WESTERN ALASKA
SUBAREA CONTINGENCY PLAN

GEOGRAPHIC RESPONSE STRATEGIES
SECTION

Western Alaska Bay Subarea – Island Zone

INTRODUCTION

Purpose and Scope

These Geographic Response Strategies (GRS) are designed to be a supplement to the Western Alaska Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Western Alaska Subarea Contingency Plan (SCP). GRS provide unified (public, responders, and agencies) priorities and response strategies for the protection of selected sensitive areas to aid first responders to an oil spill. The GRS list the sensitive resources of an area and the response strategies, equipment, personnel and logistical information necessary to protect the sensitive areas. Because the U.S. Coast Guard Marine Safety Office, Environmental Protection Agency and the Alaska Department of Environmental Conservation have already approved them, the GRS serve as pre-approved strategies of the Unified Command during the emergency phase of an oil spill response.

Implementation of these Geographic Response Strategies is the third phase of an oil spill response. The first and primary phase of the response is to contain and remove the oil at the scene of the spill or while it is still on the open water, thereby reducing or eliminating impact on shorelines or sensitive habitats. If some of the spilled oil escapes this tactic, the second phase, which is no less important, is to intercept, contain and remove the oil in the nearshore area. The intent of phase two is the same as phase one: remove the spilled oil before it impacts sensitive environments. If phases one and two are not fully successful, phase three is to protect sensitive areas in the path of the oil. The purpose of phase three is to protect the selected sensitive areas from the impacts of a spill or to minimize that impact to the maximum extent practical.

The sites selected for development of Geographic Response Strategies are not meant to be exclusive; other sensitive sites may require protection during any given oil spill. The fact that a GRS may not have been developed for a certain sensitive site does not mean that site should not be protected if it is threatened by an oil spill.

These strategies are intended to be flexible to allow spill responders to modify them, as necessary, to fit the prevailing conditions at the time of a spill. Seasonal constraints, such as ice or weather, may preclude implementation of some of the strategies in the winter months. It is not intended that all the sites be automatically protected at the beginning of a spill, only those that are in the projected path of the spill. The strategies developed for the selected sites were completed with a focus on minimizing environmental damage, utilizing as small a footprint as needed to support the response operations and selecting sites for equipment deployment that will not cause more damage than the spilled oil. To test these GRS, each site may be visited and equipment deployed according to the strategy, to ensure that the strategy is the most effective in protecting the resources at risk at the site. Revisions will be made to the strategies, and this document, if changes are indicated by site visits, drills or actual use during spills.

The Western Alaska GRS Workgroup has divided the Subarea into 2 Geographic Response Zones (figure G-1-1) and directed that 32 sites be developed throughout the Subarea. In the future, strategies may be developed for additional sensitive areas.

How to Use These Geographic Response Strategies

The information provided here supplements information provided in the Western Alaska SCP and the Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substances Discharge/Releases (commonly referred to as the Unified Plan). Information provided in either of those plans is not duplicated herein. This document is intended for use by response professionals already familiar with spill response techniques.

The GRS contain basic protection and recovery strategies with directions for implementation in the field. Each description contains the strategy objective, deployment depictions, resource sets required to implement the strategy, and deployment considerations and limitations. These general strategies may be adapted to produce a protection scheme for any site in Western Alaska. The strategies are taken from the State of Alaska's oil spill response tactics guide, *Spill Tactics for Alaska Responders* (STAR Manual). Responders should use refer to the STAR manual for more detailed information about the GRS tactics. The STAR manual, published by ADEC, is available online at: http://www.dec.state.ak.us/spar/perp/star/docs.htm.

Part 2 contains site-specific response strategies. An index at the beginning of each sub-section shows the location of the selected sites. Each GRS consists of two parts: 1) a graphic showing a map, deployment diagram, picture and implementation notes; and 2) a matrix giving the location description, response strategy, response resources, staging area, site access, natural resources being protected and special considerations.

