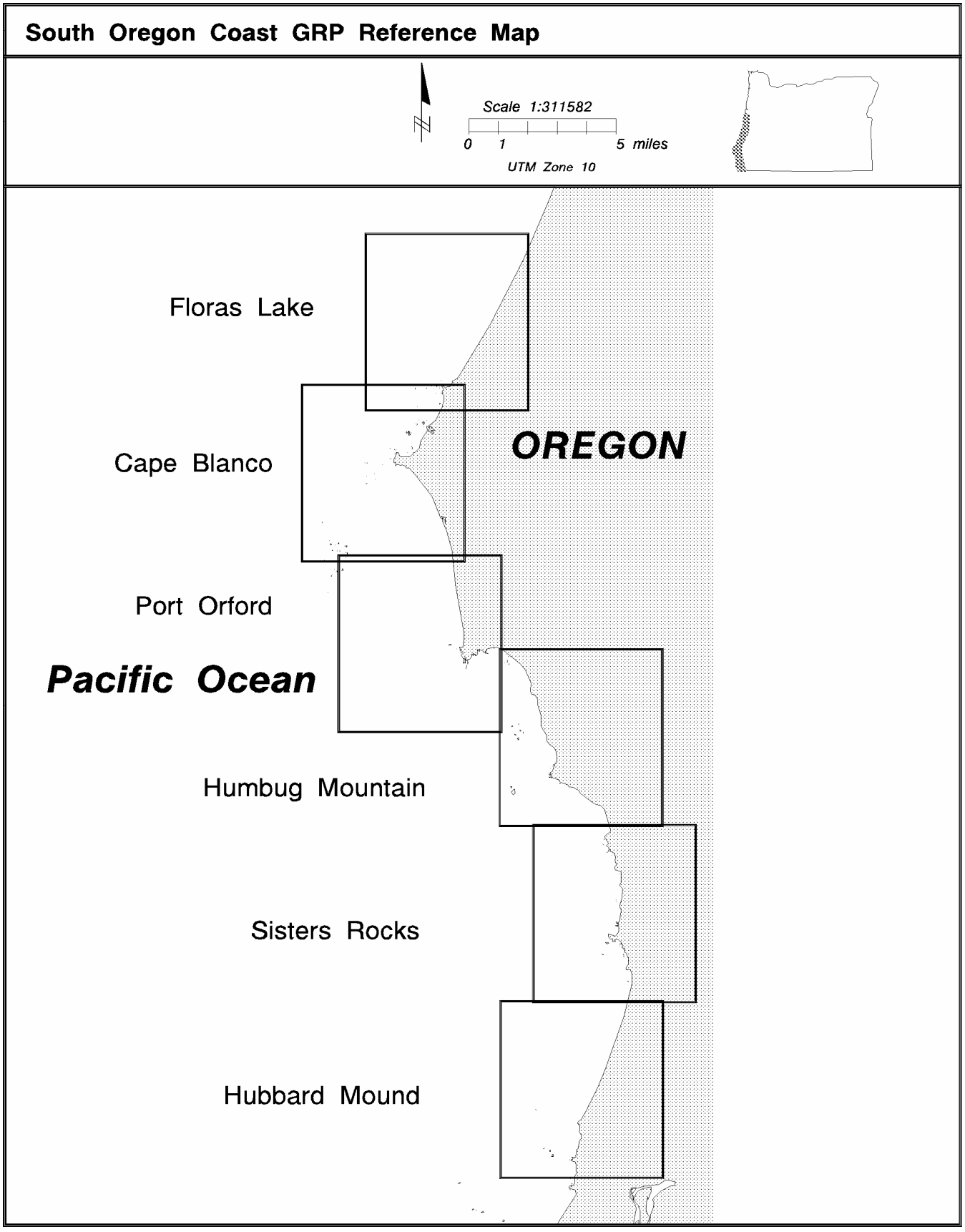

Figure 3-3. South Oregon Coast Reference Map Three

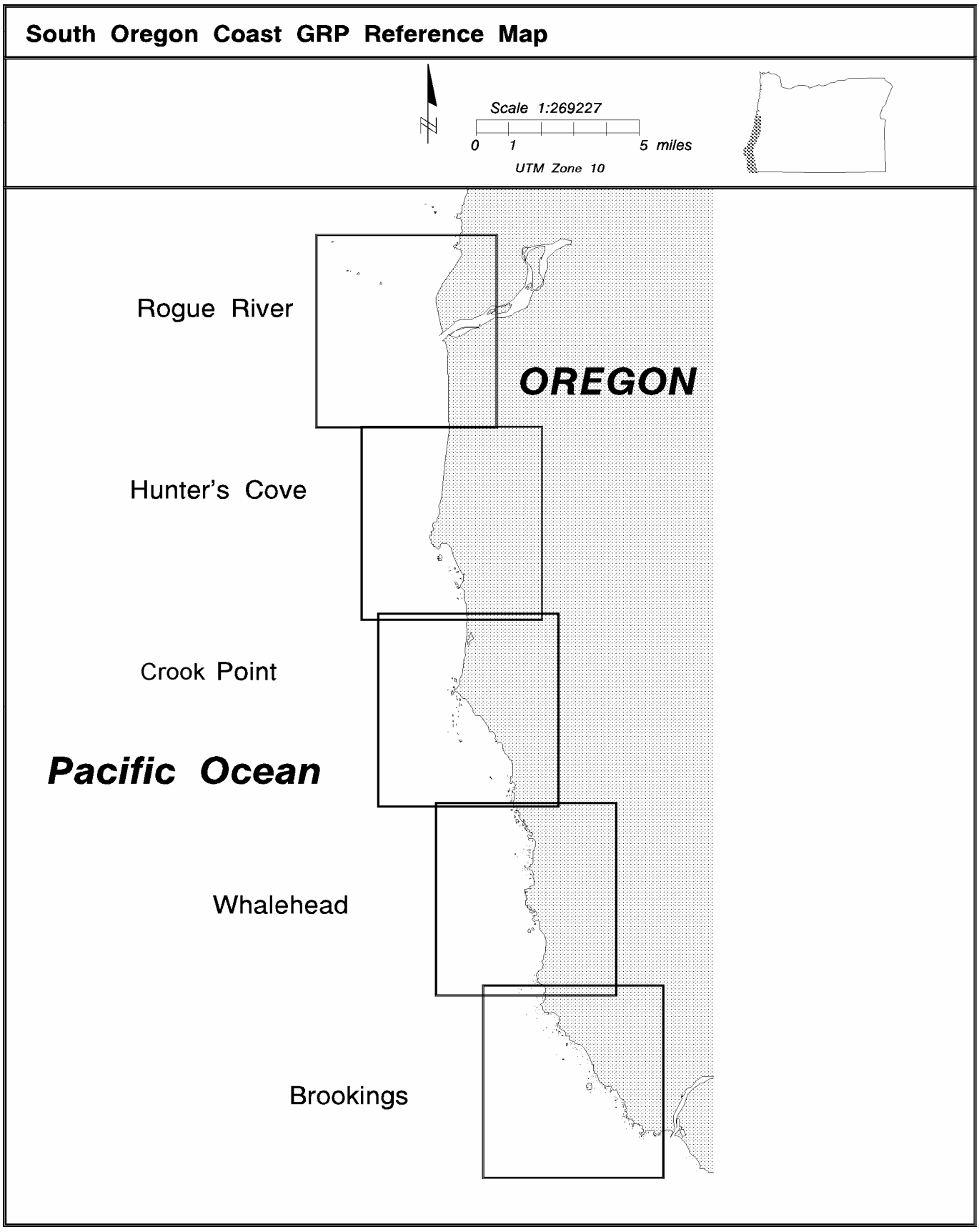

Figure 3-4. South Oregon Coast Reference Map Four

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4. General Protection/Collection Strategies

4.1 Chapter Overview

This chapter details the specific response strategies and resources to protect as outlined by the participants of the GRP workshops for each Geographical Response Area. It describes, amongst other things, the strategies determined for each area. Other pertinent information necessary for proper implementation of scenarios is found in chapters five and six. This information includes shoreline types, wildlife areas, economic areas, sensitive marine areas, archeological sites, and flight restriction zones which may be implemented by the OSC if necessary.

Sectors

Each **geographic region** is divided into smaller **sectors** as shown by the reference map in chapter three.

Maps

The maps in this chapter provide information on the specific location of strategy points. They are designed to help the responder visualize response strategies in relation to valuable wildlife and archeological locations, economic areas, and sensitive marine areas. Maps are grouped in their respective subject matter areas. The maps that are being developed will be added as they are completed and placed in their respective subject matter areas. For a complete list of all maps contained in this GRP refer to the Table of Figures on page 11.

- **Protection/Collection maps** provide information on the specific location of strategy points. These maps are designed to help the responder visualize response strategies in relation to valuable wildlife and archeological locations, economic areas, and sensitive marine areas.

Tables

This chapter contains tables which are placed in their respective subject matter areas. Some of the tables are incomplete and will be updated.

- **Scenario Response Priority Strategies** details the order in which strategies will be implemented based on various local scenarios.
- **Response Strategy Table** describes amongst other things, the details of the response strategies, indicates the purpose of the strategy and lists special considerations that may be needed to carry out the strategies.

Major Protection Techniques

All response strategies fall into one of three major techniques that may be utilized either individually or in combination. The strategies listed in 4-2 are based on one or more of the following techniques:

Dispersants:
Chemicals can be used to break up slicks on the water. Dispersants can decrease the severity of a spill by speeding the dissipation of certain oil types. Their use will require approval of the Unified Command. Dispersants will only be used in offshore situations under certain conditions, until further determinations are made by the Area Committee and published in the Area Contingency Plan.

In Situ Burning:
If possible, an oil slick may be set on fire. Burning must be authorized by the Unified Command, who confer with state and local air and water quality authorities. This option is often preferable to allowing a slick to reach the shore. This method works on many types of oil, and requires special equipment including a fire boom and ignitors. In Situ Burning will only be allowed when consistent with the Northwest Area Contingency Plan's In-Situ Burning Policy and Guidelines.

Mechanical Recovery Strategies:
If a spill is too close to the shore to use In Situ burning or dispersants, the key strategies are to use collection, diversion, or exclusion booming to contain the slick and prevent it from entering areas with sensitive wildlife and fisheries resources. This will be attempted through the use of various booming strategies. These options are described in detail in Appendix A.

4.2 Protection/Collection Maps

Table 4-1. Florence Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
	SIUSLAW RIVER SYSTEM						Clam beds, eel grass, pinneped haulout @ Cannery Hill.
SSC-1	N. Shore Jetty to Cannery Hill 44°00'56"N 124°07'53"W	Exclusion		Protectively boom to protect sensitive resources;			
SSC-2	S. Jetty Parking Area 44°00'37"N 124°07'47"W	Deflection	800' hard	Protect mud flats w/ multiple deflection & diversion booms		beach road parking lot; or by boat; pilings available, anchors may be needed	
SSC-3	Sloughs & marshes east of Florence 43°59'10"N 124°05'22"W	Exclusion	1600' hard	Boom across slough entrances N Fork and in South Slough		access by boat; pilings are available, may need anchors	

4.2.1 Florence

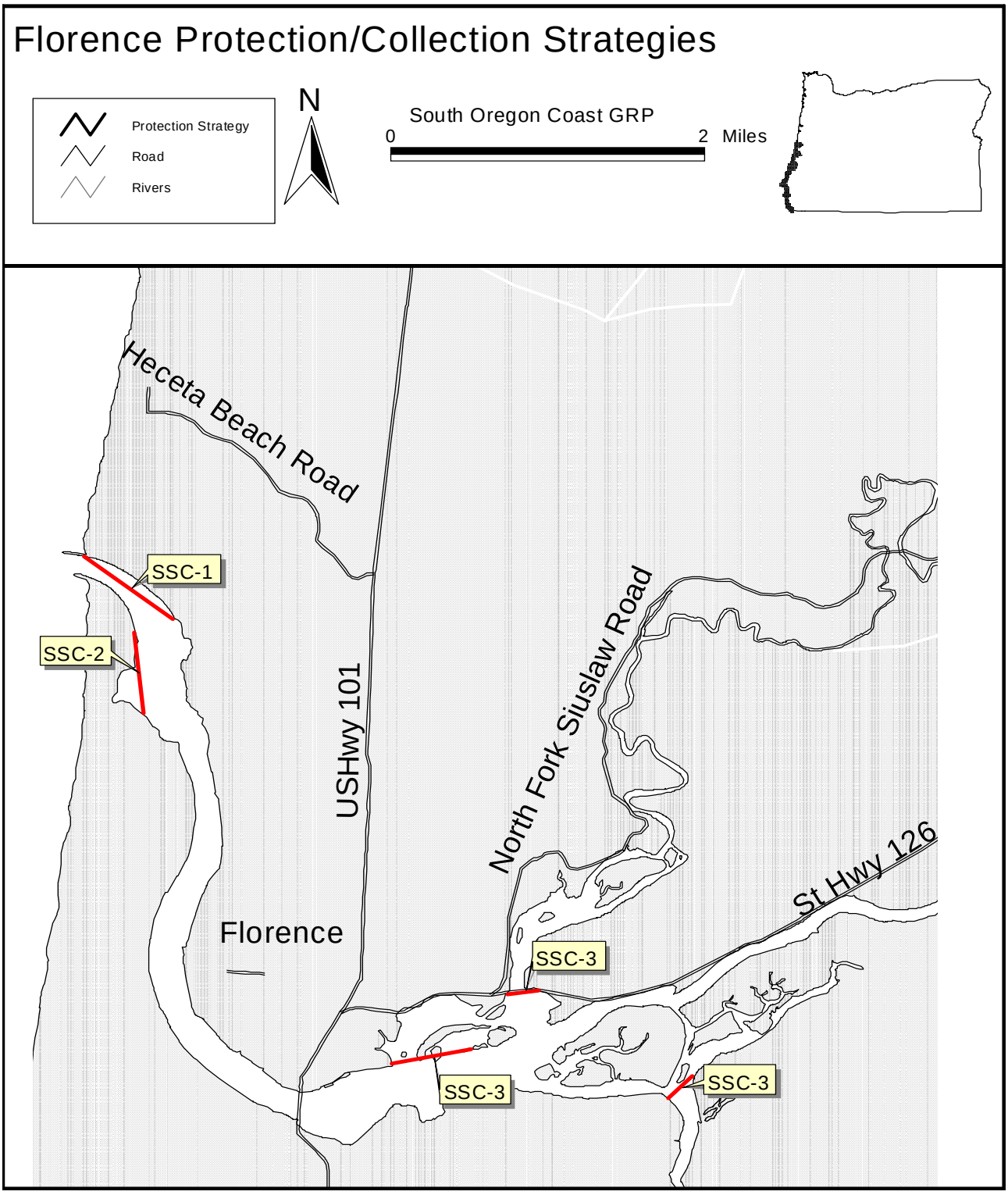


Figure 4-1. Florence Protection/Collection Options

Table 4-2. North Beach Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-4	Siltcoos River	Collection	100' sorbent; or filter fence	Using sorbents, passively collect oil; tidal influence extends 100' upriver		S. Jetty road across seawall down the beach; anchor on shore	
SSC-5	Siltcoos River near Int'l Paper Park 43°52'26"N 124°09'12"W	Exclusion	Int'l Paper has dam which can be closed; may want to back up dam w/ sorbents			Drive on beach if weather & tide permit	Snowy Plover has sensitivity Mar-Sep; This is also a Harbor Seal haulout

4.2.2 North Beach

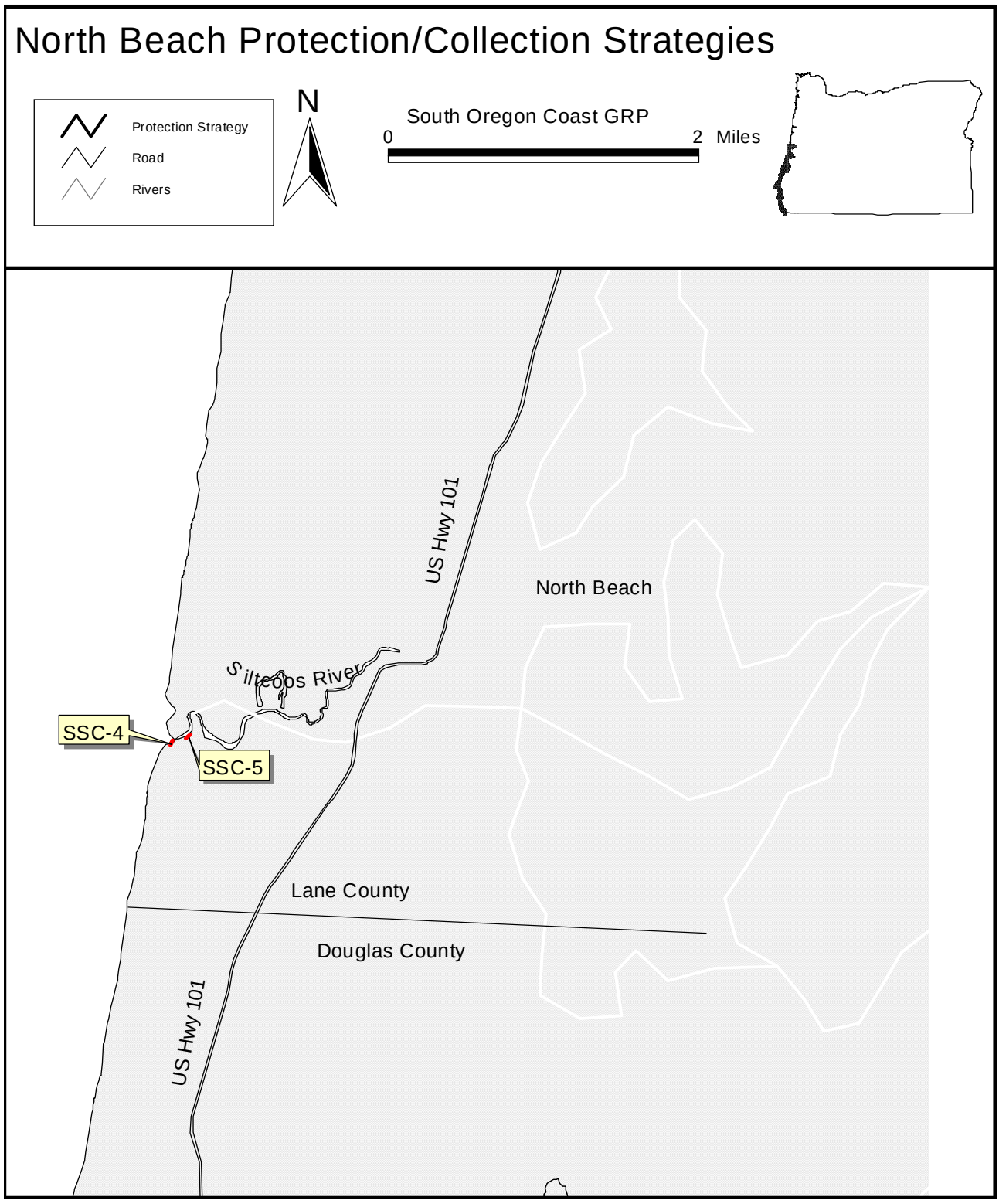


Figure 4-2. North Beach Protection/Collection Options

Table 4-3. Tahkenitch Creek Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-6a	Tahkenitch Creek 43°47'48"N 124°10'11"W	Collection	100' hard	Collect oil @ estuary mouth if possible		Take Three Mile Rd to the beach; creek is 2-3' deep	Sensitivity highest @ mouth of estuary
SSC-6b	Tahkenitch Creek 43°47'48"N 124°10'11"W	Exclusion	None; use sand	Create Sand Berm to protect creek, may want to add sorbents near berm		Take Three Mile Rd to the beach; need bulldozer or other heavy gear.	

4.2.3 Tahkenitch Creek

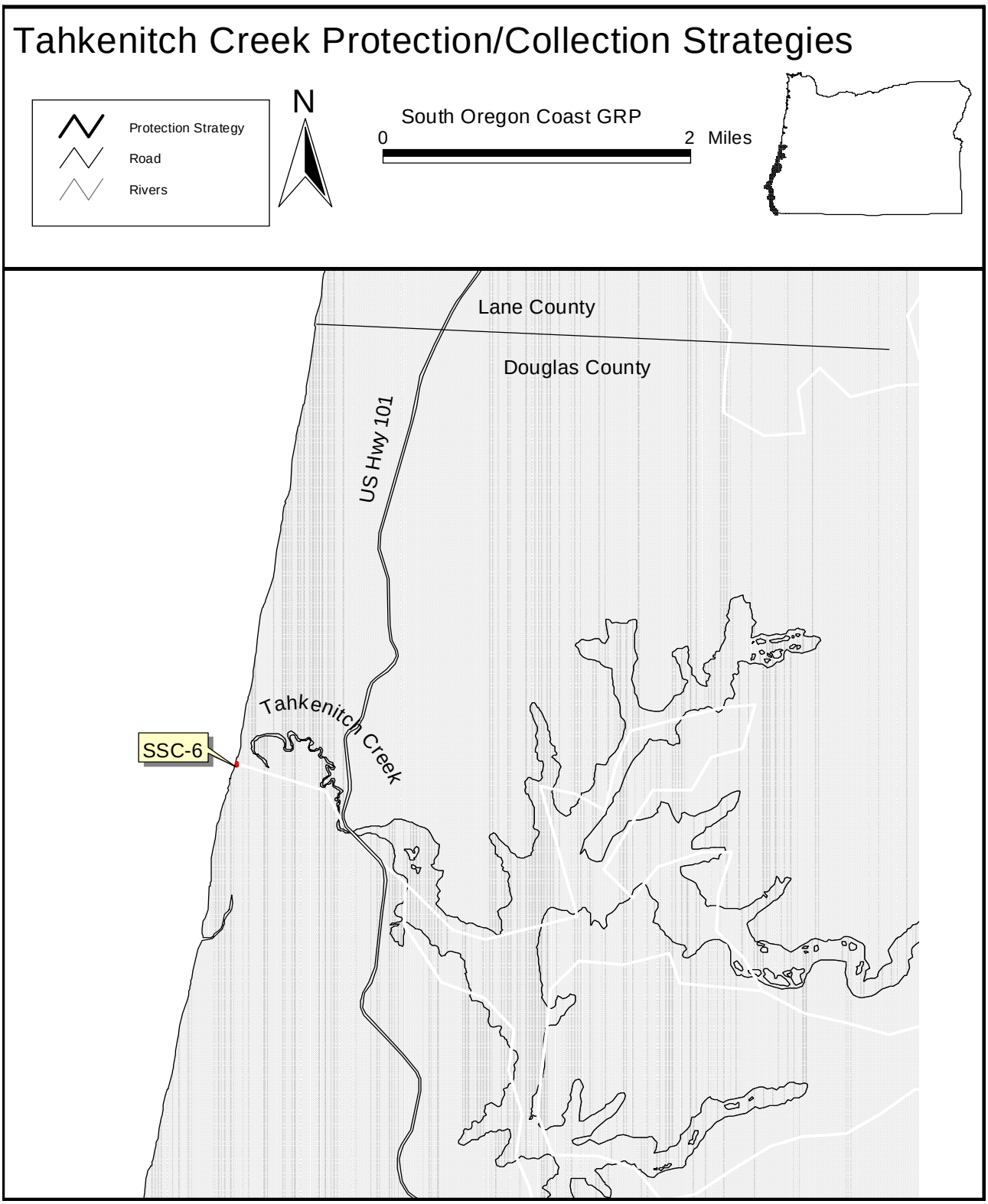


Figure 4-3. Tahkenitch Creek Protection/Collection Options

Table 4-4. Umpqua River North Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-7	Three Mile Creek 43°45'22"N 124°10'07"W	Protection	100'	Boom across mouth where feasible to protect		Good road access	
SSC-8	East Bank Covelets 43°41'57"N 124°09'31"W	Deflection		Deflect oil away from small covelets around east bank		Note: Strategy needs ground truthing & distances measured	
SSC-9	Seal Island 43°42'56"N 124°09'41"W	Collection		Enhance natural collection by booming		Note: Strategy needs ground truthing & distances measured	
SSC-10	The Point (cliffs) 43°43'51"N 124°08'28"W	Deflection	600' hard	Protect Eagle Aerie/ the Cutoff Channel			This is a pinniped haulout
SSC-14	Mooring Basins 43°40'59"N 124°11'04W	Exclusion	600' harbor boom, may use smaller	Boom off mooring basins to prevent oiling of marinas & boats		From road; note: will need center break points to allow vessels to exit & enter	Protecting vessels and marina only
SSC-15	International Paper--North End 43°44'33"N 124°07'08"W	Deflection	300'	Deflect Oil on incoming tides; use pilings or snags as anchors		Contact International Paper for details	Pigeon Flyaway & feeding area
SSC-16	Steamboat Island 43°43'04"N 124°06'35"W	Exclusion	300' hard	Protect island using either hard boom to keep oil from impacting, or sorbent wrap; boom bank to bank on incoming tide		Probably boat access; boom will need tending for vessel traffic	Waterfowl feeding summer through fall
SSC-17	Providence Creek 43°43'13"N 124°07'38"W	Exclusion	400' hard	Protect creek on S. Side of Umpqua River (use tide gates if operational)		Good access from land; check tide gates for operation; anchor on creek banks	Waterfowl feeding area
SSC-18	Gardiner Waterfrnt 43°43'38"N 124°06'37"W	Exclusion or Collection		Protect waterfront if not already impacted; otherwise, enhance natural collection		Note: Strategy needs ground truthing & distances measured	Eel grass beds; clam beds
SSC-19	Bolon Island 43°42'47"N 124°06'16"W	Protection	Sorbent wrap	No clear strategy exists; use sorbents to passivley collect		Access from Hwy 101	Cormorant nesting, largest softshell clam digging site in Oregon
SSC-20	Scofield Creek 43°42'19"N 124°06'30"W	Exclusion	200' x 3 sections; 200' @ Macintosh Slough; 200' @ 101 bridge	Step down booming at mouth of Scofield Creek to protect sensitive areas		Access from Hwy 101; may need small craft to position boom	Eel grass beds; former high level Coho spawning ground

4.2.4 Umpqua River North

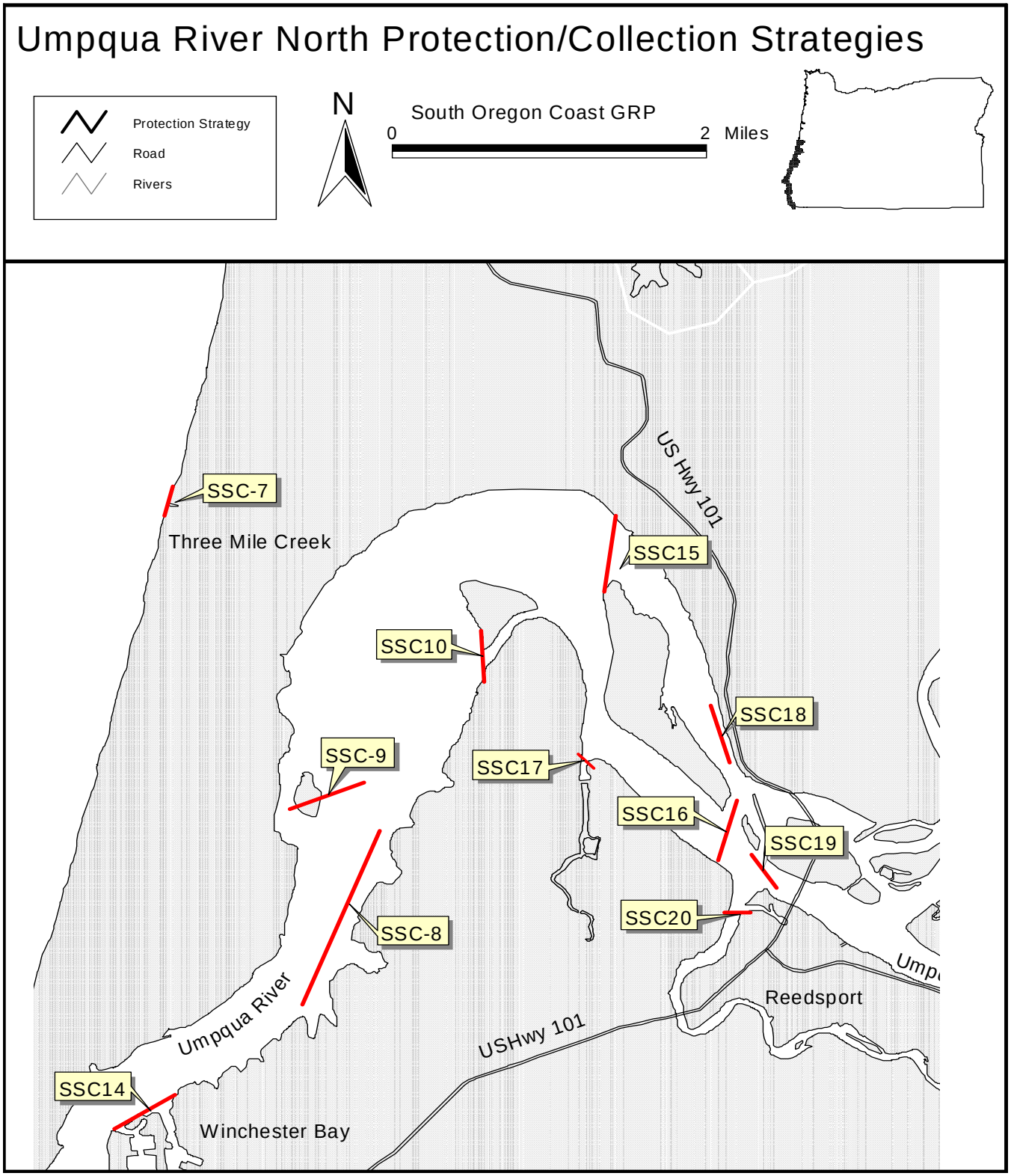


Figure 4-4. Umpqua River North Protection/Collection Options

Table 4-5. Umpqua River South Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-8	East Bank Covelets 43°41'57"N 124°09'31"W	Deflection		Deflect oil away from small covelets around east bank		Note: Strategy needs ground truthing & distances measured	
SSC-9	Seal Island 43°42'56"N 124°09'41"W	Collection		Enhance natural collection by booming		Note: Strategy needs ground truthing & distances measured	
SSC-11	Umpqua River North Spit 43°40'21"N 124°12'35"W	Protection					Protect Razor Clams--S. Jetty; Protect shorebirds.
SSC-12	South Jetty Triangle 43°40'00"N 124°12'41"W	Exclusion	3000' petroboom or larger; 3000' sorbent boom or snare	Use large boom to keep oil from impacting razor clam beds @ S. Jetty Triangle		Use jetty; note: eddy will wrap around triangle @ apex	Razor Clam beds
SSC-13	Halfmoon Bay 43°40'59"N 124°11'39"W	Collection	400' hard	Augment already existing natural collection with hard boom		From road; use shoreline as anchor points	Sand Shrimp
SSC-14	West/East Mooring Basins 43°40'59"N 124°11'04W	Exclusion	600' harbor boom, may use smaller	Boom off mooring basins to prevent oiling of marinas & boats		From road; note: will need center break points to allow vessels to exit & enter	Protecting vessels and marina only
SSC-17	Providence Creek 43°43'13"N 124°07'38"W	Exclusion	400' hard	Protect creek on S. Side of Umpqua River (use tide gates if operational)		Good access from land; check tide gates for operation; anchor on creek banks	Waterfowl feeding area

4.2.5 Umpqua River South

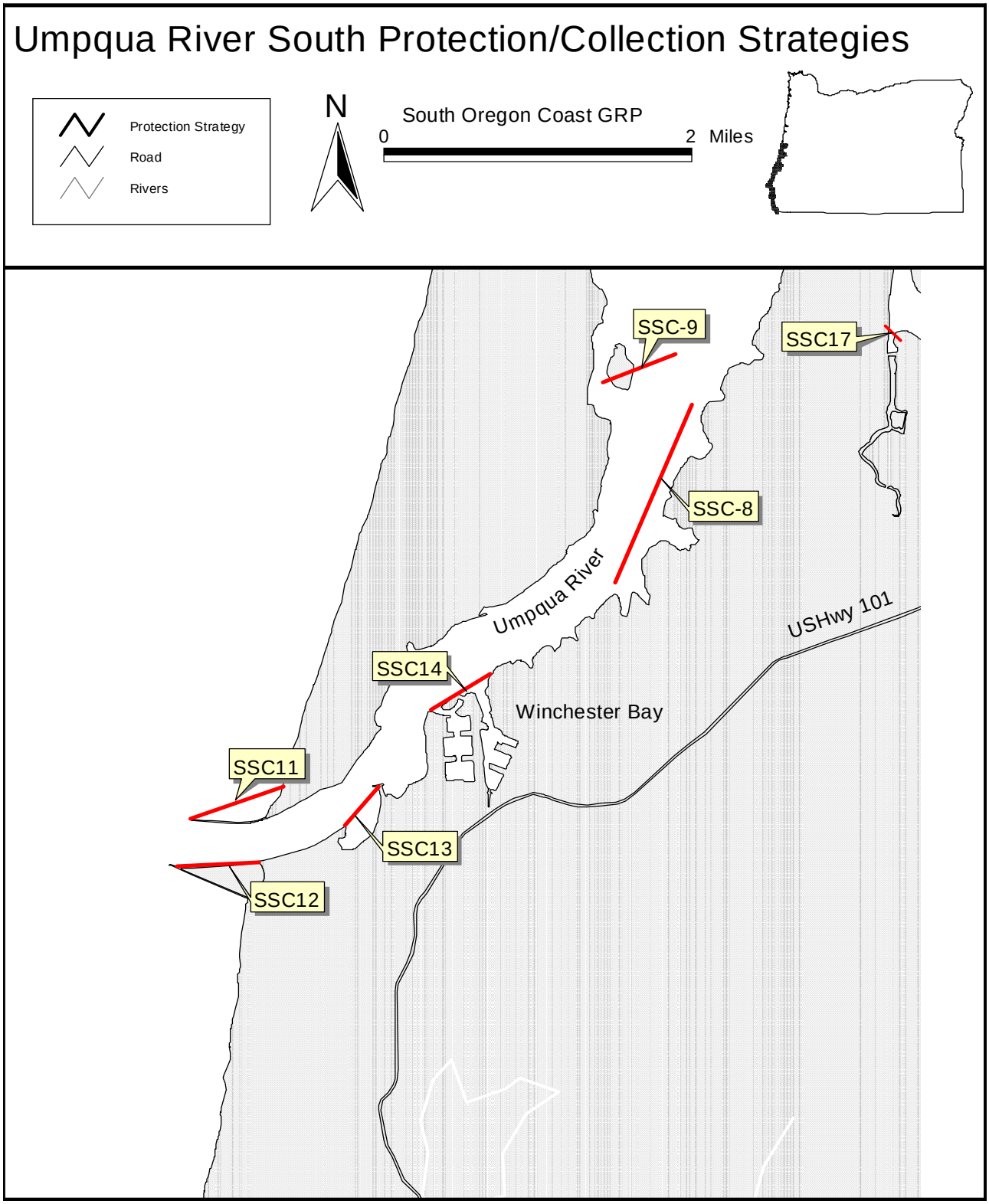


Figure 4-5. Umpqua River South Protection/Collection Options

Table 4-6. Reedsport Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-15	International Paper--North End 43°44'33"N 124°07'08"W	Deflection	300'	Deflect Oil on incoming tides; use pilings or snags as anchors		Contact International Paper for details	Pigeon Flyaway & feeding area
SSC-16	Steamboat Island 43°43'04"N 124°06'35"W	Exclusion	300' hard	Protect island using either hard boom to keep oil from impacting, or sorbent wrap; boom bank to bank on incoming tide		Probably boat access; boom will need tending for vessel traffic	Waterfowl feeding summer through fall
SSC-17	Providence Creek 43°43'13"N 124°07'38"W	Exclusion	400' hard	Protect creek on S. Side of Umpqua River (use tide gates if operational)		Good access from land; check tide gates for operation; anchor on creek banks	Waterfowl feeding area
SSC-18	Gardiner Waterfront 43°43'38"N 124°06'37"W	Exclusion or Collection		Protect waterfront if not already impacted; otherwise, enhance natural collection		Note: Strategy needs ground truthing & distances measured	Eel grass beds; clam beds
SSC-19	Bolon Island 43°42'47"N 124°06'16"W	Protection	Sorbent wrap	No clear strategy exists; use sorbents to passivley collect		Access from Hwy 101	Cormorant nesting, largest softshell clam digging site in Oregon
SSC-20	Scofield Creek 43°42'19"N 124°06'30"W	Exclusion	200' x 3 sections; plus 200' @ Macintosh Slough; plus 200' @ 101 bridge	Step down booming at mouth of Scofield Creek to protect sensitive areas		Access from Hwy 101; may need small craft to position boom	Eel grass beds; former high level Coho spawning ground
SSC-21	Mouth of Smith River 43°43'19"N 124°04'47"W	Deflection to Collection	200' x 3 sections	Use cascade booming @ narrows to collect; mouth too wide to boom straight across		Good access on W. side in East Gardiner; use vacuum trucks at collection points	
SSC-22	Dean Creek 43°41'38"N 123°59'55"W	Exclusion	200' (check tide gate to see if functional, if so, augment w/ sorbents)	Protect mouth of Dean Creek as it enters Smith River		From road, however, may be quickest from water	Waterfowl feeding area
SSC-23	Butler Creek 43°42'18"N 124°03'47"W	Exclusion	200'	Protect mouth of Butler Creek		Use Butler Creek Road	

4.2.6 Reedsport

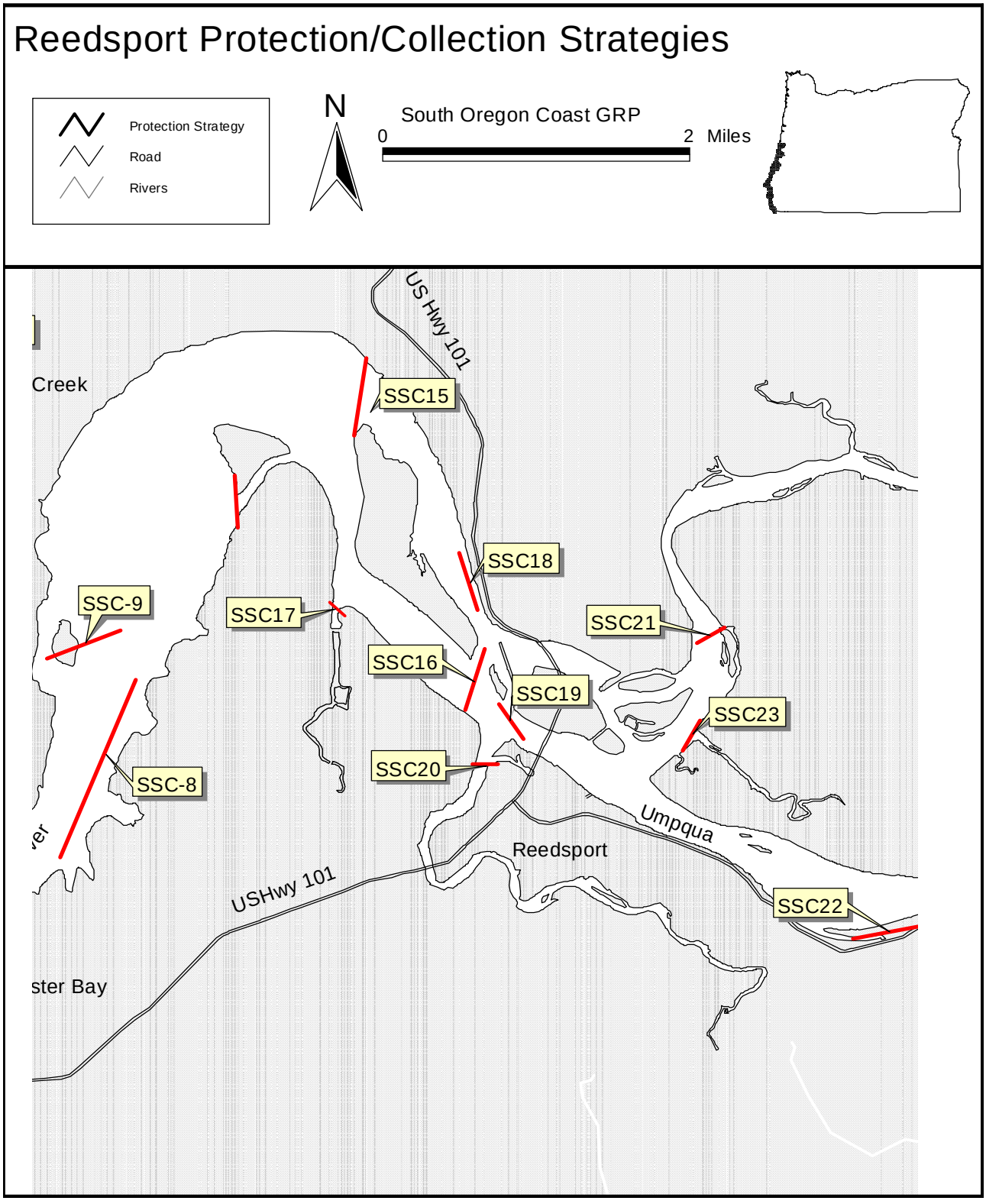


Figure 4-6. Reedsport Protection/Collection Options

Table 4-7. Lakeside Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-24	Ten Mile Creek 43°33’45”N 124°13’49”W	Exclusion	200’ (lay boom on sand)	Protect mouth of creek at high tide; during low flow periods, creek may not need protecting		From Highway 101 (use marsh boom if available)	

4.2.7 Lakeside

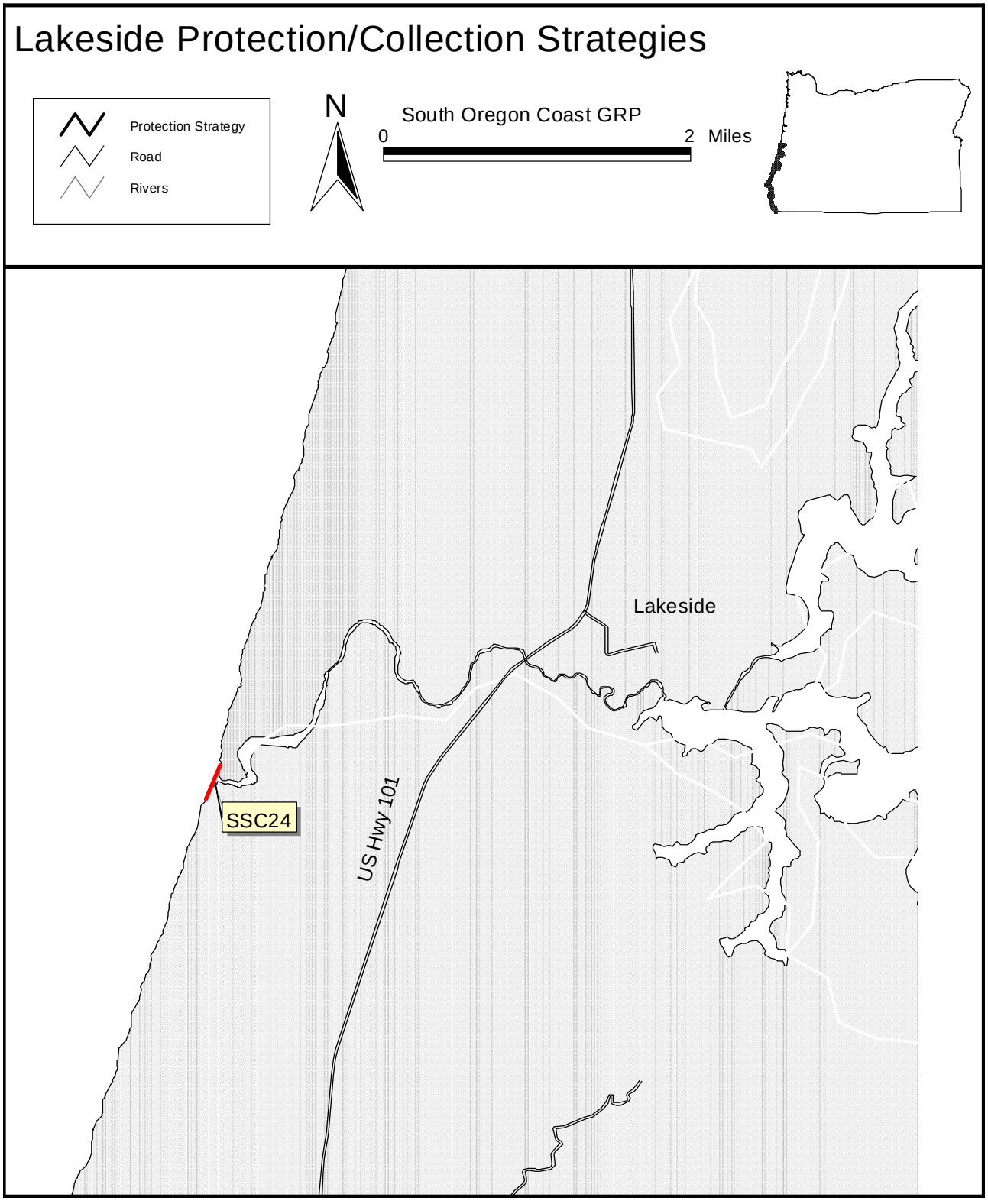


Figure 4-7. Lakeside Protection/Collection Options

Table 4-8. North Spit Strategy Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Res (Ite Res
SSC-25	North Spit of Coos Bay 43°27’14”N 124°16’34W - 43°21’27”N 124°20’19”W	Protection		Too large an area to boom off; may try protection in specific areas w/sorbernts		Beach access via Horsefall Beach Road, then turn south	Sno Res wor

4.2.8 North Spit

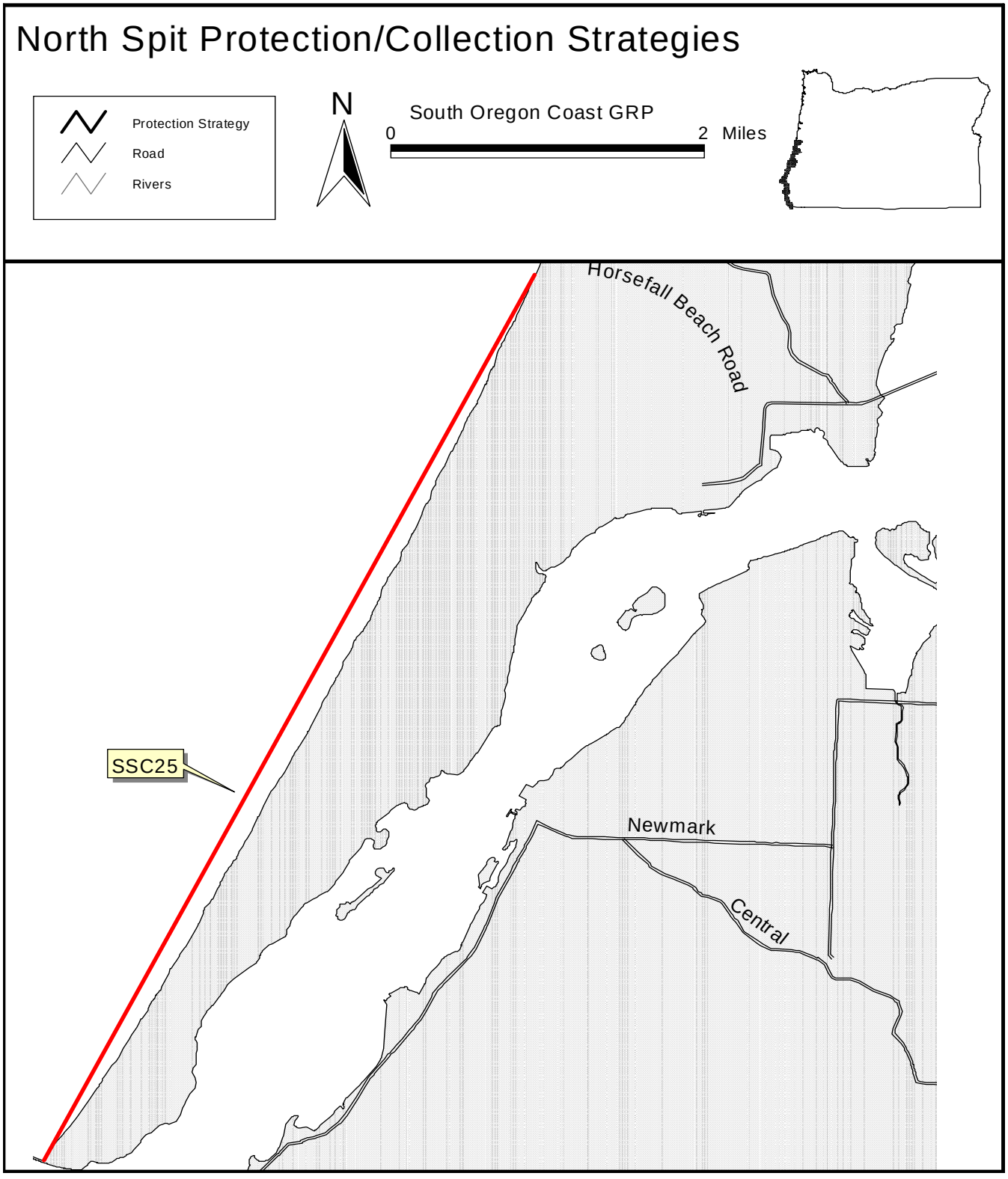


Figure 4-8. North Spit Protection/Collection Options

Table 4-9. Sunset Beach/Cape Arago Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-26	Bastendorf beach to Yoakam Point 43°20'44"N 124°20'50"W	Preclean and Collection	Recovery/skimming only	Enhance natural collection; current eddies out of Coos Bay on ebb tide		County Park or tunnel Pt. USN facility	Recreational site
SSC-27	Yoakam Pt to Lighthouse Beach 43°20'23"N 124°21'56"W	Preclean and Collection	Recovery/skimming only	Natural collection area; could be enhanced by boom and skimmer combinations		Cape Arago Highway	
SSC-28	Sunset Bay 43°19'50"N 124°22'42"W	Protection or Collection (and preclean)	1000' petroboom or larger	Use large boom to protect bay if conditions allow; may be too much wave energy	Good staging for surrounding areas	Use Cape Arago Highway; too choppy for skimmers	Recreational; rocky intertidal
SSC-29	N. Cove @ Cape Arago 43°18'29"N 124°23'52"W	Preclean		Probably not much can be effective; high wave energy area		Boat or helicopter only	Rocky intertidal
SSC-30	S. Cove @ Cape Arago 43°18'13"N 124°23'46"W	Preclean		Probably not much can be effective; high wave energy area		Boat or helicopter only	Rocky intertidal