Figure G-1-1. Western Alaska Subarea Geographic Response Zones

Who to Contact for Input

Comments and recommendations on these GRS are welcomed. Please send your comments to either of the following agencies:

Alaska Department of Environmental Conservation Prevention and Emergency Response Program 555 Cordova Street Anchorage, AK 99501

United States Coast Guard Captain of the Port, Western Alaska 510 L Street Anchorage, AK 99501

How the Document Was Developed

These GRS were developed through a cooperative, workgroup process involving federal, state, and local spill response experts working with representatives from the oil production and transportation industry, citizens' groups, and natural resource agencies. Workgroups were (or will be) formed for each response zone in the subarea.

Workgroup participants identified all sensitive areas with potential to be classified as “Areas of Major Concern” under the criteria established in the Western Alaska Subarea Plan. These potential sites were evaluated by the additional criteria of 1) risk of being impacted from a water borne spill; and 2) feasibility of successfully protecting the site with existing technology. Using this process, the workgroup selected a preliminary list of sites that was released for public input. Feedback on site selection was solicited from tribal representatives, user groups, environmental organizations and the general public. Based on the feedback received, the workgroup made the final site selections for the zone. Additional sites may be selected in the future.

A Western Alaska Tactics committee, composed of spill response professionals and personnel from natural resource agencies, was formed to develop draft strategies for each site selected. The draft strategies were reviewed and approved by the entire workgroup and the final draft was forwarded to the Western Alaska Subarea Committee with the recommendation that it be adopted as part of the Western Alaska SCP.

The Western Alaska Workgroup consisted of representatives from the following organizations:

Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Chadux Corporation
Alaska Marine Pilots
Association of Village Council Presidents
City of Pilot Point
Curyung Tribal Council
City of Bethel
City of Hooper Bay
City of Goodnews Bay
Kuskowkwim River Watershed Council
Lake and Peninsula Borough
Minerals Management Service
Native Village of Hooper Bay
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
National Park Service
United States Coast Guard
United States Department of the Interior
United States Fish and Wildlife Service

The Workgroup developed Table G-1-1 to aid in the selection of sites from within the Western Alaska Subarea. The table consists of identified sites in each row with information about resources at each site that could qualify the site as an area of major concern detailed in the columns.