4.2.9 Sunset Beach/Cape Arago

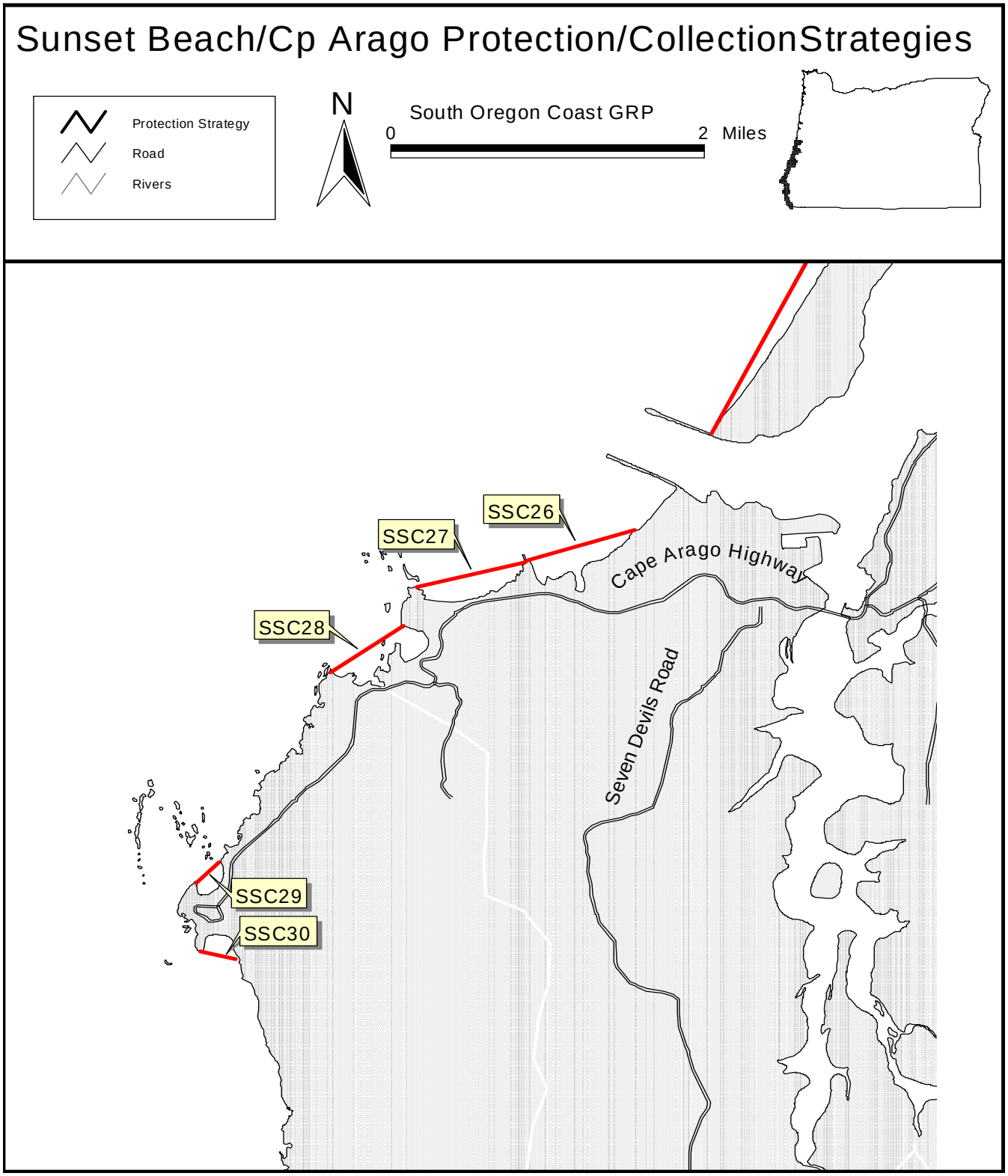


Figure 4-9. Cape Arago Protection/Collection Options

Table 4-10. Coquille River North Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-31	Five Mile Point to Whiskey Run 43°12'40"N 124°23'39"W	Preclean		Sandy beaches, may be able to collect tarballs, weathered oil	Use Seven Devils Road Wayside as staging area	Use Seven Devils Road Wayside	Pinniped haulout; razor clam beach
SSC-32	Bullards Beach State Park 43°09'05"N 124°24'49"W	Preclean		State Park, no feasible booming strategies, move debris above high tide line prior to impact	As staging area move along beach or US 101 to Bullards Beach	Use HWY 101; This is a good area for volunteer cleanup.	

4.2.10 Coquille River North

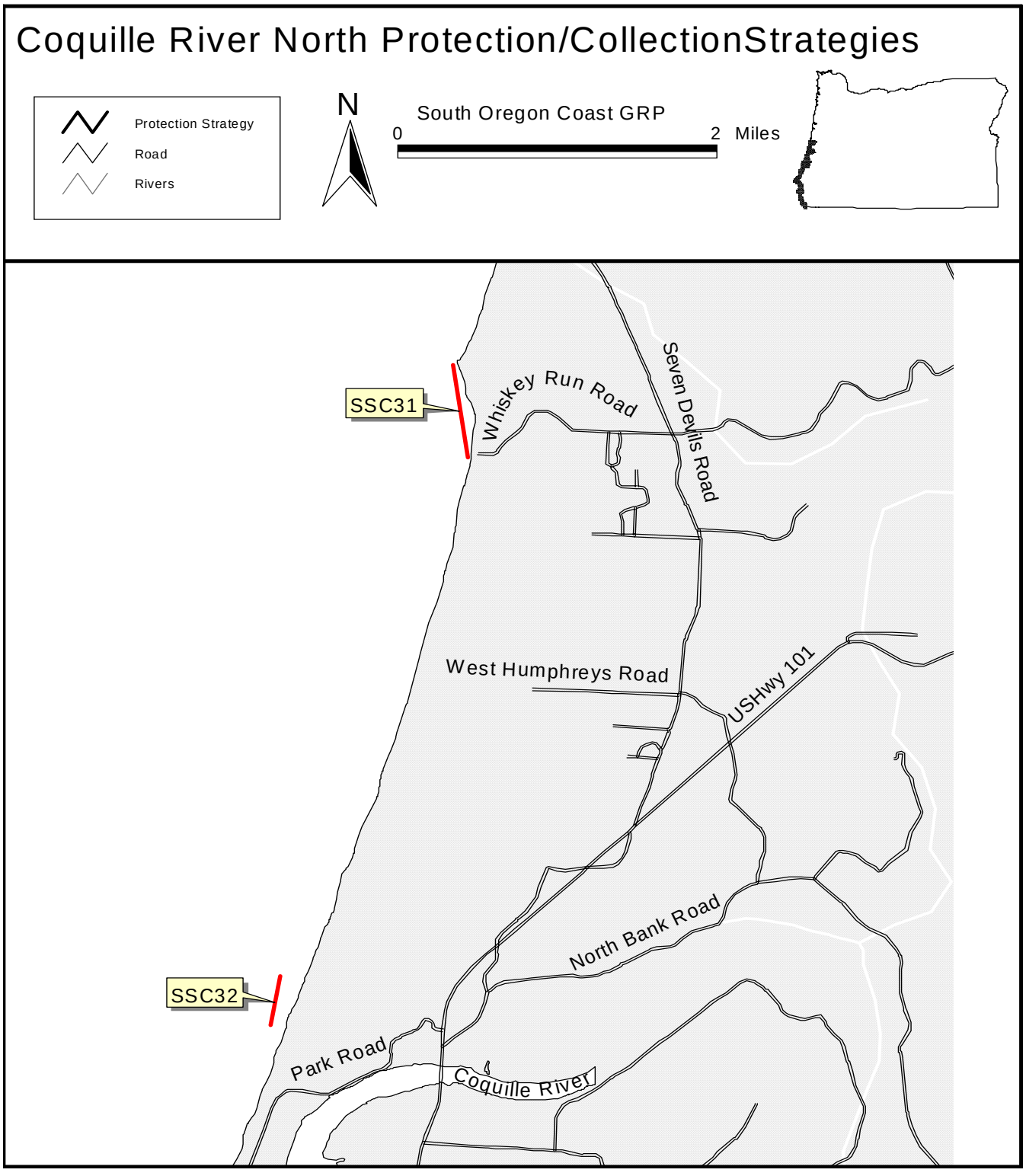


Figure 4-10. Coquille River North Protection/Collection Options

Table 4-11. Bandon Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-33	South Jetty 43°07'24"N 124°25'43"W	Exclusion	400' harbor boom; anchor to rocks	Block passages of old jetty to prevent oil from entering bay		Use road access; will need support boats for deployment	
SSC-34	Marina Boat Basin 43°07'15"N 124°24'46"W	Collection	800' for diversion; 100' for protection of marina entrance	Use diversion boom into channel; then collect @ marina jetty; protect vessels where able.	Bandon Marina; discuss with Bandon Port Manager	Bandon Marina; rocks and pilings are available--will still need anchors	
SSC-35	Ferry Creek intersect with HWY 101 43°07'13"N 124°24'28"W	Exclusion	100' hard	Boom off creek to protect		Access from HWY 101	
SSC-36	Coquille River North Jetty 43°07'23"N 124°24'59"W	Collection		Natural collection area, could enhance with boom if possible		Possible skimming location	
SSC-37	Various marshes north of Bandon 43°08'00"N 124°24'32"W	Exclusion/Protection	500' hard; use sorbent boom if exclusion not possible	If possible, block main channels into marshes, especially on east side.	Use marsh boom if available		
SSC-38	Coquille Point (43°06'52"N 124°26'11"W) to Haystock Rock (43°05'11"N 124°26'15"W)	Preclean		Probably no booming applicable; sandy beach and rocky intertidal area		Possible offshore skimming; north & south jetties are natural collection areas.	Falcons, nesting seabirds, pinnipeds
SSC-39	Devils Kitchen to Two Mile Creek	Preclean		Probably no booming applicable; sandy beach and rocky intertidal area		Possible offshore skimming; get beach access permission from Coos County Sheriff	
SSC-40	Devils Kitchen 43°04'55"N 124°25'03"W	Exclusion	100'—marsh boom or sand dam entrances to creeks	Moving mouths to creeks; in heavy surf mouth may be overrun along with much of waterway that is parallel to coastline			
SSC-41	Bradley Lake Creek 43°04'18"N 124°26'02"W	Exclusion	100' (marsh boom if available)	Bank to Bank booming or sand damming to protect creek		From highway 101	Anadromous fish

4.2.11 Bandon

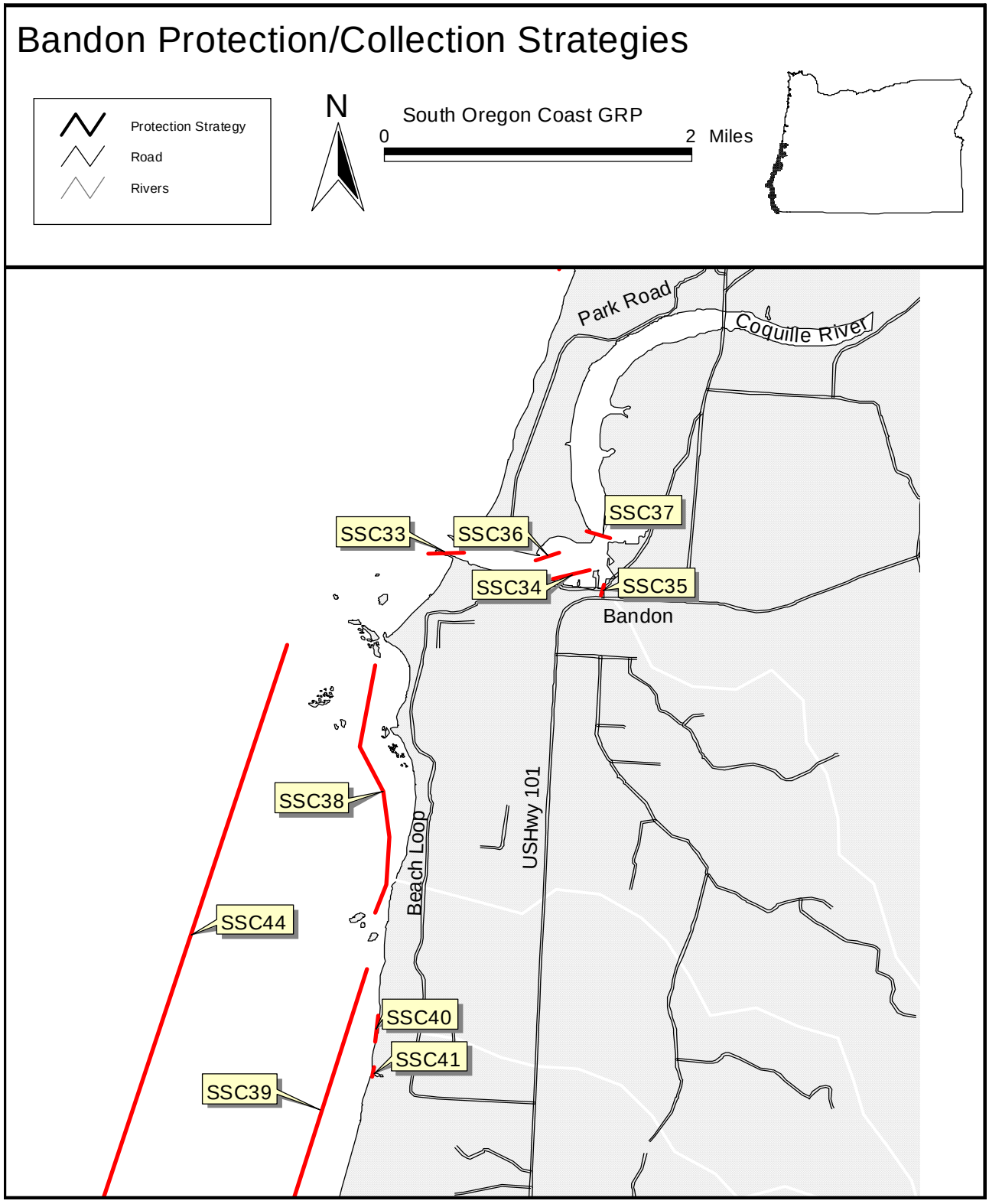


Figure 4-11. Bandon Protection/Collection Options

Table 4-12. Bandon State Park Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-39	Devils Kitchen (43°04'55"N 124°26'03"W) to Two Mile Creek (43°02'39"N 124°26'29"W)	Preclean		Probably no booming applicable; sandy beach and rocky intertidal area		Possible offshore skimming; get beach access permission from Coos County Sheriff	
SSC-42	Two Mile Creek 43°02'39"N 124°26'29"W	Exclusion	100' (marsh boom if available)	Bank to Bank booming or sand damming to protect creek		From highway 101	Anadromous fish
SSC-43	Four Mile Creek 43°00'01"N 124°27'22"W	Exclusion	100' (marsh boom if available)	Bank to Bank booming or sand damming to protect creek		From highway 101	Anadromous fish
SSC-44	Coquille Point 43°06'52"N 124°26'11"W to Blalock Point (42°52'35"N 124°32'04"W)	Preclean where able	None				Snowy plover nesting March-Sept.

4.2.12 Bandon State Park

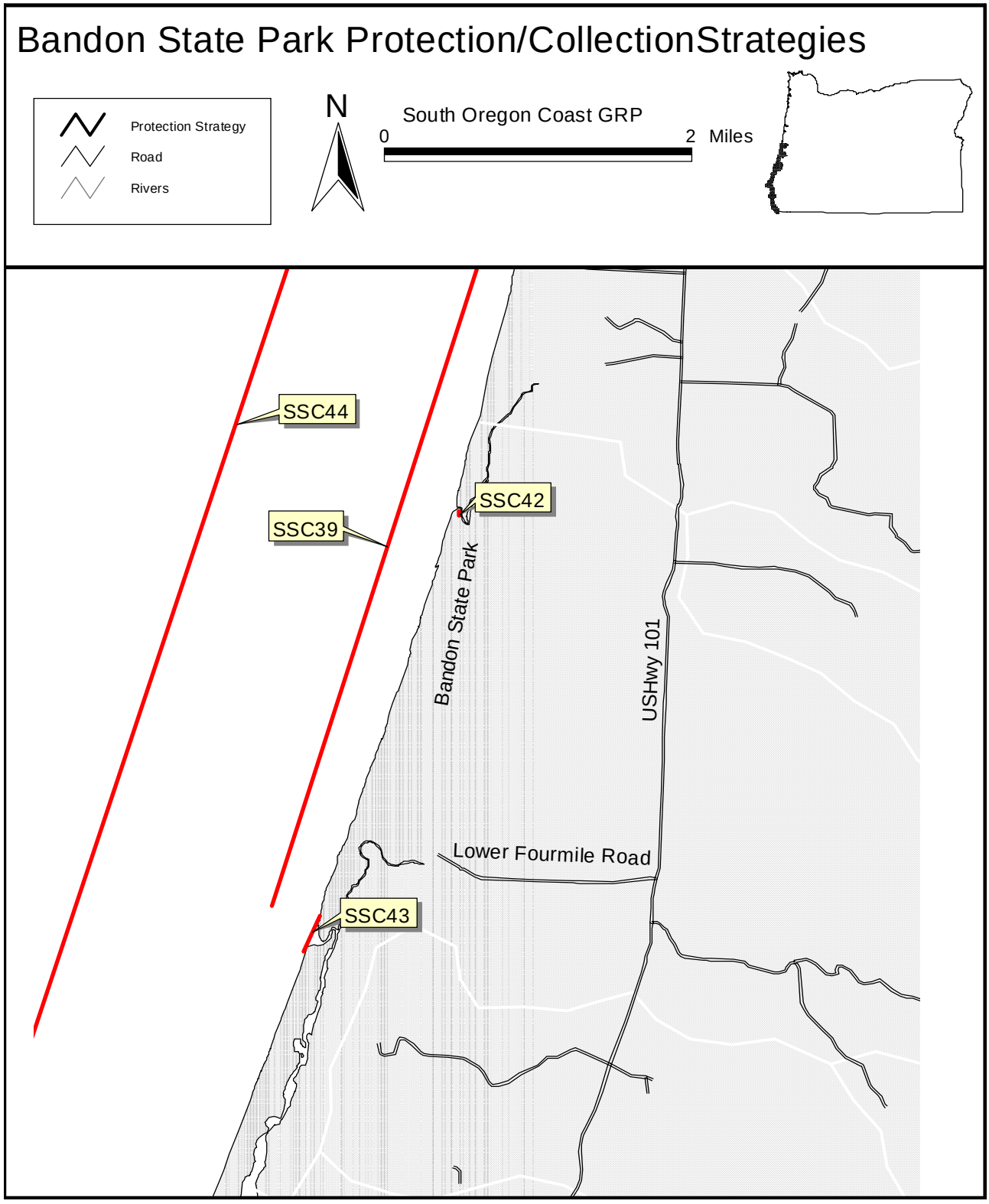


Figure 4-12. Bandon State Park Protection/Collection Options

Table 4-13. Floras Lake Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-44	Coquille Point (43°06'52"N 124°26'11"W) to Blalock Point (42°02'39"N 124°16'11"W)	Preclean where able	None				Snowy plover nesting March-Sept.
SSC-45	New River 43°00'01"N 124°27'22"W		200'	Boom across mouth to protect sensitive areas		Limited site access	Anadromous Fish, Aleutian Canadian Geese, Heron rookeries

4.2.13 Floras Lake

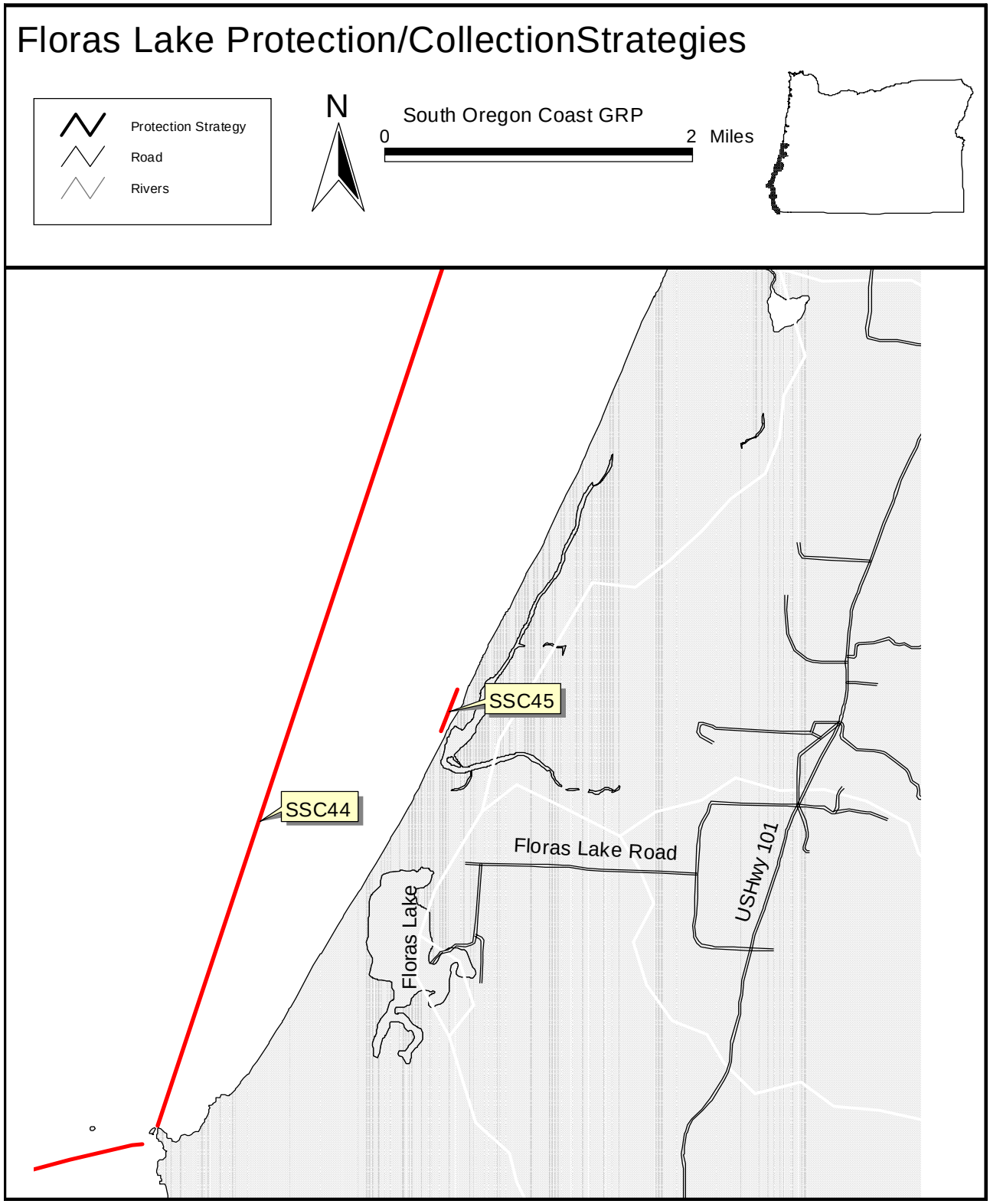


Figure 4-13. Floras Lake Protection/Collection Options

Table 4-14. Cape Blanco Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-46	Blalock Point (42°52'35"N 124°32'04"W) to Cape Blanco (42°50'28"N 124°33'49"W)					Beach access from both sides of Cape Blanco, Cape Blanco Highway	Peregrine Falcons and marine mammal haulouts
SSC-47	Sixes River 42°51'17"N 124°32'35"W	Protection	200'	Boom Mouth		From Cape Blanco Highway	Anadromous Fish
SSC-48	Elk River 42°48'25"N 124°31'51"W	Protection	300' harbor	Boom Mouth similar to S-15		Beach access from both sides of Cape Blanco Highway	Anadromous Fish

4.2.14 Cape Blanco

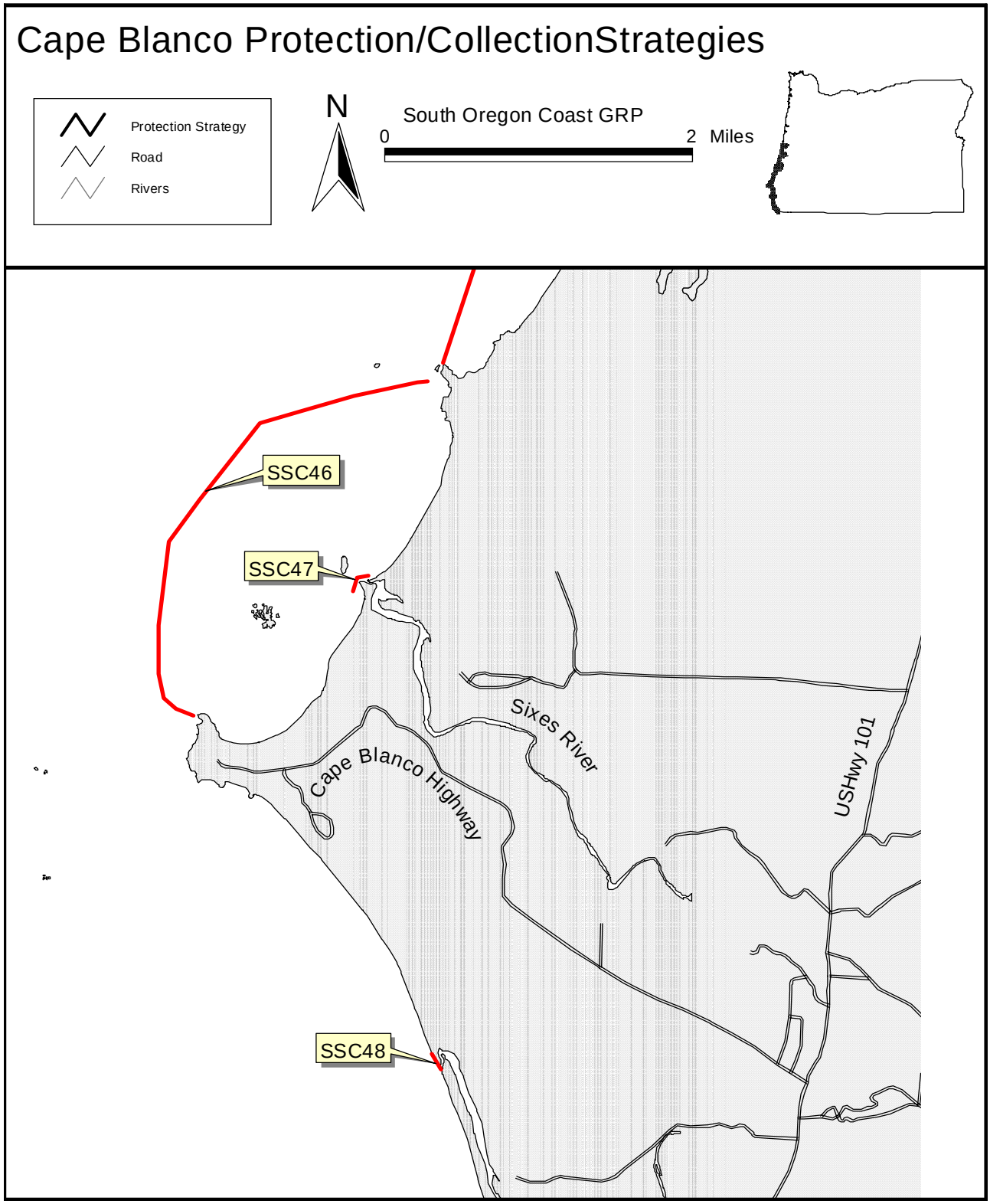


Figure 4-14. Cape Blanco Protection/Collection Options

Table 4-15. Port Orford Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-49	Nellies Cove 42°44'11"N 124°30'21"W	Protection	As needed for skimming ops				Rocky intertidal habitat; seabird colonies, very calm in summer. Very high energy zone remainder of year.
SSC-50	Port Orford to Sisters Rock 42°43'57"N 124°30'35"W to 42°35'44"N 124°24'25"W	Protection	Sorbent/snare lines	Kelp Beds			Kelp beds @ Red Fish Rocks; Sea birds - rocky intertidal habitat.

4.2.15 Port Orford

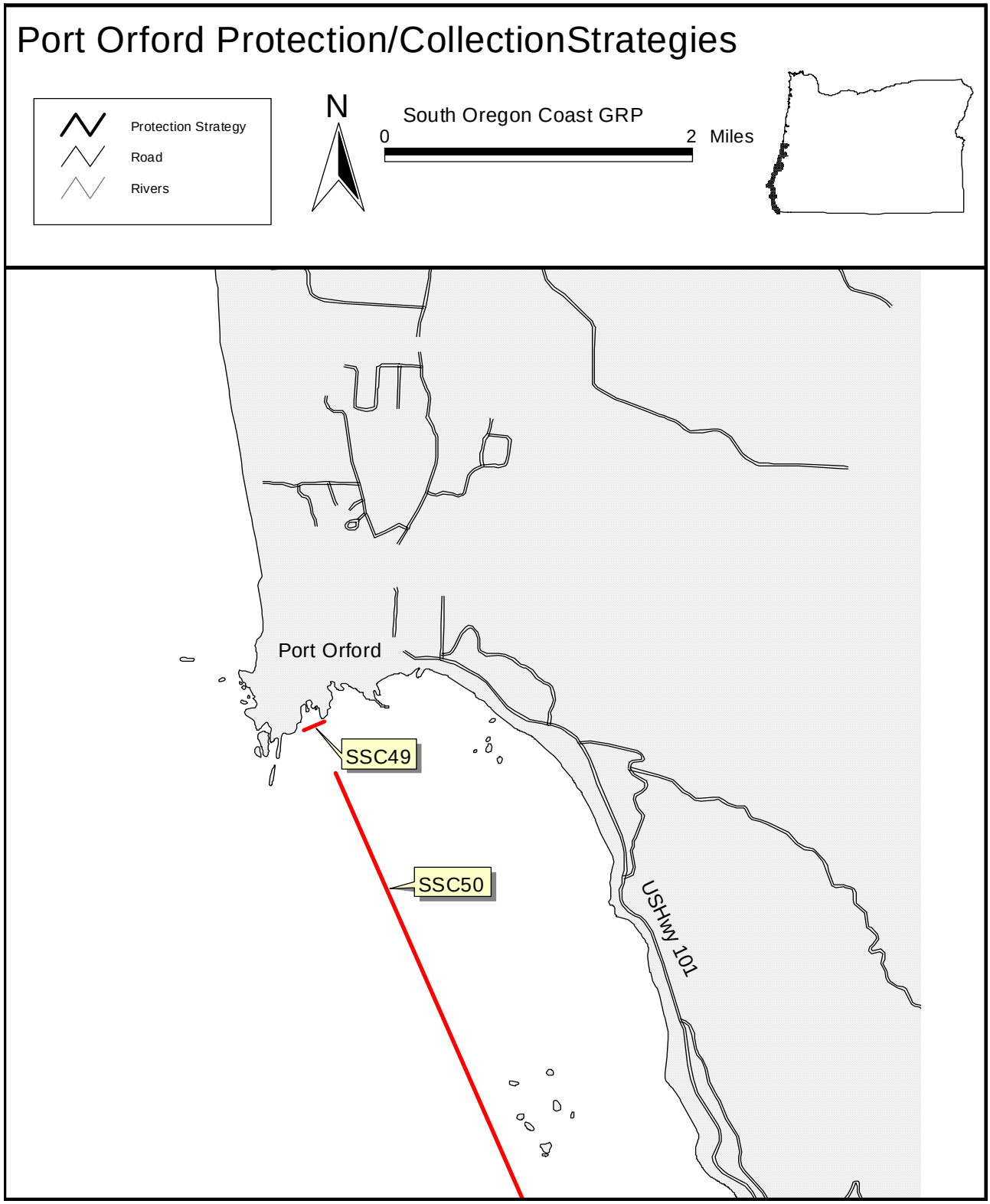


Figure 4-15. Port Orford Protection/Collection Options

Table 4-16. Humbug Mountain Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-50	Port Orford to Sisters Rock 42°43’57”N 124°30’35”W to 42°35’44”N 124°24’25”W	Protection	Sorbent/snare lines	Kelp Beds			Kelp beds @ Red Fish Rocks; Sea birds - rocky intertidal habitat.

4.2.16 Humbug Mountain

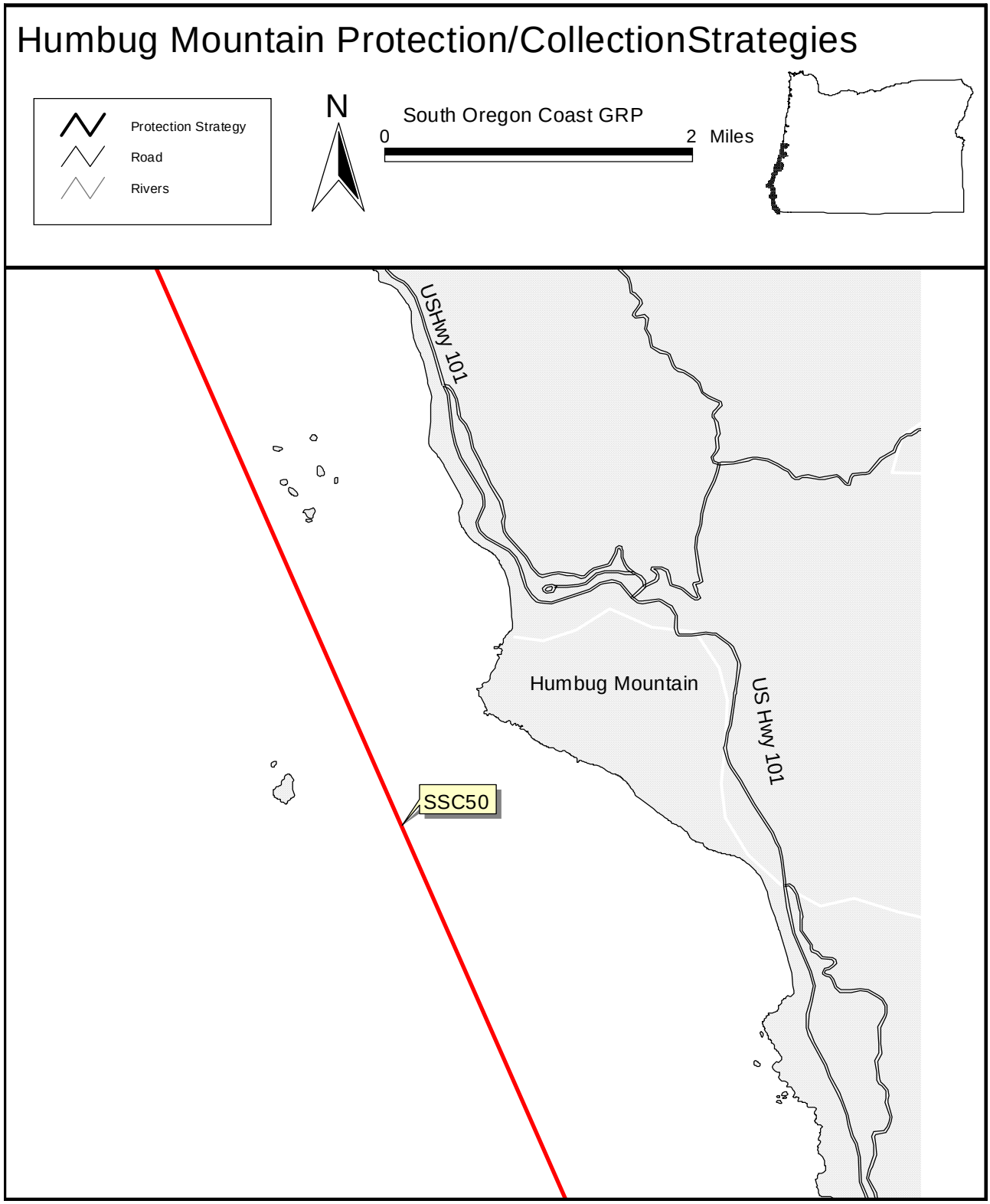


Figure 4-16. Humbug Mountain Protection/Collection Options

Table 4-17. Sisters Rocks Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-50	Port Orford to Sisters Rock 42°43'57"N 124°30'35"W to 42°35'44"N 124°24'25"W	Protection	Sorbent/snare lines	Kelp Beds			Kelp beds @ Red Fish Rocks; Sea birds - rocky intertidal habitat.
SSC-51	Eucher Creek 42°33'54"N 124°23'27"W	Exclusion	100' Harbor	Similar to S-14, S-15, & S-20		U.S. 101	Summer rearing grounds for Anadromous fish, T&E plants.

4.2.17 Sisters Rocks

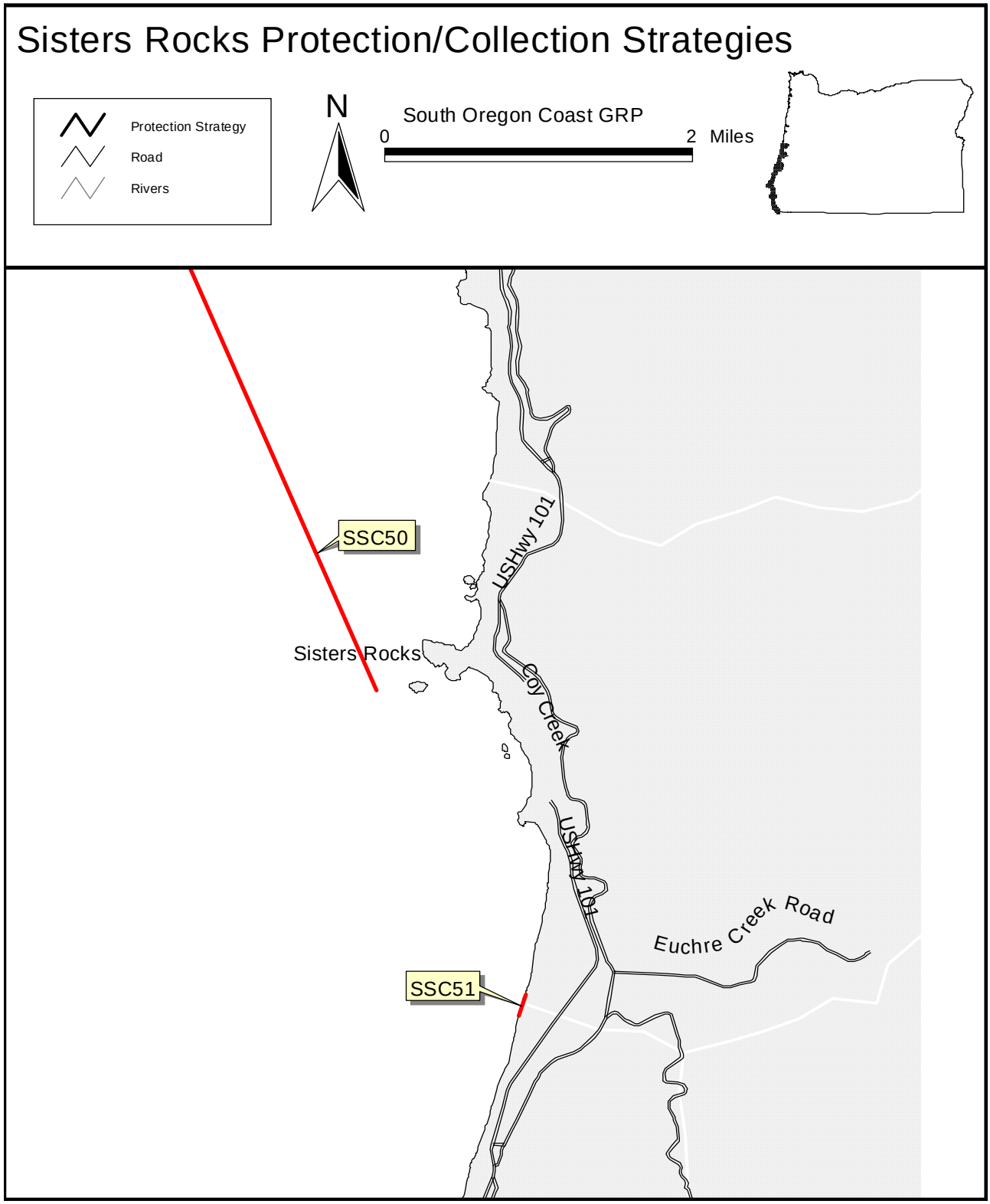


Figure 4-17. Sisters Rocks Protection/Collection Options

Table 4-18. Hubbard Mound Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-52	Hubbard Mound 42°28’39”N 124°25’28”W						Seabirds, rocky intertidal zone.

4.2.18 Hubbard Mound

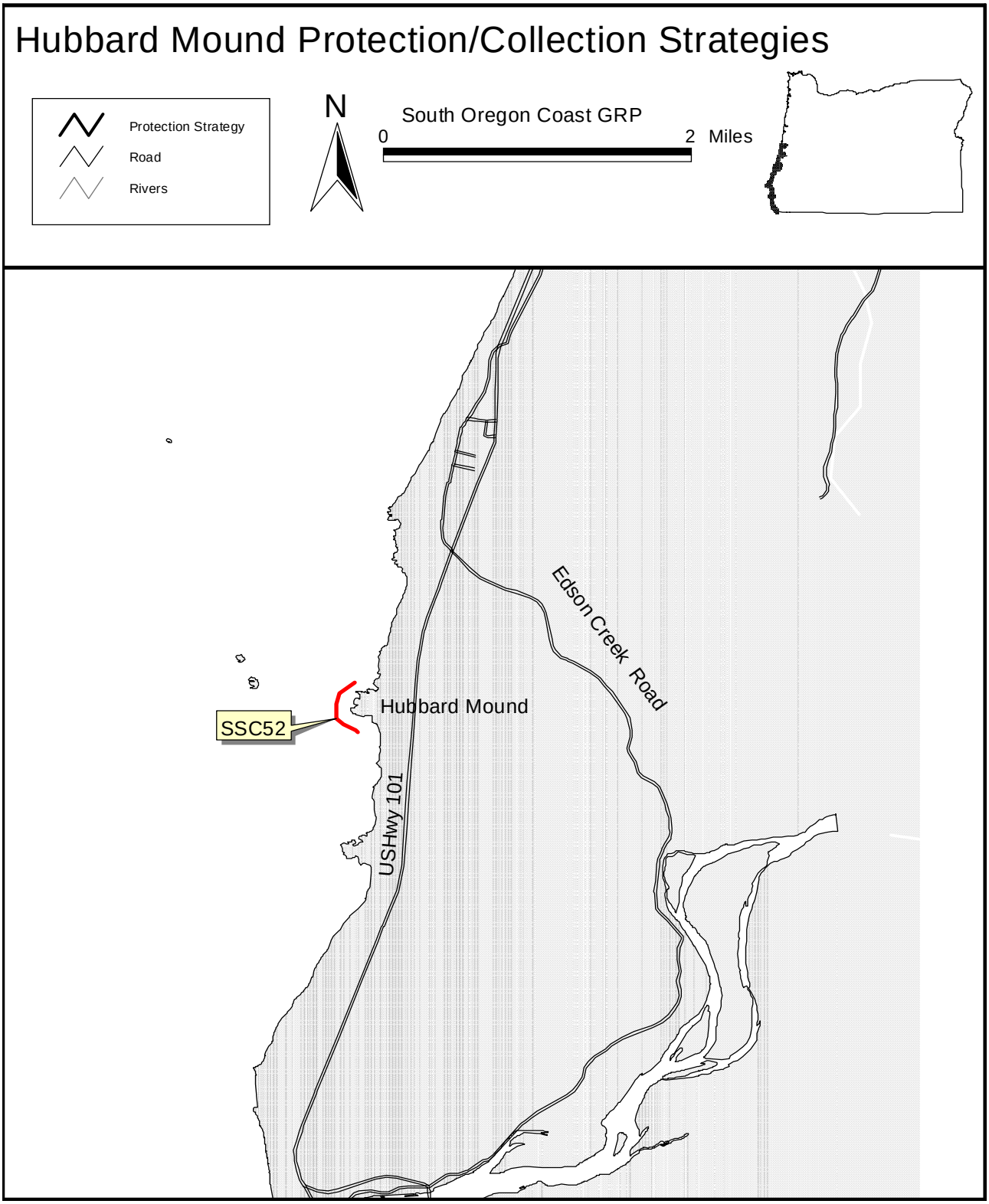


Figure 4-18. Hubbard Mound Protection/Collection Options

Table 4-19. Rogue River Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-53	Rogue River Reef 42°26'55"N 124°28'57"W			High energy area		Boat	Bird & pinniped haulout; kelp beds
SSC-54	Rogue River 42°25'09"N 124°25'51"W		500' & 600' Harbor Boom	Jetties - outside areas are natural collection for debris		U.S. 101 to beach access at Gold Beach	heron, eagles, Pelicans, Anadromous Fish Runs
SSC-55	Hunter Creek and Associated Beach 42°23'10"N 124°25'26"W		200'	Natural Seasonal blockage. Breeches in winter, similar to s-14, S-15, S-20, & S-24		U.S. 101 to beach access	Moderate public use.

4.2.19 Rogue River

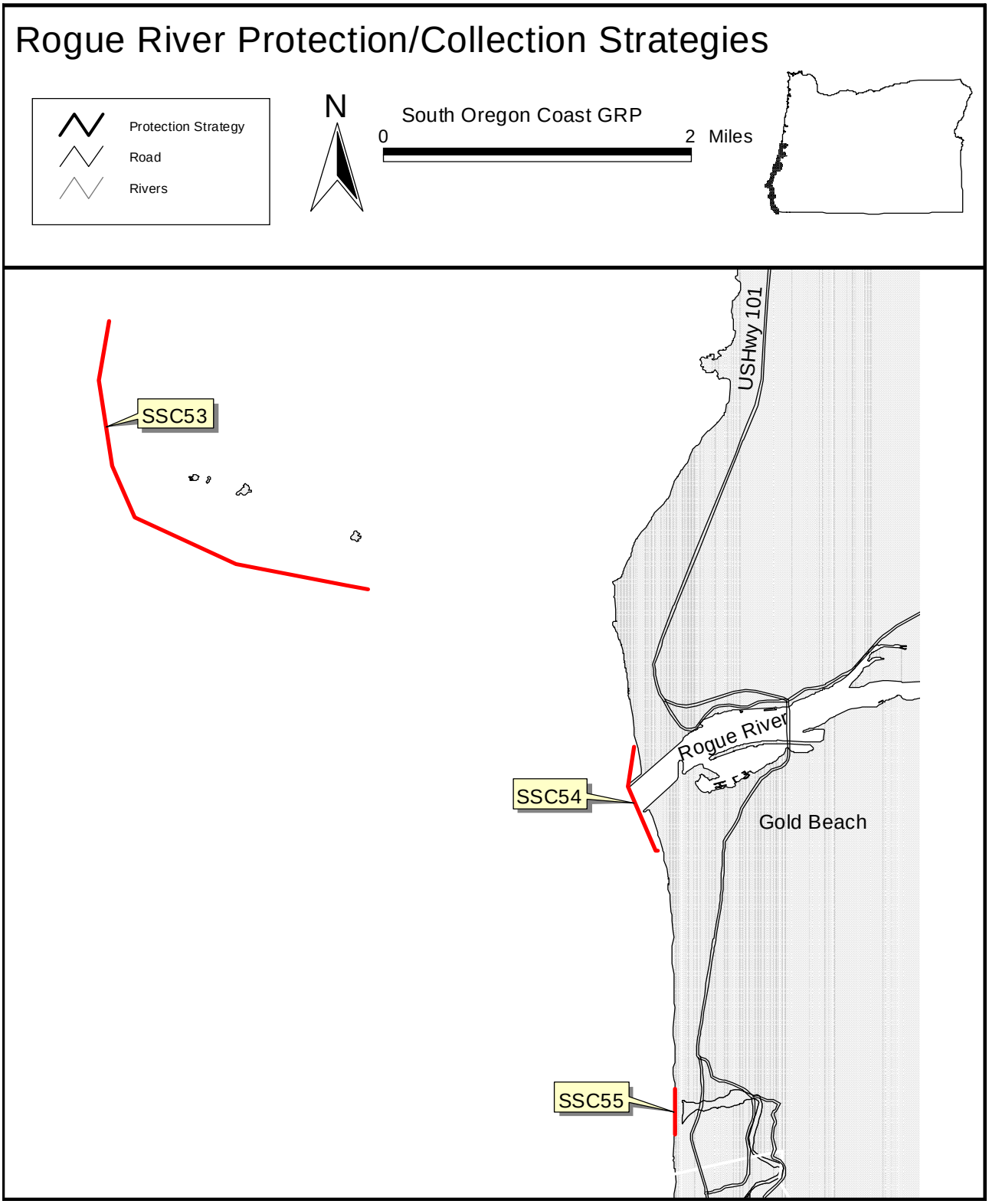


Figure 4-19. Rogue River Protection/Collection Options

Table 4-20. Hunter's Cove Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-56	Cape Sebastion 42°19'09"N 124°25'33"W			Hunters Cove; natural collection area			High resource value
SSC-57	Myers Creek Beach 42°18'27"N 124°24'35"W			Limit vehicle access		South side Cape Sebastion	Razor clams on beach

4.2.20 Hunter's Cove

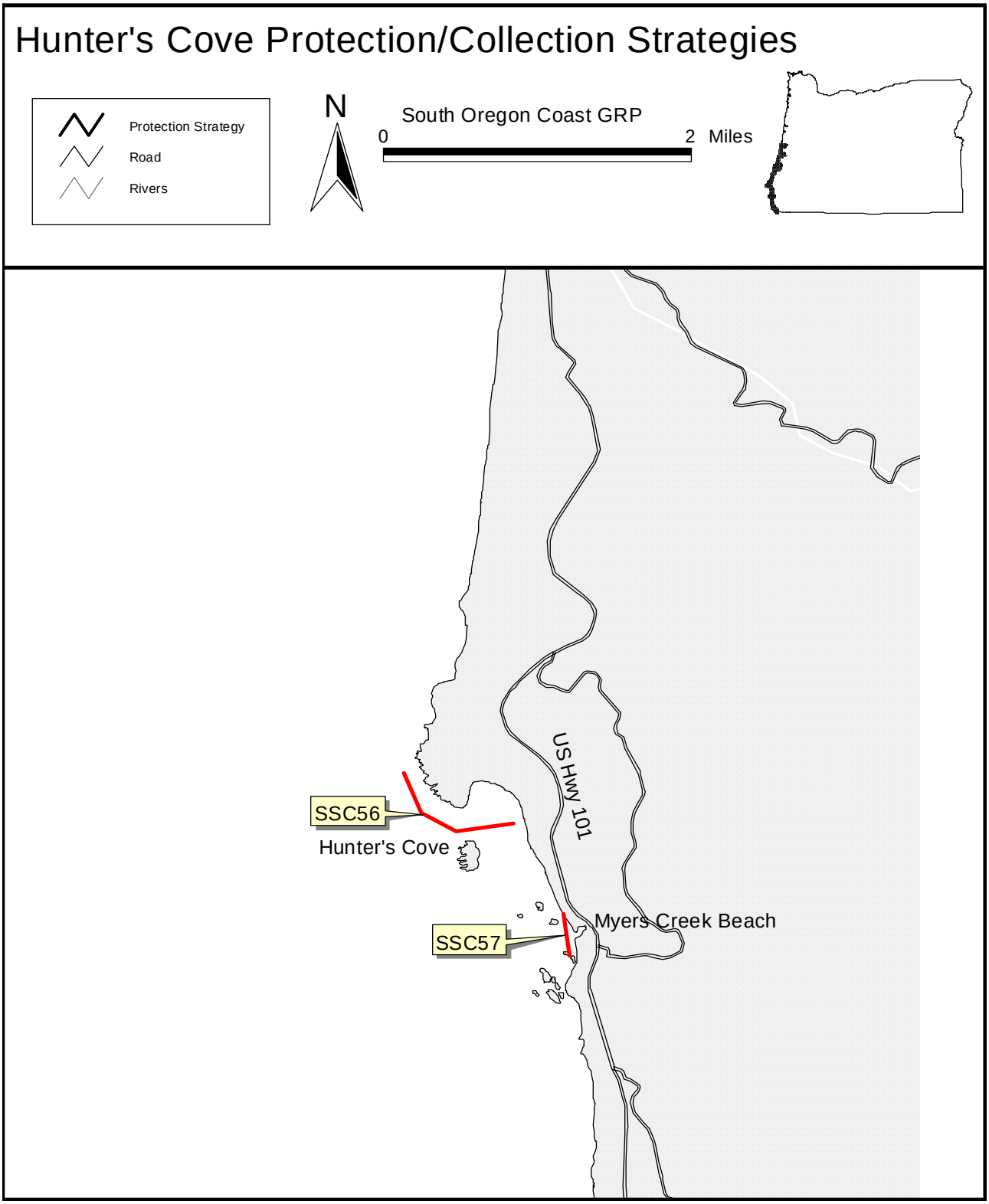


Figure 4-20. Hunter's Cove Protection/Collection Options

Table 4-21. Crook Point Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-58	Pistol River 42°16’32”N 124°24’25”W		300’			From Highway 101	Anadromous fish. Open beaches are Snowy Plover wintering over areas.
SSC-59	Crook Point Complex and Mack Reef 42°15’08”N 124°25’06”W to 42°13’27”N 124°24’03”W						Kelp beds, pinnipeds, seabirds, rocky intertidal zone.

4.2.21 Crook Point

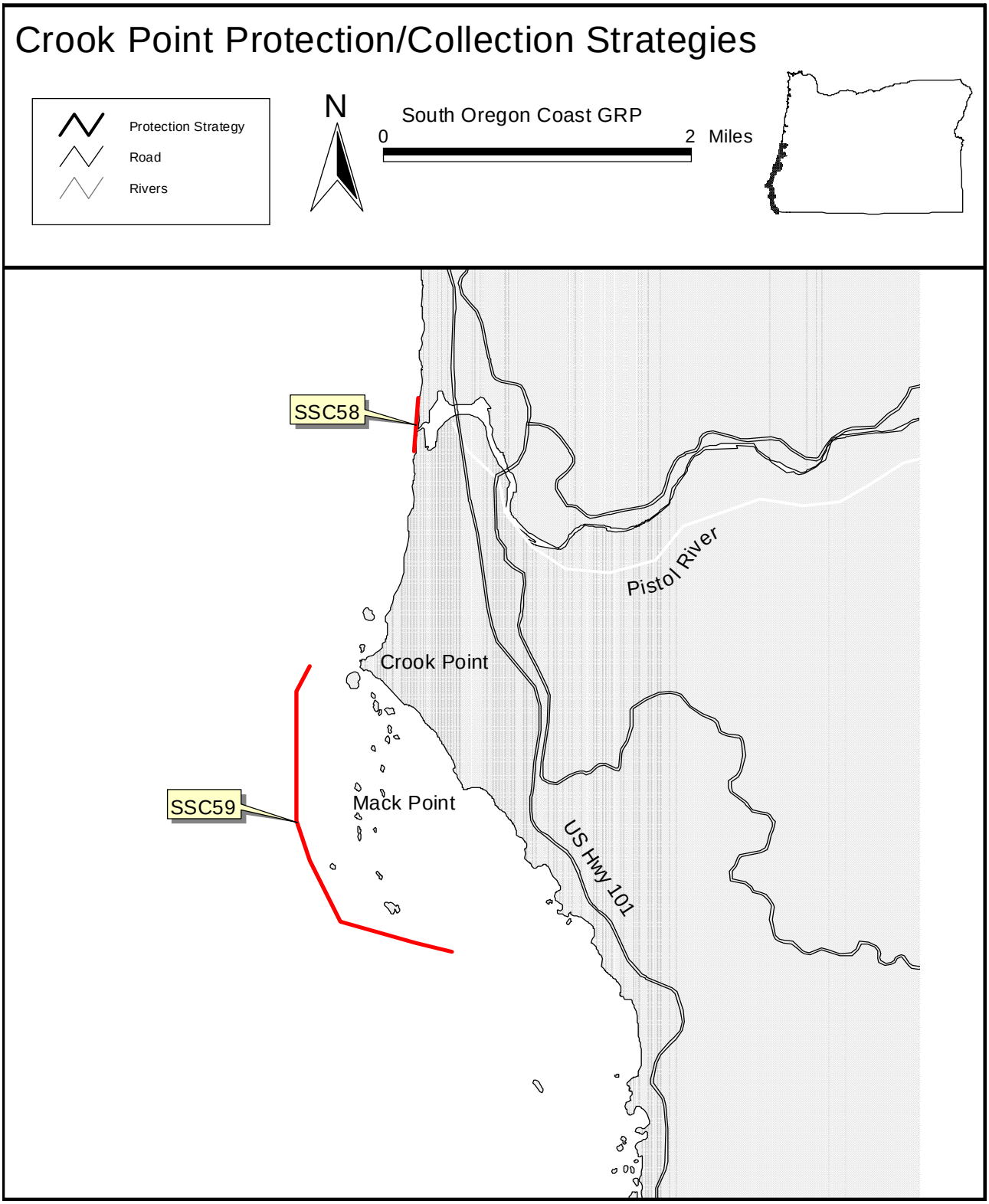


Figure 4-21. Crook Point Protection/Collection Options

Table 4-22. Whalehead Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-60	Mack Arch (42°14'25"N 124°23'58"W) to Whale Head (42°08'39"N 124°21'37"W)					Practically inaccessible	Rocky intertidal zone, kelp beds, high natural resource value.
SSC-61	Whale Head (42°08'39"N 124°21'37"W) to Chetco River (42°02'39"N 124°16'11"W)					Lone Ranch Beach, Harris beach, Practically inaccessible	Rocky intertidal zone. Whale Head Creek is a natural collection area. Several small, high gradient streams, very high energy area.

4.2.22 Whalehead

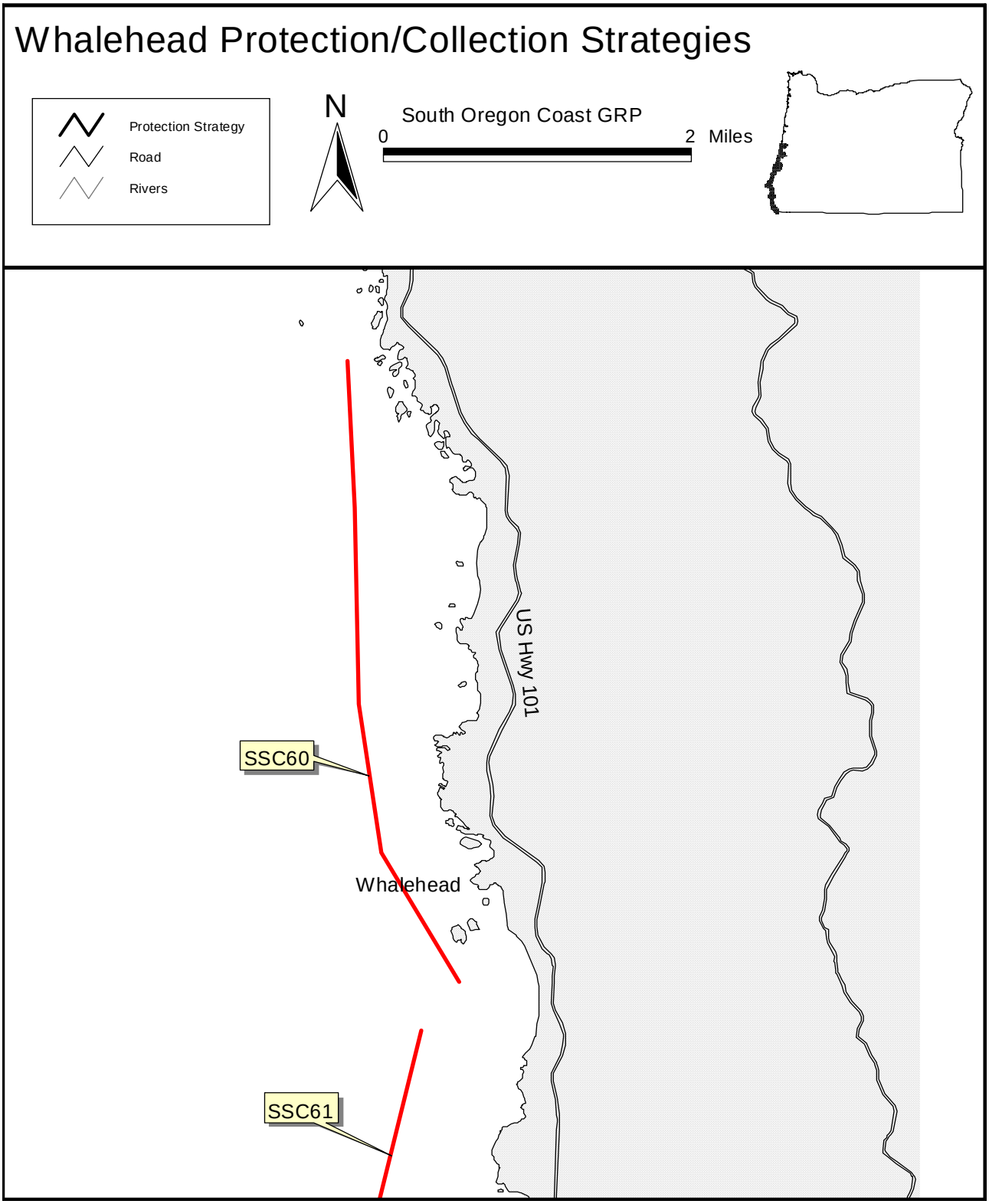


Figure 4-22. Whalehead Protection/Collection Options

Table 4-23. Brookings Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-61	Whale Head (42°08'39"N 124°21'37"W) to Chetco River (42°02'39"N 124°16'11"W)					Lone Ranch Beach, Harris beach, Practically inaccessible	Rocky intertidal zone. Whale Head Creek is a natural collection area. Several small, high gradient streams, very high energy area.

4.2.23 Brookings

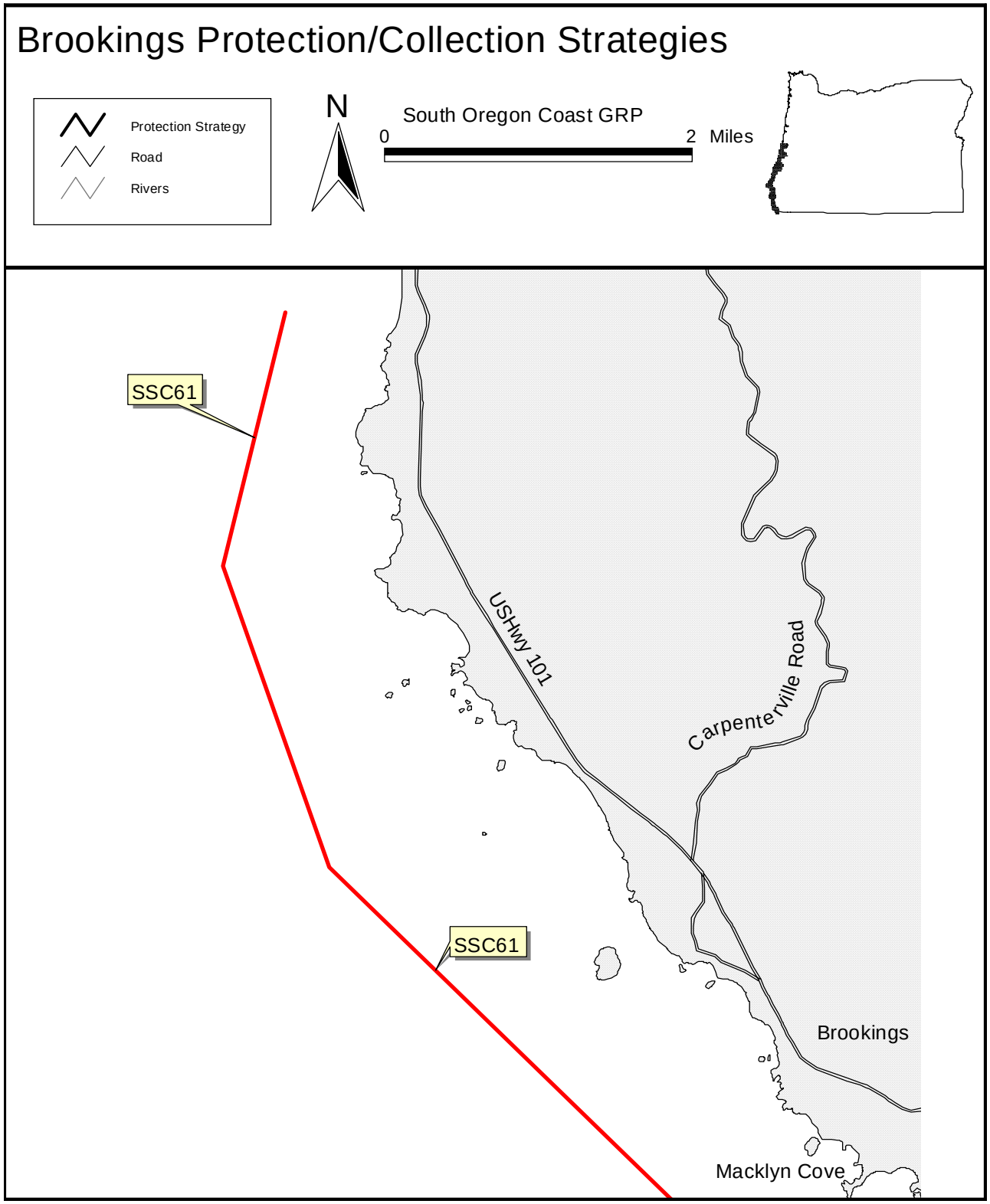


Figure 4-23. Brookings Protection/Collection Options

Table 4-24. Chetco Cove Protection/Collection Strategies Information

Strategy Number	Location	Response Strategy	Length & Type of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected (Items marked with * see Flight Restriction Zone)
SSC-61	Whale Head (42°08'39"N 124°21'37"W) to Chetco River (42°02'39"N 124°16'11"W)					Lone Ranch Beach, Harris beach, Practically inaccessible	Rocky intertidal zone. Whale Head Creek is a natural collection area. Several small, high gradient streams, very high energy area.
SSC-62	Chetco River 42°02'39"N 124°16'11"W		600' Harbor Boom	Run from jetties to a tended anchor; some natural collection		Brookings & Harbor, OR	
SSC-63	Chetco River (42°02'39"N 124°16'11"W) to California Border (42°00'00"N 124°12'41"W)			High energy intertidal zone; very rocky			Seabirds
SSC-64	Winchuck River 42°00'15"N 124°12'51"W		200' Harbor Boom			Via Ocean View Drive	Anadromous Fish. Beaches are a natural debris collection area.

4.2.24 Chetco Cove

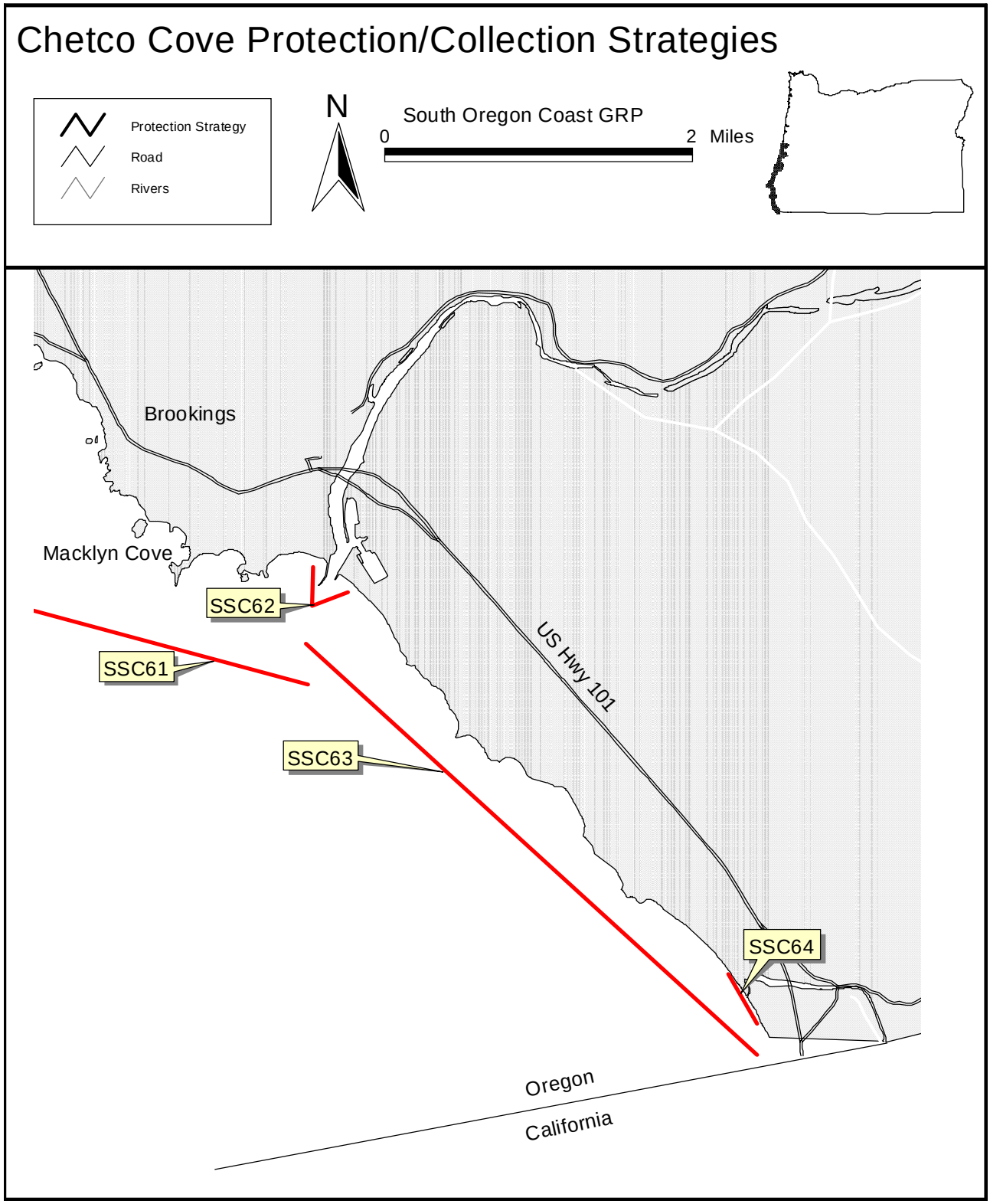


Figure 4-24. Chetco Cove Protection/Collection Options

4.3 Protection/Collection Priorities for South Oregon Coast Scenarios

The Protection/Collection Priority table for scenarios 1 - 4 give a detailed list of the priorities for each of 3 scenarios; oil spilled at the Umpqua River mouth - incoming tide, oil moving toward the Coquille River mouth - incoming tide, and oil spilled at the Gardiner waterfront - outgoing tide.

Procedures:

Identify the appropriate scenario based on the available information, select the priority, identify the strategy and go to the appropriate table.

Table 4-25. Oil spilled at the Umpqua River mouth, Incoming tide. (Scenario 1)

Priority	Strategy	Comments
1	SSC-12	Protect razor clam beds.
2	SSC-13	Protect sand shrimp.
3	SSC-14	
4	SSC-8	
5	SSC-9	

Refer to Table 4-5 and Figure 4-5 for exact locations of strategies.

Table 4-26. Oil moving toward the Coquille River mouth, Incoming tide. (Scenario 2)

Priority	Strategy	Comments
1	SSC-33	Prevent oil from entering the bay.
2	SSC-36	Natural collection area.
3	SSC-34	Diversion to collection.
4	SSC-35	Protect creek
5	SSC-37	Protect marshes

Refer to Table 4-11 and Figure 4-11 for exact locations of strategies.

Table 4-27. Oil spilled at the Gardiner Waterfront - Outgoing tide. (Scenario 3)

Priorities	Strategy	Comments
1	SSC-18	Protect waterfront, eelgrass and clam beds.
2	SSC-17	Protect waterfowl feeding area.
3	SSC-10	Protect eagle aerie and pinniped haulout.
4	SSC-9	Enhance natural collection.
5	SSC-8	Deflection.

Refer to Tables 4-5 and 4-6 and Figures 4-5 and 4-6 for exact locations of strategies.

5. Shoreline Countermeasures

5.1 Chapter Overview

The following text and maps are in draft form, and are intended to serve as a training tool for countermeasure contingency planning and implementation for shoreline areas in Federal Region X. Shoreline countermeasure processes evolve to reflect increasingly efficient treatment techniques. Accordingly, the following information will be altered as new information is added.

5.2 Shoreline Type Maps

The shoreline types in the following maps are a modified version of the environmental sensitivity index types for the Oregon coast and estuaries. The shoreline types were regrouped into five levels of sensitivity from the original ten shoreline types. The modified types are:

1. Open water, banks, or cliffs
2. Sand or gravel beaches
3. Riprap, sandy flats, or organic debris
4. Vegetated banks or tidal mud flats/aquatic beds
5. Marsh, swamp, or rocky intertidal

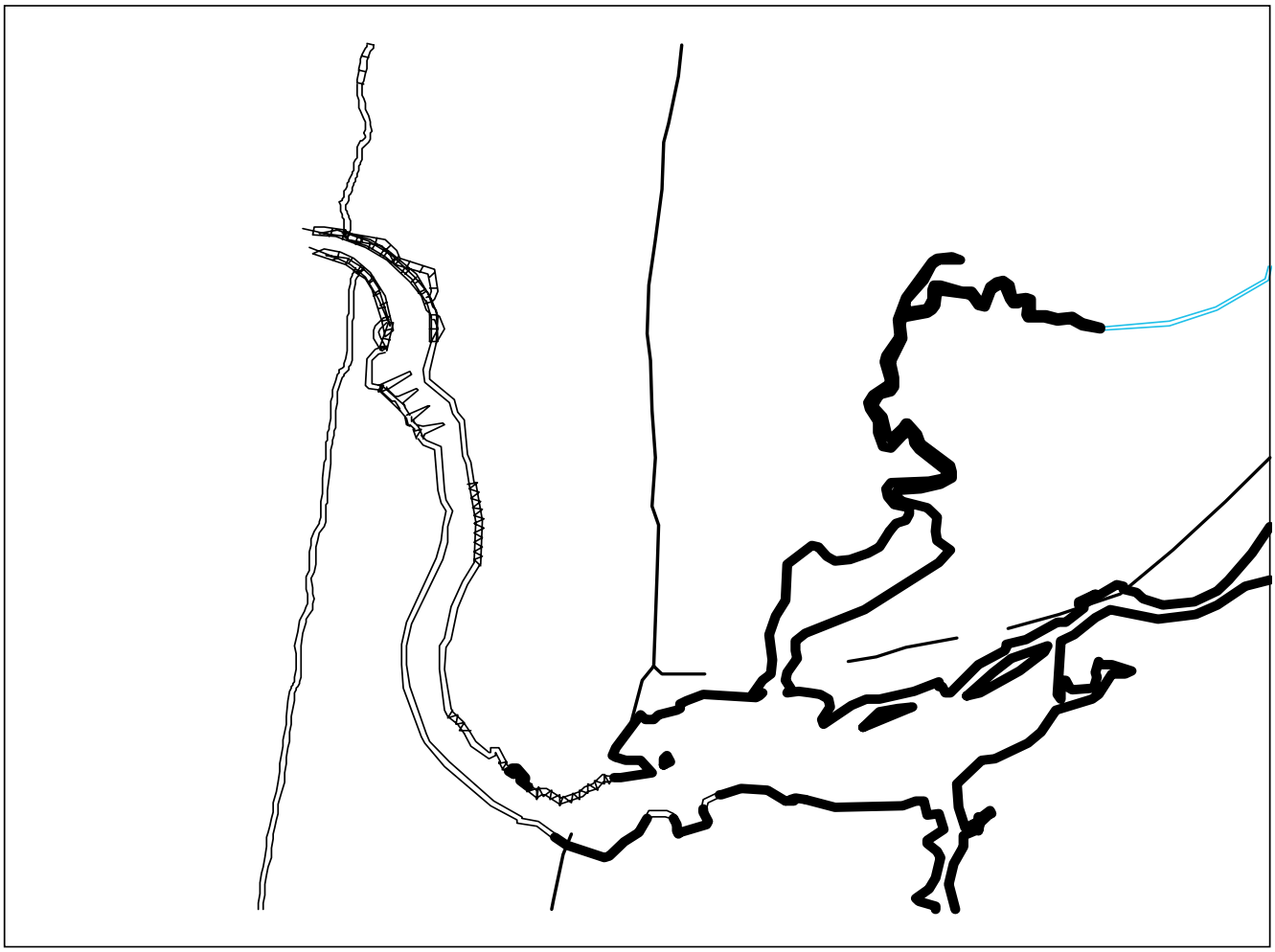
5.3 Oil Countermeasure Matrix

The Northwest Area Committee has developed a manual and a series of matrices as a tool for shoreline countermeasure response. The shoreline countermeasures matrices and manual will be included as a technical appendix to the Northwest Area Contingency Plan.

Shoreline countermeasures following an oil spill are a critical element in determining the ultimate environmental impact and cost resulting from a spill. Local response organizations and agencies have developed mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and for resolving problems as the treatment progresses.

Each section of the manual has been adapted to the specific environments, priorities, and treatment methods appropriate to the planning area. These elements provide the information needed to select cleanup methods for specific combinations of shoreline and oil types. Local information on shoreline types (Discussed in chapter 2) can be obtained from Environmental Sensitivity Index (ESI) atlases prepared by NOAA for northern and southern Puget Sound, the Washington and Oregon coast, and the Columbia River.

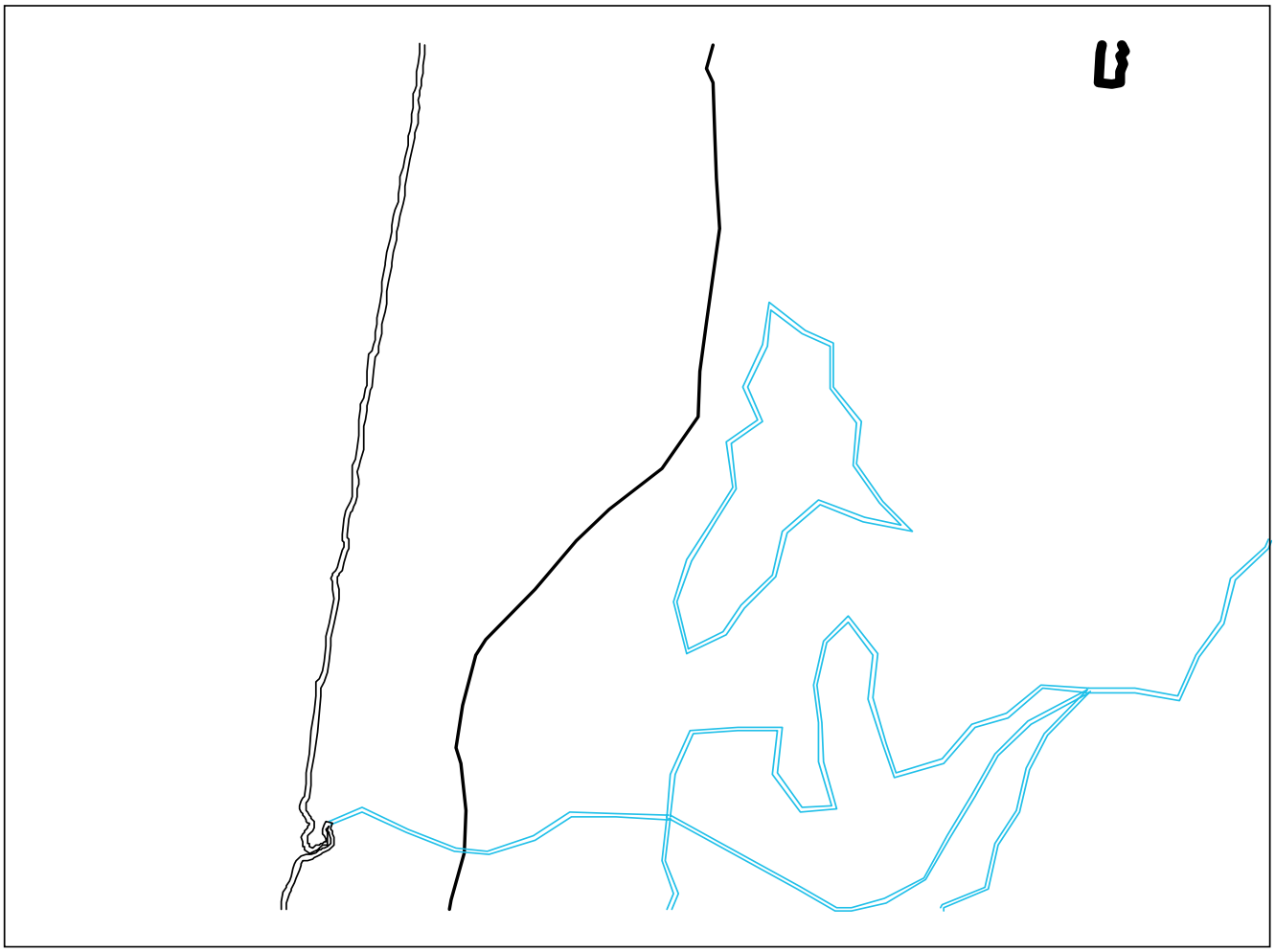
Florence



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-1. Florence Shoreline Types

North Beach



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

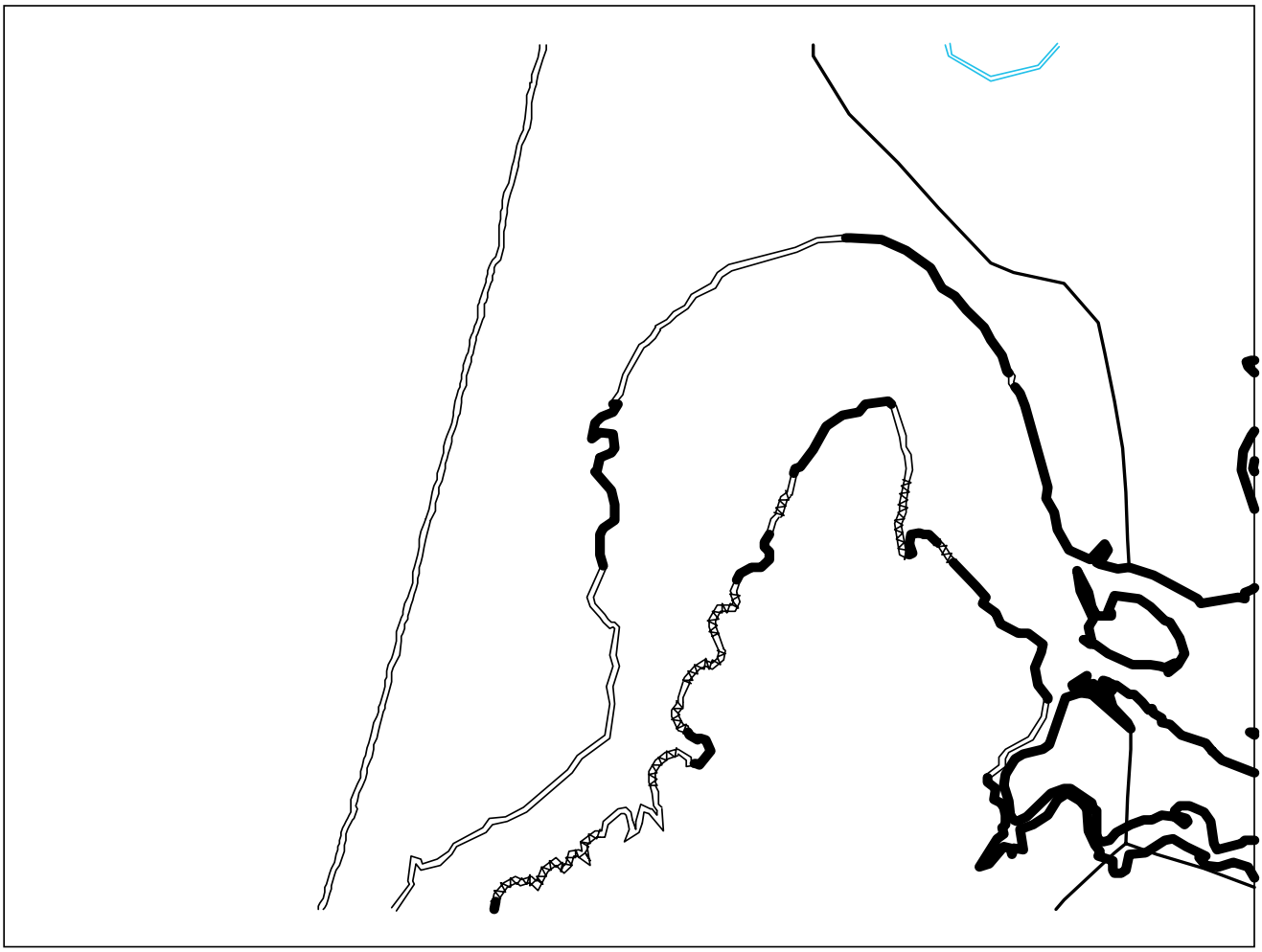
Figure 5-2. North Beach Shoreline Types

Tahkenitch Creek

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-3. Tahkenitch Creek Shoreline Types

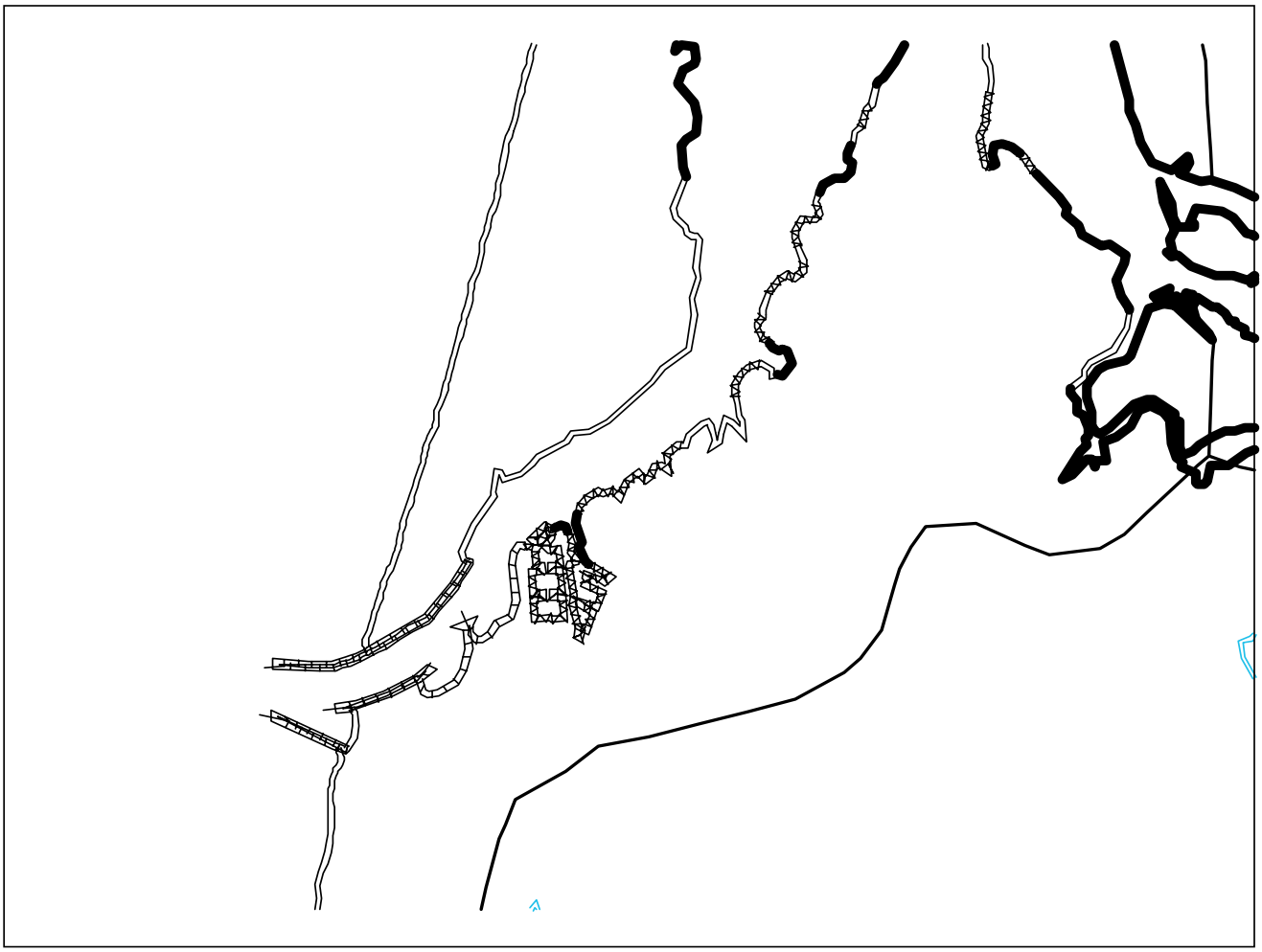
Umpqua River North



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-4. Umpqua River North Shoreline Types

Umpqua River South



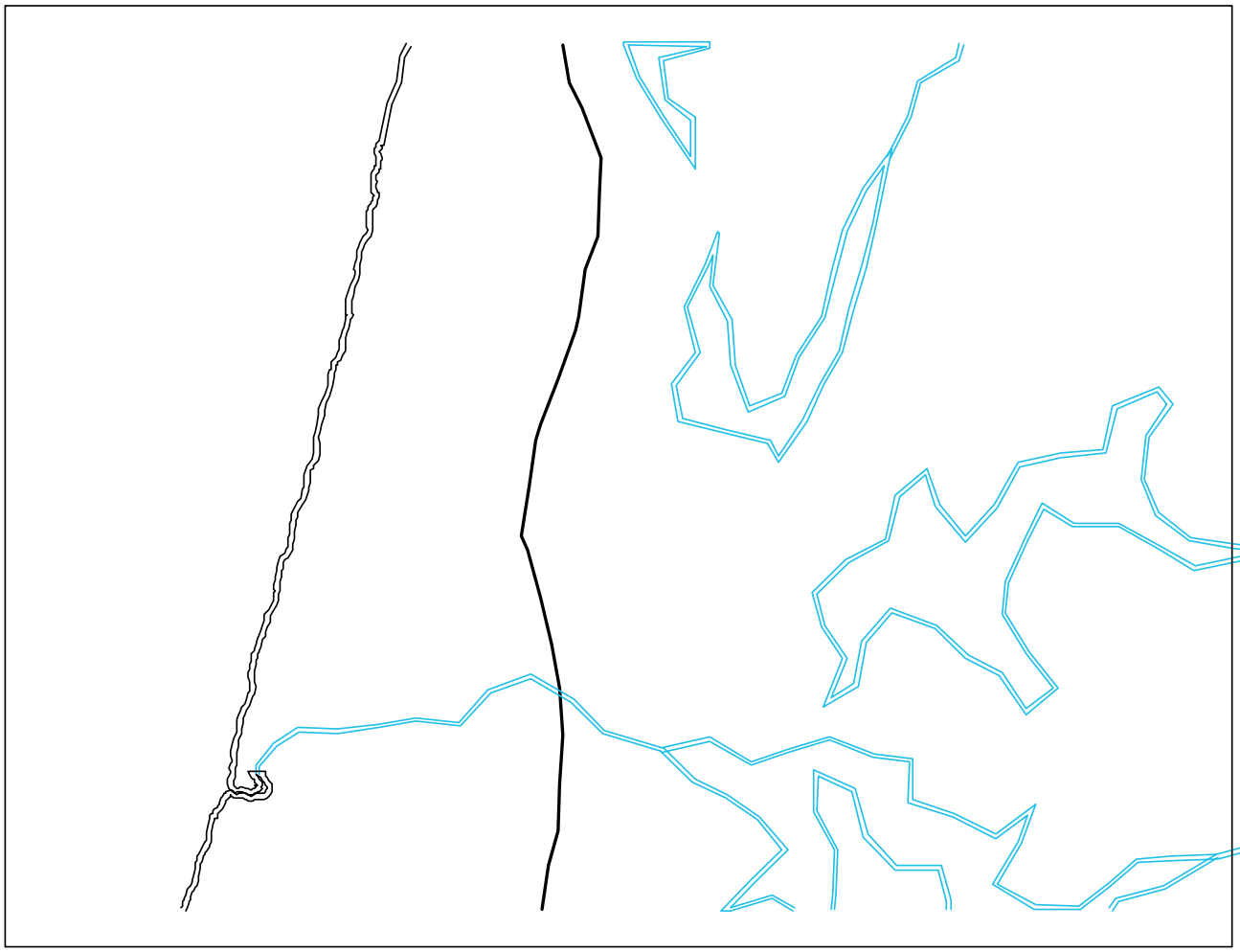
Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-5. Umpqua River South Shoreline Types

Reedsport

Figure 5-6. Reedsport Shoreline Types

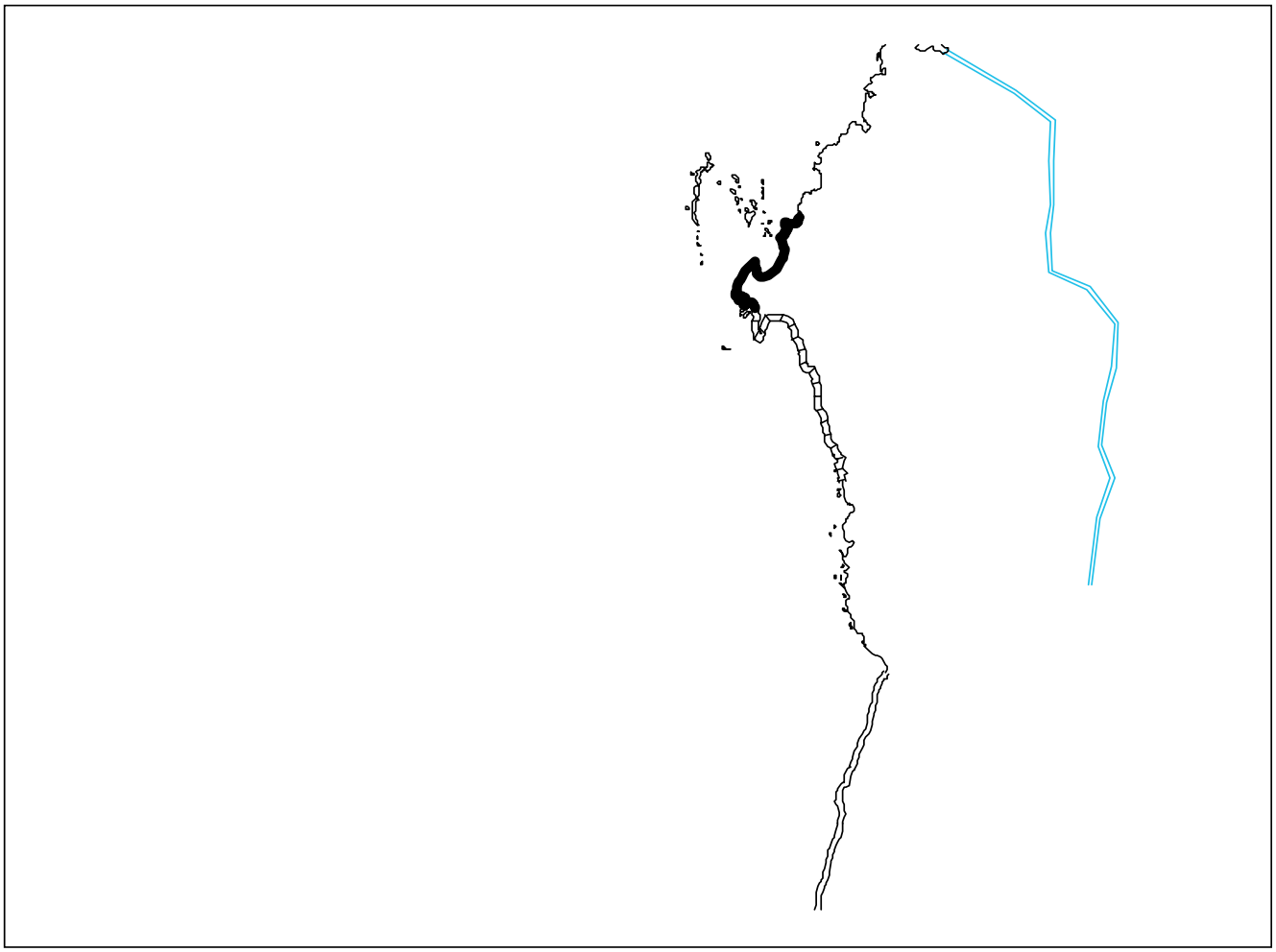
Lakeside



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-7. Lakeside Shoreline Types

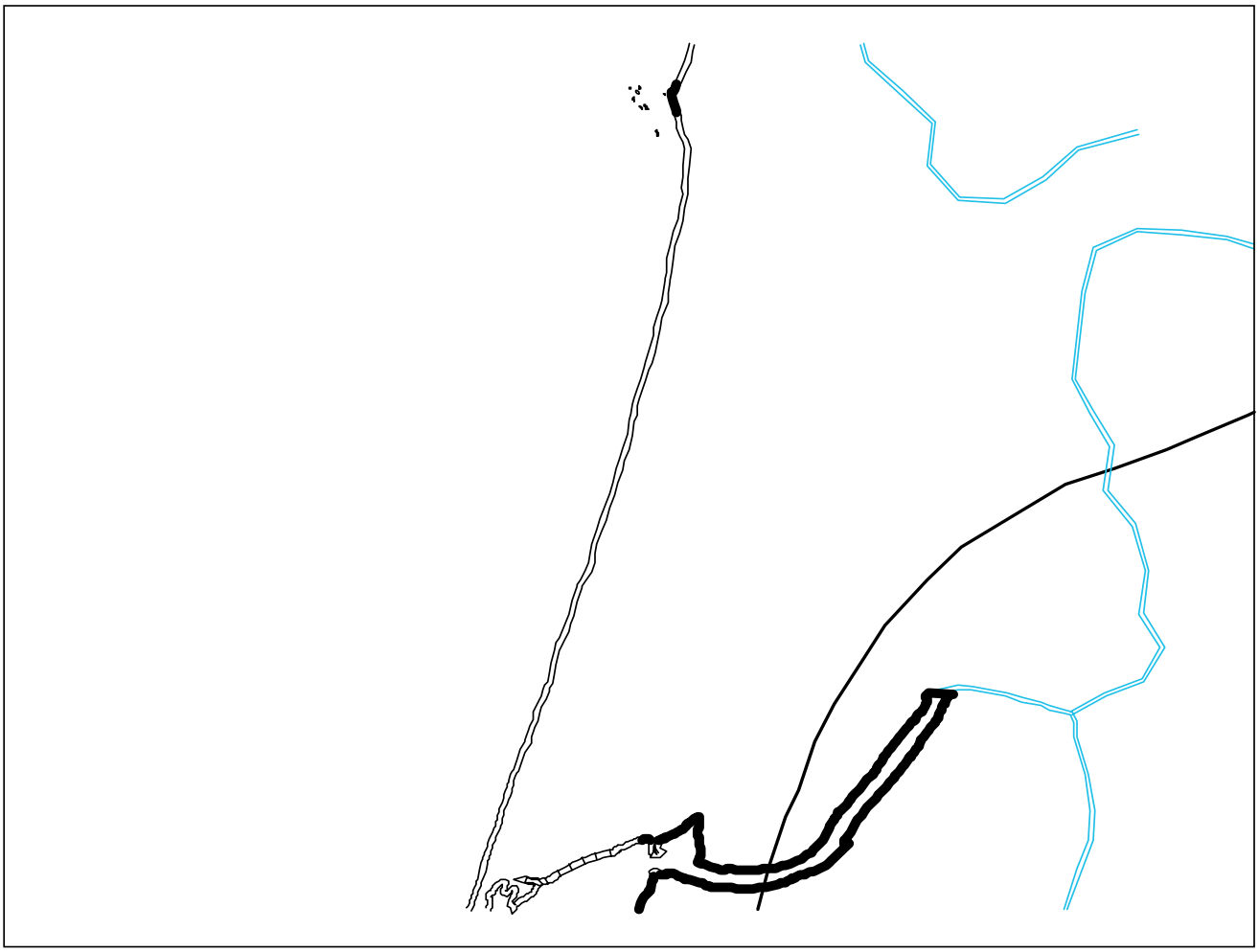
Cape Arago



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-8. Cape Arago Shoreline Types

Coquille River North



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-9. Coquille River North Shoreline Type

Bandon

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-10. Bandon Shoreline Types

Bandon State Park

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-11. Bandon State Park Shoreline Types

Floras Lake

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-12. Floras Lake Shoreline Types

Cape Blanco

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

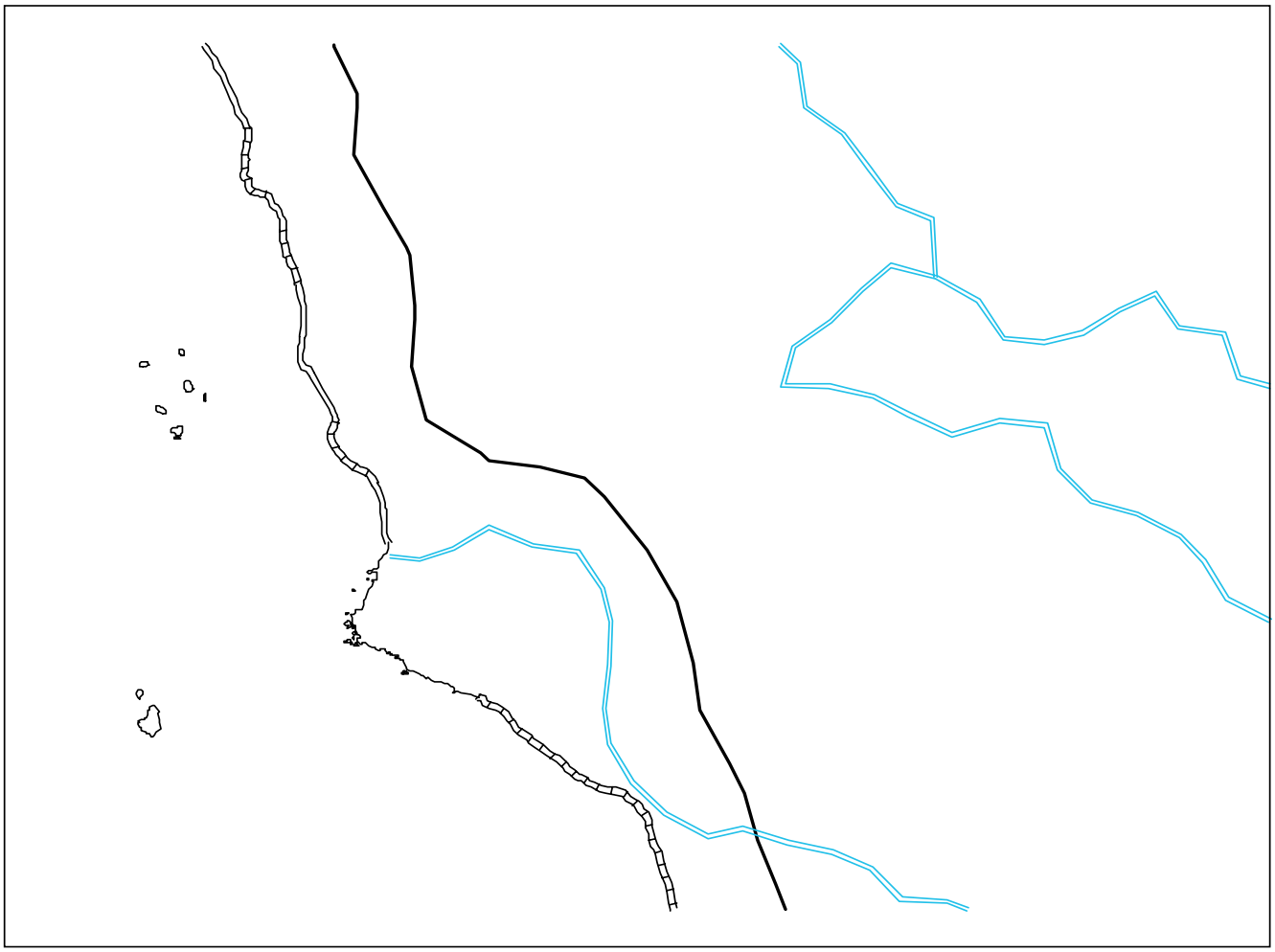
Figure 5-13. Cape Blanco Shoreline Types

Port Orford

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-14. Port Orford Shoreline Types

Humbug Mountain



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-15. Humbug Mountain Shoreline Types

Sisters Rocks

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

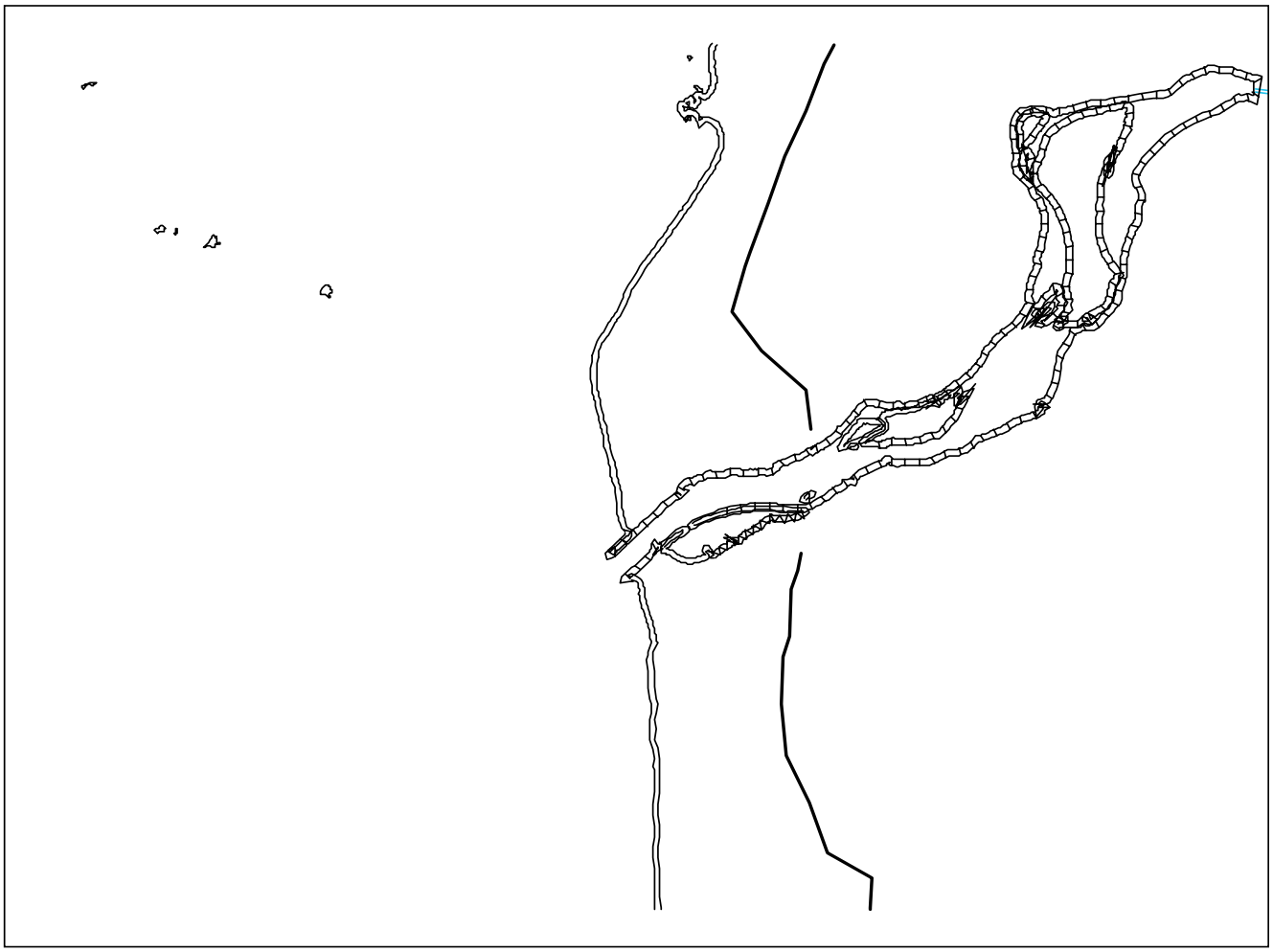
Figure 5-16. Sisters Rocks Shoreline Types

Hubbard Mound

Shoreline Type
Open water, banks, or cliffs
Sand or gravel beaches
Riprap, sandy flats, or organic debris
Vegetated banks or tidal mud flats/aquatic beds
Marsh, swamp, or rocky intertidal
Rivers
Roads

Figure 5-17. Hubbard Mound Shoreline Types

Rogue River



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-18. Rogue River Shoreline Types

Hunter's Cove

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-19. Hunter's Cove Shoreline Types

Crook Point

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

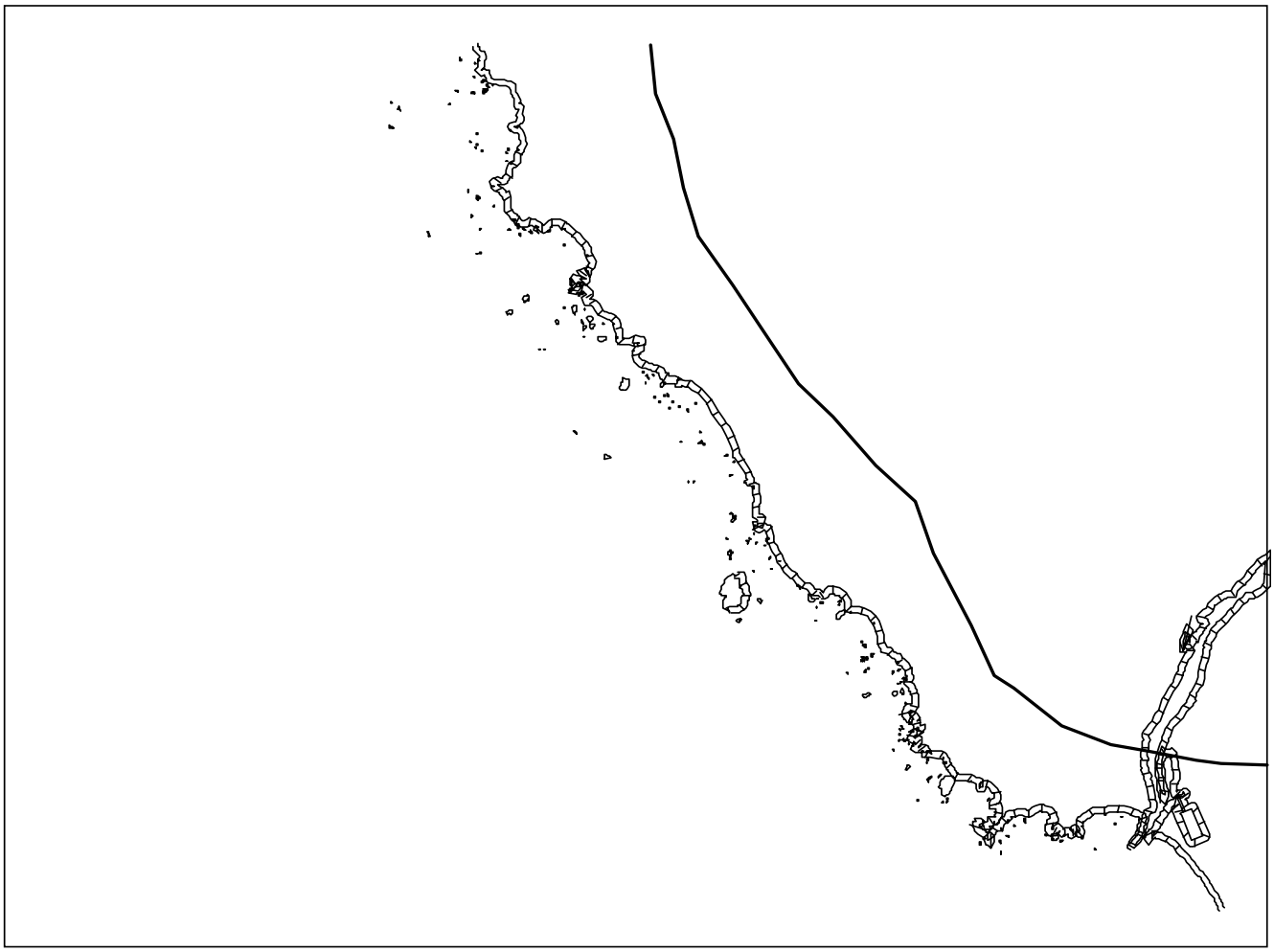
Figure 5-20. Crook Point Shoreline Types

Whalehead

Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-21. Whalehead Shoreline Types

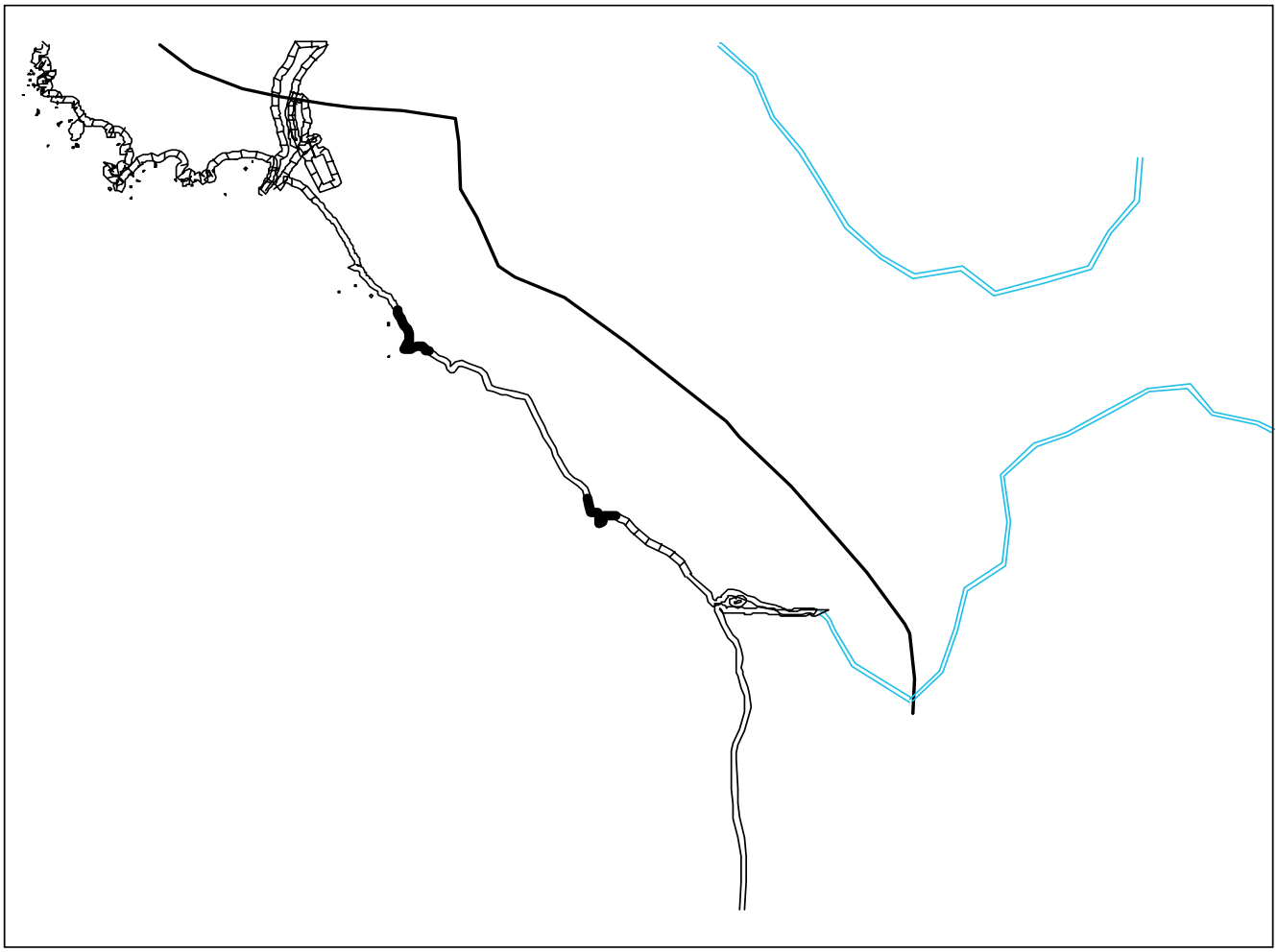
Brookings



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-22. Brookings Shoreline Types

Chetco Cove



Shoreline Type
- Open water, banks, or cliffs
- Sand or gravel beaches
- Riprap, sandy flats, or organic debris
- Vegetated banks or tidal mud flats/aquatic beds
- Marsh, swamp, or rocky intertidal
- Rivers
- Roads

Figure 5-23. Chetco Cove Shoreline Types

6. Wildlife Resource/Flight Restriction Information

Text to be provided by Oregon Department of Fish and Wildlife.

6.1 Chapter Overview

6.2 Fisheries

6.3 Wildlife

6.4 Marine Mammals

Disturbance to marine mammals during oil spill response actions should be avoided at all times. Harassment of mammals by aircraft, boat and land activities causes animals to become agitated and engage in abnormal "avoidance" behaviors that are likely to increase the risk of exposure to oil contaminated areas. Of particular importance is to avoid disturbance of pinnipeds (seals and sea lions) on land haul-out areas. The more time these animals are allowed to rest on land, out of the water, the less chance for oil contamination.

Over-flights of all shoreline and nearshore island areas should be avoided as the majority of these areas are used as on-land resting areas by seals and sea lions.

6.5 Shorebirds, Waterfowl, and Raptors

6.6 Archeological Sites

Geographic Site Locations

General Resources:

Seasonal Sensitivity:

Recommendations:

6.7 Wildlife Resource/Flight Restriction Table

The Wildlife Resource/Flight Restriction Table details the location, protected resources, and applicable season for each flight restriction zone.

Table 6-1. Wildlife Resource/Flight Restriction Table

A list of wildlife resources and any corresponding flight restriction zones is found below. Flight restriction zones are designed to protect shorebirds and marine mammals from aerial and terrestrial disturbances common during a spill response.

Code	Location	Seabird Colony	Seabird Conc.	Waterfowl Conc.	Mammal Haulout	Sensitive Nesting Species	Shorebird Conc.	Seasonality of Resource												Flight Restriction
								Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
W-1		X																		
W-2		X																		
W-3				Canada Goose																
W-4						Heron														
W-5				Pelican																
W-6				Plover																
W-7					Pinniped															
W-8					Steller Sea Lions															
W-9						Raptors														
W-10							Hot Spot													

Months that resource is present in this location

All zones include a 1200 foot flight restriction and a 1000-1500 foot ground access restriction. Contact the Oregon Department of Fish and Wildlife before entering restriction zones.

6.8 Wildlife Maps

Wildlife Resource zones are designed to protect shorebirds and marine mammals from aerial disturbances common during a spill response.
The following maps display wildlife resource zones.

- Seabirds
- Waterfowl
- Mammals
- Nests
- Shorebird Hotspot

6.9 Aquaculture

Aquaculture is an important economic resource which can be severely impacted by an oil spill. Because of the extreme sensitivity of these resources, owners and operators of these facilities should be notified if a spill threatens their resources so that they can take appropriate protective action. The following table lists aquaculture facilities within the area of the South Oregon Coast GRP.

Facility	Address	Point of Contact	Phone Number	Type
Bandon Fish Hatchery	Rt 1, Box 195 Bandon, OR 97411	Jim Robinson		
Elk River Fish Hatchery	95163 Elk River Rd Port Orford, OR 97465	Jerry D. Russum	(541) 332-7025	Publicly owned (inland)
Umpqua Aquaculture, Inc.	723 Ork Rock Rd P.O. Box 1287 Winchester Bay, OR 97467	Cindy Sardina	(541) 271-5684	Privately owned oyster beds
Winchester Bay Oysters	P.O. Box 1488 Winchester Bay, Or 97467	Bill or Sheila Julian	(541) 271-3833 (541) 271-3607	Privately owned oyster beds

Contact the Oregon Department of Agriculture Duty Officer through the Oregon Emergency Response System, (800) 452-0311, for current aquaculture facility information.

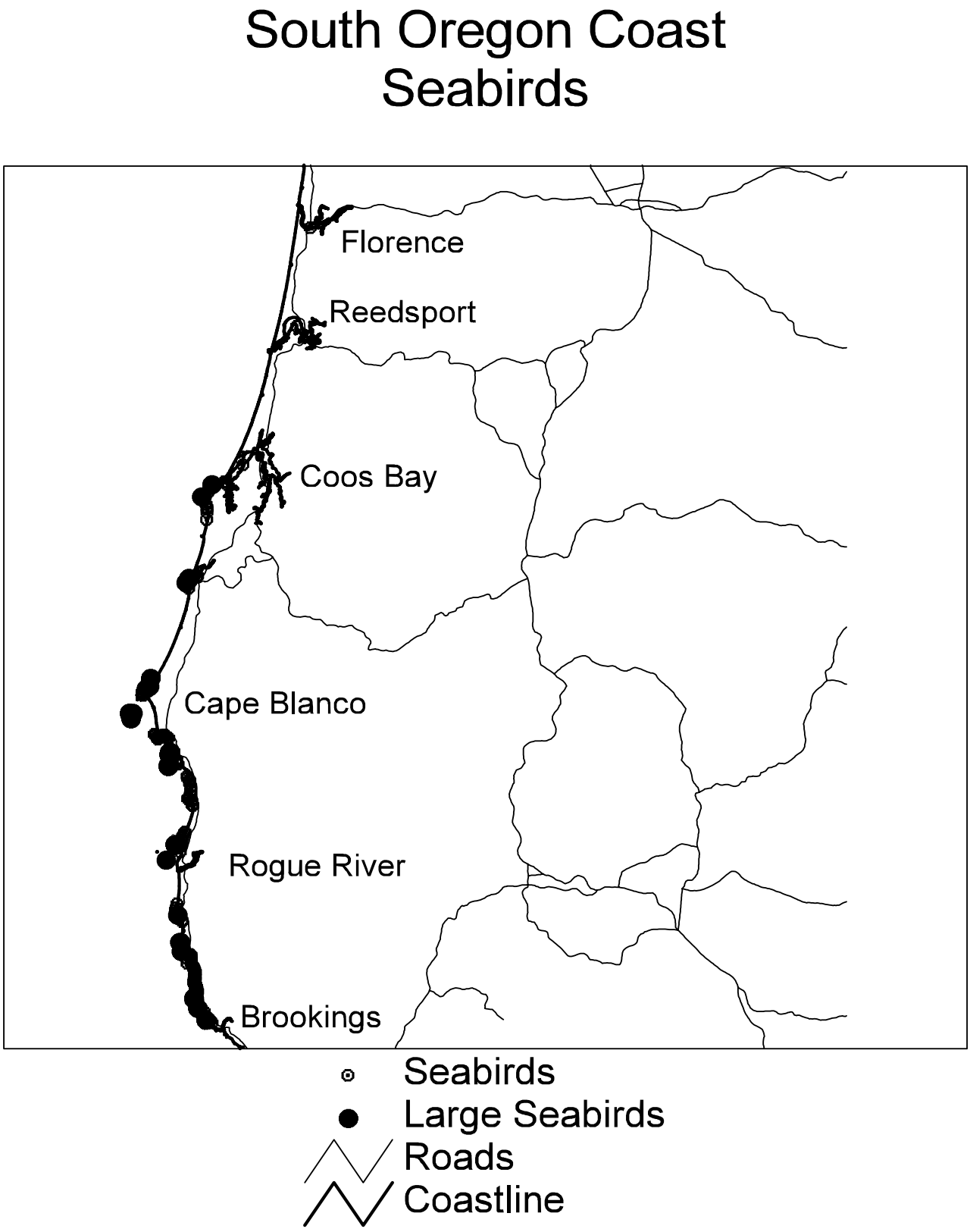


Figure 6-1. Seabirds

South Oregon Coast Waterfowl

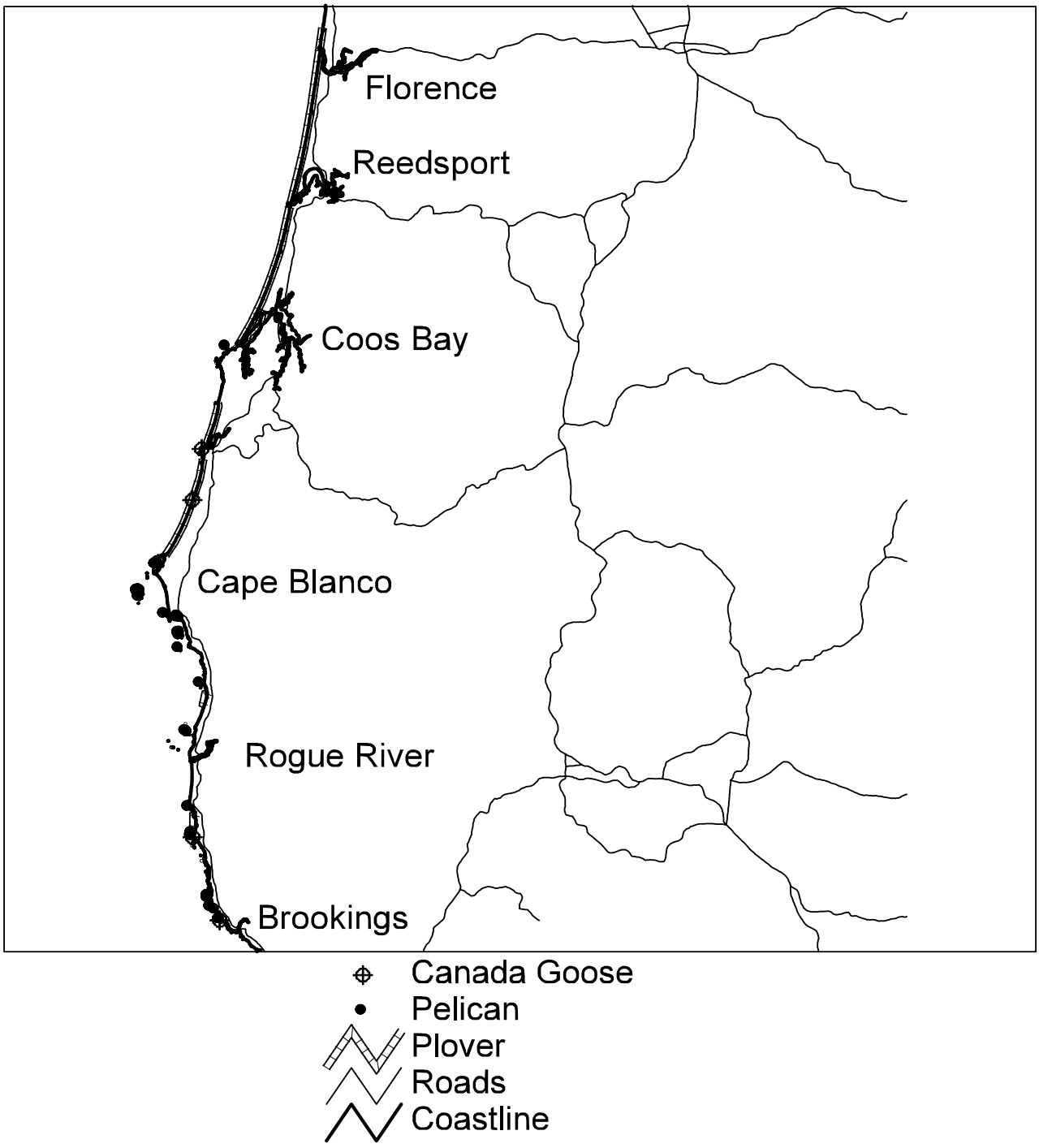


Figure 6-2. Waterfowl

South Oregon Coast Mammals

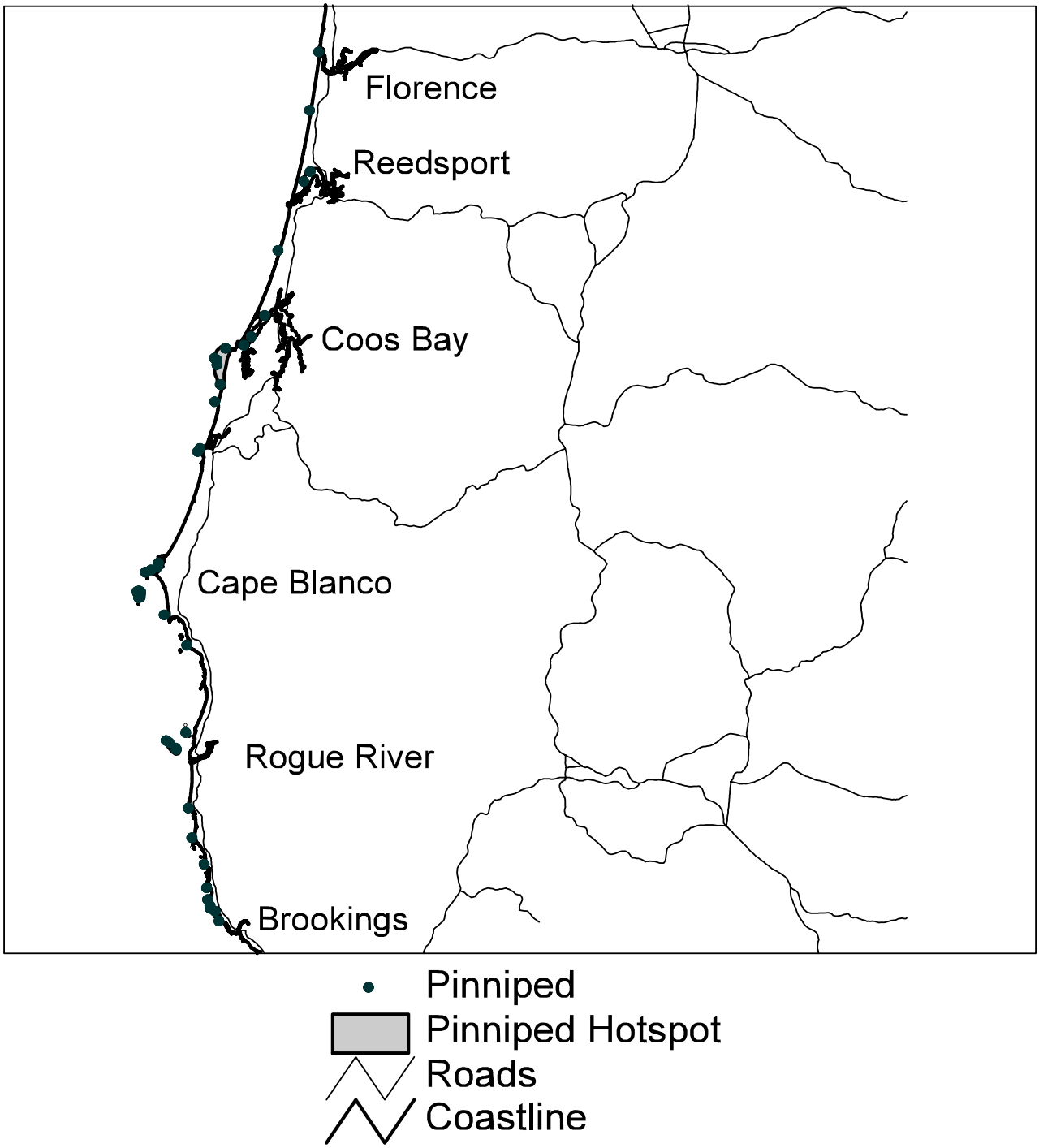


Figure 6-3. Mammals

South Oregon Coast Nests

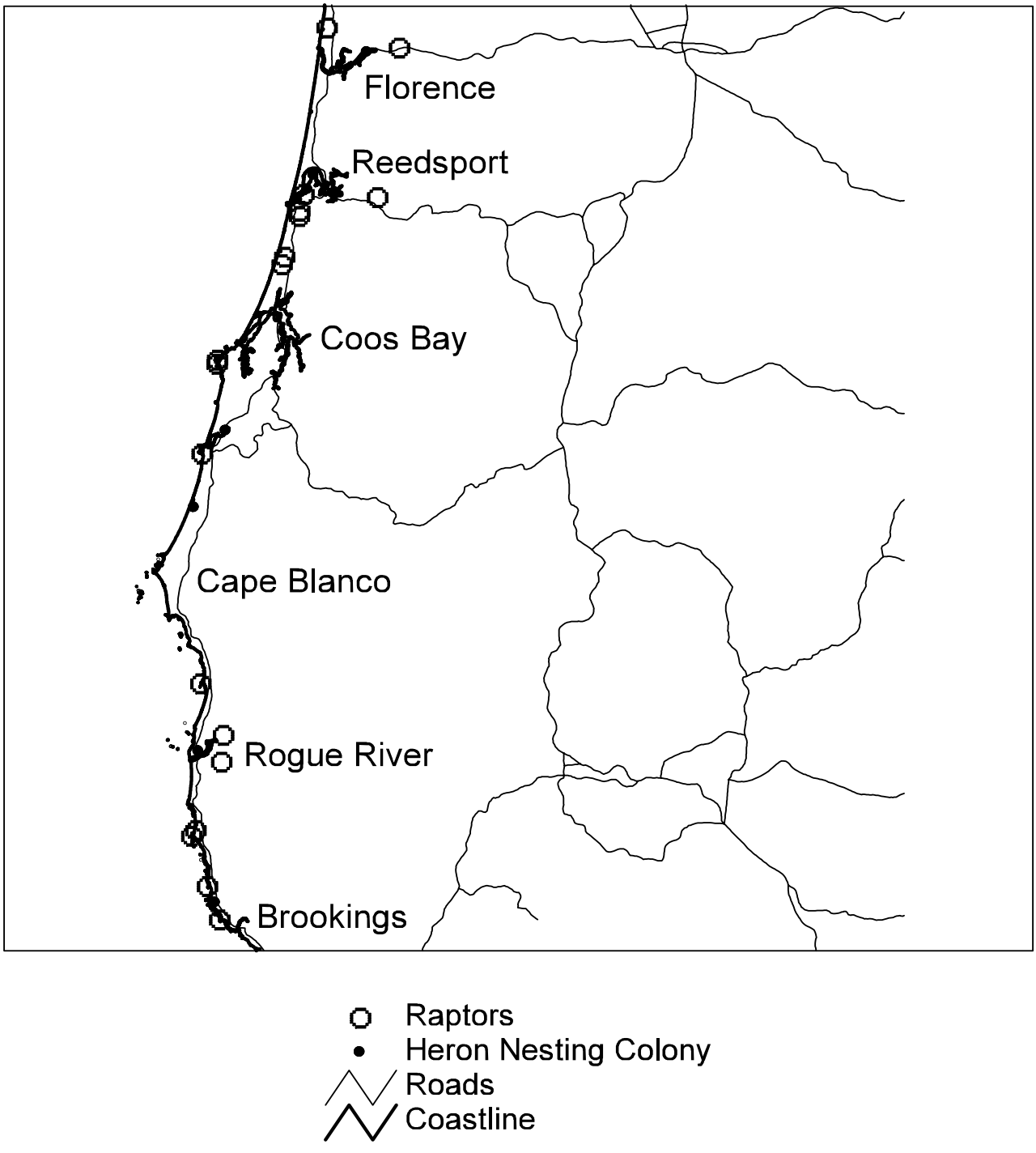


Figure 6-4. Nests

South Oregon Coast
Umpqua River
Shorebird Hot Spot

Figure 6-5. Shorebirds

7. Logistical Information

The following list was compiled at the South Oregon Coast Geographic Response Plan Workshop held in Reedsport, Oregon on August 19-20, 1993. Areas of information include: command posts; communications; equipment cache locations; inventory of local support equipment; air support; access points; and other pertinent logistical support.

Table 7-1, Logistical Information

Subject	Name	Characteristics	Contact	Phone #
Command Posts				
Florence	City Hall		City Manager	
Florence	Convention Center		Chamber of Commerce	
Florence	Marine Store & Shop		Port of Siuslaw	
Bandon	Port Offices		Alex Link	(541) 347-3206
Bandon	City Hall		Ben McMakin	(541) 347-2427
Bandon	Community Center		Chamber of Commerce	
Bandon	"Bandon Barn"		Ben McMakin	(541) 347-2427
Port Orford	City Hall		Dean Madison	(541) 332-3681
Port Orford	Vacant ex-USCG Station			
Port Orford	Senior Center			(541) 332-3681
Winchester Bay	Senior Center			
Winchester Bay	Community Building		Winchester Bay RFPD	(541) 271-3808
Douglas County Emergency Center			Wayne Stinson	1-800-477-0991
Gardiner	International Paper		Kent Blumberg	(541) 271-2184
Brookings	City Hall		Dennis Cliff	(541) 469-2163
Brookings	Water District Annex			(541) 469-3011
Gold Beach	City Hall		Geri Alleman	(541) 247-7029
Gold Beach	Curry County Emergency Center			(541) 247-7011
Coos Bay	Sause Brothers Training Facility	Meeting Rooms, training equipment	Dick Lauer	(541) 269-5841
Coos Bay	National Guard Armory			(541) 888-5132

Subject	Name	Characteristics	Contact	Phone #
Coos Bay	Air National Guard Facility			(541) 888-7514
Coos Bay	Coos Forest Protective Association		Gene Brach	(541) 267-3161
Coos Bay	Port Offices	Meeting Room, some Communications	Allan Rumbaugh	(541) 267-7678
Coos Bay	Red Lion Inn	Meeting Rooms, Lodging		(541) 267-4141
Communications				
Bureau of Land Management		14 four wheel drive vehicles w/ communications to BLM dispatch Center, North Bend	Tim Votaw	(541) 756-0100
Coos Bay Fire Dept	Empire Fire Station	HazMat mobile command post w/ radio, fax, phone		(541) 888-2116
Coos County	Sheriff's Dept	Vehicles w/ comms to center		(541) 396-3121
State Hwy Patrol		Mobile Comms to Center		911 or thru OERS
Coos Bay Coop		Mobile Comms Van	Dick Lauer	(541) 269-5841
MSRC		Mobile Comms Van		(206) 252-1300
OERS	Oregon Emergency Management	Mobile Comms Van		(800) 452-0311
Equipment Cache Locations				
Coos Bay	Pacific Coast Environmental	1000' fence boom		(541) 756-2956
Coos Bay	Environmental Services	500' hard boom		(541) 268-5050
Coos Bay	Bayshore Dock-Sause Brothers	1200' hard boom	Dick Lauer	(541) 269-5841
Coos Bay	Unocal	1200' hard boom		(541) 269-9600
Coos Bay	Sause Brothers Ocean Towing Corporation	3600' hard boom	Dick Lauer	(541) 269-5841
Coos Bay	Newport Petroleum	2400' hard boom	Jim Hurd	(541) 756-0481

Subject	Name	Characteristics	Contact	Phone #
Charleston	U. S. Coast Guard Station			
Inventory of Local Support Equipment				
Helicopter Support/Air Support				
North Bend	Menasha Timber	1 helo		(541) 756-1192
Coos Bay	Bay City Ambulance	2 fixed wing		(541) 347-3973
Coos Bay	Sause Brothers	1 fixed wing	Dick Lauer	(541) 269-5841
North Bend	Coos Aviation	Aircraft Charters		(541) 756-5181
Bandon	Frank's Flight Service	Aircraft Rental	Bandon Airport	(541) 347-2022
North Bend	Pegasus Air	Aircraft Rental	North Bend Airport	(541) 756-5727
Lakeside	Aerial Surveillance Company	Surveying/Investigations		(541) 759-3557
Access Points to Harbor/Boat Ramps				
Florence	Siuslaw River	Bender Landing	Asphalt, parking, restrooms	
Florence	Siuslaw River	Cushman RV and Marina	Gravel, parking, restrooms	
Florence	Siuslaw River	Florence Public Ramp	Asphalt, parking, restrooms	
Florence	Siuslaw River	Siuslaw Marina	Gravel, parking, restrooms	
Gardiner	Umpqua River	Gardiner	Asphalt, parking	
Reedsport	Umpqua River	Rainbow Plaza	Concrete, parking, restrooms	
Reedsport	Umpqua River	Salmon Harbor--E Salmon Harbor--W	Concrete, parking, restrooms Concrete, parking, restrooms	
Charleston	Coos Bay	Charleston Boat Basin	Concrete, parking, restrooms	
Coos Bay	Coos Bay	Conde McCulloch	Gravel	
Coos Bay	Coos Bay	Empire Boat Ramp	Concrete, parking, restrooms	
Coos Bay	Coos Bay	Pony Point	Concrete, parking, restrooms	
Coos Bay	Coos River	Myrtle Tree Boat Ramp	Concrete, parking, restrooms	
Bandon	Coquille River	Arago	Concrete, parking, restrooms	
Bandon	Coquille River	Bryant Ramp	Asphalt, parking	
Bandon	Coquille River	Bullards Beach State Park	Asphalt, parking, restrooms	

Subject	Name	Characteristics	Contact	Phone #
Bandon	Coquille River	Coquille	Concrete, parking, restrooms	
Bandon	Coquille River	Port of Bandon	Concrete, parking, restrooms	
Bandon	Coquille River	Riverton Boat Ramp	Concrete, parking, restrooms	
Bandon	Coquille River	Rocky Point	Concrete, parking, restrooms	
Bandon	Coquille River	Sturdivant Boat Ramp	Concrete, parking, restrooms	
Port Orford	Pacific Ocean	Port of Port Orford	Hoist, parking, restrooms	
Gold Beach	Rogue River	Ferry Ramp	Concrete, parking	
Gold Beach	Rogue River	Huntley Park	Gravel, parking, restrooms	
Gold Beach	Rogue Bay	Jots Resort	Asphalt, restrooms	
Gold Beach	Rogue Bay	Port of Gold Beach	Concrete, parking, restrooms	
Brookings	Chetco River	Loeb State Park	Gravel, parking, restrooms	
Brookings	Chetco River	Miller Bar	Gravel, parking	
Brookings	Chetco River	Social Security Bar	Concrete, parking	
Brookings	Chetco River	South Fork	Gravel, parking	
Property Access Information and Contacts				
Staging Areas				
NOTE: For most staging areas, contact local county emergency manager or sheriff's department.				
Florence	Florence Airport			
Florence	Lane County Transfer		Mike Turnen	(541) 341-6905
Florence	Port Dock		Bill Bradshaw	(541) 997-3426
Florence	Old Sternwheeler/Shipyard	(2-3 miles inland on Siuslaw River)		
Florence	Honeyman State Park		Andy LaTomme	(541) 269-9410
Bandon	Port Spaces-S. Coquille River		Alex Link	(541) 347-3206
Bandon	Bullard Beach South Jetty Parking Lot		Andy LaTomme	(541) 269-9410
Bandon	Airport			(541) 347-2022
Bandon	Cape Blanco Airport		Andy LaTomme	(541) 269-9410

Subject	Name	Characteristics	Contact	Phone #
Bandon Beach Parking	4 miles south of Bandon on US 101		Andy LaTomme or county sheriff	(541) 269-9410
Port Orford	Dock		Dean Madison	(541) 332-3681
Port Orford	City Hall		Dean Madison	(541) 332-3681
Port Orford	Garrison Lake Dock Parking Lot			
Port Orford	Cape Blanco State Park		Andy LaTomme	(541) 269-9410
Winchester Bay	Umpqua Navigation--255 First Street		Tim Lewis	(541) 271-2123 fax -2198
Winchester Bay	International Paper		Kent Blumberg	(541) 271-2184
Winchester Bay	Bolin Island (Willamette Industries)		Cory Unfried	
Winchester Bay	International Paper--Sawmill Dock		Harold Grenshaw	(541) 271-2184
Brookings	Port Spaces		Russ Crabtree	(541) 469-2218
Brookings	S. Coast Plywood			(541) 469-2136
Brookings	Harbor Shopping Center			(541) 469-4301
Gold Beach	Municipal Airport			(541) 247-6269
Gold Beach	Port Spaces		Howard	(541) 247-6269
Gold Beach	North Jetty Parking Area		Andy LaTomme	(541) 269-9410
Gold Beach	Humbug State Park		Andy LaTomme	(541) 269-9410
Gold Beach	Arizona Beach RV Park			(541) 332-6491
Gold Beach	Ophir School		Superintendant's Office	(541) 247-6132
Gold Beach	Pistol River School		Superintendant's Office	(541) 247-6132
Gold Beach	Gregg's Creek-ATV Access		Andy LaTomme	(541) 269-9410
Recreational Activities which could interfere				

Subject	Name	Characteristics	Contact	Phone #
Tribal Resources				
Key Local Elected Officials				
Bandon	City Manager		Matthew Winkel	(541) 347-2437
Brookings	City Manager		Dennis Cluff	(541) 469-2163
Coos Bay	Mayor		Joseph Benetti	(541) 269-8912
Coquille	City Manager		Joseph Wolf	(541) 396-2116
Gold Beach	City Manager		Bill Curtis	(541) 247-7029
Lakeside	City Recorder		Janelle Evans	(541) 759-3011
North Bend	Mayor		John Brigg	(541) 756-8534
Port Orford	Manager			(541) 332-3681
Reedsport	Mayor		Steve Wilson	(541) 271-3603
Fire Department				
Bandon	City Fire Dept		Business phone	(541) 347-2241
Brookings	City Fire Dept		Business phone	(541) 469-2163
Coos Bay	City Fire Dept		Business phone	(541) 269-1191
Coquille	City Fire Dept		Business phone	(541) 396-2232
Gold Beach	City Fire Dept		Business phone	(541) 247-7029
Lakeside	City Fire Dept		Business phone	(541) 759-3931
North Bend	City Fire Dept		Business phone	(541) 756-3135
Port Orford	City Fire Dept		Business phone	(541) 332-6965
Reedsport	City Fire Dept		Business phone	(541) 271-2423
Local Personnel Support				

Subject	Name	Characteristics	Contact	Phone #
Oregon State Parks	All beach areas south of Florence			(541) 269 9412
Volunteers				
Wildlife Rehab Facilities				
Coordinator	ODFW--Portland		ODFW Wildlife Division	(503) 872-5260
Marinas/Port Docks				
Port of Siuslaw (Florence)	PO Box 1220 Florence, OR 97439			(541) 997-3426
Port of Umpqua (Reedsport)	PO Box 388, Reedsport, OR 97467			(541) 271-2232
Port of Coos Bay	326 Front Street, Coos Bay, OR 97420			(541) 267-7678
Port of Bandon	PO Box 206, Bandon, OR 97411			(541) 347-3206
Port of Port Orford	PO Box 145, Port Orford, OR 97465			(541) 332-7121
Port of Gold Beach	PO Box 1126, Gold Beach, OR 97444			(541) 247-6269
Port of Brookings	PO Box 848, Brookings, OR 97415			(541) 469-0672
Housing/Feeding/Response Community Support				
Florence	Lane County Emergency Manager	(located in Eugene)		(541) 687-4141
Reedsport	Douglas County Emergency Manager	(located in Roseburg)		(541) 444-4471
Coos Bay	Coos County Emergency Manager	(located in Coquille)		(541) 396-3121
Gold Beach/Brookings	Curry County Emergency Manager	(located in Gold Beach)		(541) 247-7011
Interim Storage/Permits				
Fishing Fleets & Affiliated Organizations*				
Coos Bay	Independent Troll Fisherman of Oregon		Cooperative	888-5382

Subject	Name	Characteristics	Contact	Phone #
For information on VOSS trained fishing vessels, contact USCG D13 DRAT(Scot Knutson), or MSRC (Joe Gross)				D13 (206) 553-1711 MSRC (206) 774-6772
Boat Cleaning Capability*				
Charleston	Charleston Marina & Launch Ramp			888-2548
Winchester Bay	Salmon Harbor Moorages			271-3407
Coos Bay	Newport Petroluem			756-0481
Safe Havens				
Coos Bay	Port of Coos Bay (Only deepwater port in this section of Coast)		Allan Rumbaugh--Port Manager; Dick Lauer--Sause Brothers Ocean Towing	267-7678

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.	• Bulldozer/Motor grader -1 • Personnel - equipment operator & 1 worker • Misc. - plastic or geotextile sheeting	• 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.	• Geotextile - 3 m wide rolls • Personnel - 5 • Misc. - stakes or tie-down cord	• 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 • Wire mesh - 70 m x 2 m • Stakes - 20 • Sorbents - 30 m^2 • Personnel - 2 • Misc. - fasteners, support lines, additional stakes, etc.	• 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.	• Loader - 1 • Personnel - equipment operator & 1 worker or several workers w/shovels	• 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: • Boom - 280 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, drogues, connectors, etc.	• 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 • Boats - 1 • Personnel - boat crew & 3 boom tenders • Misc.- 6 anchors, anchor line, buoys, etc.	• Currents > 0.5 m/s • Breaking waves > 50 cm • Water depth > 20 m

Protection Techniques	Description	Primary Logistical Requirements	Limitations
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 • Boom - 60 m • Boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit	• 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 • Boom - 60 m • boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit	• 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 • Boom - 200 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, bridles, connectors, etc. Portable • Hoses - 30 m discharge • Oil storage - 2000 liters	• High winds • Swells > 2 m • Breaking waves > 50 cm • Currents > 1.0 m/s

Source is R. Miller of Clean Sound Cooperative.

Appendix B: Geographic Response Plan Contributors

Local Representatives

Industry and Response Contractors

Federal Representatives

NOAA
Dr. Sharon Christopherson
Mr. Gary May

USFWS
Ms. Colleen Henson

United States Coast Guard
LT Chris Curatillo
LT(JG) Amy Beach

State Representatives

Oregon Department of Environmental Quality
Mrs. Elizabeth Dimmick
Mr. Paul Slyman
Mr. Jack Wylie

Oregon Department of Fish and Wildlife
Mr. Dave Fox
Mr. Dale Nelson
Mr. Greg Robart
Mr. John Toman
Mr. Dan Van Dyke

Oregon State Service Center for Geographic Information Systems
Mr. Richard Crucchiola
Mrs. Patti Haggerty
Mr. Lee Row
Mr. Mark Kinslow

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Appendix C: Geographic Response Plan Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors with this document please notify one of the following agencies:

- USCG Marine Safety Office Puget Sound, Planning Department
- USCG Marine Safety Office Portland, Planning Department
- Washington Department of Ecology, Central Programs Branch
- Oregon Department of Environmental Quality, Land Quality Division
- Idaho Emergency Response Commission
- Environmental Protection Agency Region 10

You can use the tear out suggestion form or contact an agency using one of the following:

Phone Numbers:

USCG MSO Puget Sound	(206) 217-6213
USCG MSO Portland	(503) 247-4015
Washington DOE	(206) 407-6971
Oregon DEQ	(503) 229-5716
Idaho ERC	(208) 334-3263
EPA	(206) 553-6901

Internet Address:

USCG	RPMatthews@pacnorwest.uscg.mil
DEQ	Wylie.Jack@deq.state.or.us

Address:

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

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

Washington Department of Ecology
Central Programs Branch
Policy and Planning Section
P.O. Box 47600
Olympia, WA 98504

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

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

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

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Geographic Response Plan

Comments/Corrections/Suggestions

Directions: (Make a copy of this before you fill in so you have extra forms.)

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. Fold in thirds so the address label is visible and tape closed (don't staple).

Name:_____ Title:_____ Agency: _____

Address: _____

City: _____ State/Province:_____ Zip/Postal Code: _____

Phone: (____) _____

Page Number: _____

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

Comments: _____

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_____

U.S. Department
of Transportation
U.S. Coast Guard

Marine Safety Office Portland
Planning Department
6767 N. Basin Ave.
Portland, OR 97217-3992

Northwest Area Committees
c/o Marine Safety Office Portland
Planning Department
6767 N. Basin Ave.
Portland, OR 97217-3992