Western Alaska Site Selection Matrix

Index Number	GRS Number	Priority	Location	Latitude	Longitude	Marine Mammals	Fish	Birds	Subsistence	Cultural Resources	Comm. Fish	Coastal Habitat	Land Mgt. Designation
NORTHERN ZONE													
N-02	N-01	H	Pastolik River/Apoon Mouth	63° 02.36'N	163° 21.33'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc	S			ETF,SRS,M,PS	N
N-06	N-02	H	Bugomowik Pass & Emmonak Slough	62° 57.09'N	164° 47.37'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc	S		SN	ETF,SRS,M,PS	N
N-07	N-03	H	Kwiguk Pass & Kawkhawik Slough	62° 47.35'N	164° 53.51'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc	S		SN	ETF,SRS,M,PS	N
N-10	N-04	H	Kwemeluk Pass	62° 32.60'N	165° 02.36'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc	S		SN	ETF,SRS,M,PS	N
N-13	N-05	H	Kun River/Scammon Bay	61° 50.90'N	165° 37.97'W		CH,SF,W,H	SHBc,SBc,WFc	S		H	ETF,SRS,M,PS	N
N-15	N-06	H	Kokechik Bay	61° 43.83'N	166° 08.89'W	SS	P,SF,W,H	SHBc,SBc,WFc	S		H	ETF,GB,M	YDNWR,N
N-16	N-07	H	Hooper Bay	61° 32.17'N	165° 50.92'W	SS	CH,K,P,SF,W	SBn,SHBc.WFc	S			ETF,M,PS	N
N-17	N-08	H	Angyoyaravak Bay	61° 17.13'N	165° 44.47'W		CH,K,P,SF,W	SHBc,SBc,WFc	S			ETF,M,PS	YDNWR,N
N-18	N-09	H	Opagyarak/Aphrewn/Manokinak River	61° 06.93'N	165° 20.02'W		CH,K,P,SF,W	SHBc,SBc,WFc	S			ETF,STF,GB,M,PS	YDNWR
N-19	N-10	H	Anerkochik/Azun Rivers	61° 03.00'N	165° 10.10'W		CH,K,P,SF,W	SHBc,SBc,WFc	S			ETF,STF,GB,M,PS	YDNWR
N-20	N-11	H	Ninglick River	60° 52.41'N	165° 03.72'W		CO,P,W	SHBc,SBc,WFc	S			ETF,STF,GB,M,PS	YDNWR,N
N-21	N-12	H	Ikalugtulik River	60° 40.46'N	165° 06.46'W	SS	CO,AC,CP	SHBc,SBc,WFc	S			ETF,STF,GB,M,PS	N
N-22	N-13	H	Tanunak Bay	60° 35.06'N	165° 17.70'W		CH,CO,P,AC,CP	SHBc,SBc,WFc	S			EWP,ETF,M,GB,PS	N
N-23	N-14	H	Cape Vancouver	60° 32.14'N	165° 24.72'W	SS	CP	SBn,SHBc.WFc	S			EWP,ETF,GB	N
N-01			Pastoliak River	63° 02.37' N	163° 14.03'W		CH,P,AC	SHBc,SBc,WFc	S			ETF,SRS,M,PS	N
N-03			Okwega Pass Area	63° 06.53'N	163° 32.33'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	N
N-04			Okshokwewhik Pass Area	63° 12.85'N	163° 49.42'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	N
N-05			Kwikpak & Kawanak Pass	63° 03.11'N	164° 35.87'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	YDNWR,N
N-08			Alakanuk Pass & Casey's Channel	62° 42.35'N	164° 51.96'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	N
N-09			Kwikluak Pass	62° 36.17'N	164° 47.24'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	N
N-11			Black River	62° 21.57'N	165° 20.67'W		CH,K,SF,W	SHBc,SBc,WFc			SN	ETF,SRS,M,PS	YDNWR,N
N-12			Sand Islands	62° 00.00'N	165° 58.23'W	SS		SBn,SHBc.WFc			H	GB	YDNWR
N-14			Kongiahluk Bay	61° 49.46'N	165° 46.71'W	SS	H	SHBc,SBc,WFc			H	ETF,GB	N
SOUTHERN ZONE													
S-01	S-01	H	Kangirlvar Bay	60° 28.55'N	165° 08.23'W	SS	CH,CO,K,P,AC,W,CP,H	SHBc,SBc,WFc	S			ETF,PS,GB,EWP	N
S-02	S-02	H	Kolavinarak River	60° 15.44'N	164° 42.98'W		CHp,Pp,ACp,Wp	SHBc,SBc,WFc	S			ETF,STF,M	N
S-03	S-03	H	Kinia River	60° 10.76'N	164° 30.01'W		H	SHBc,SBc,WFc	S			ETF,STF,M	YDNWR,N
S-04	S-04	H	Kinak Bay	59° 58.78'N	164° 10.49'W		W,H	SHBc,SBc,WFc	S			ETF,STF,M,GB	YDNWR,N
S-05	S-05	H	Kikegtek & Pingrbek Islands	59° 51.47'N	164° 19.61'W		H	SBn,SHBc,WFc	S			GB	YDNWR
S-06	S-06	H	Kwigillingok River	59° 50.74'N	163° 07.27'W	W	W,H	SHBc,SBc,WFc	S		C	M,PS	N
S-07	S-07	H	Kongiganak River	59° 54.86'N	162° 54.68'W		W,H	SHBc,SBc,WFc	S		C	ETF,M,PS	N
S-08	S-08	H	Ishkowik River	59° 57.89'N	162° 42.32'W		W,H	SHBc,SBc,WFc	S		C	ETF,M,PS	N
S-09	S-09	H	Eek Channel	60° 08.57'N	162° 11.86'W		CH,CO,K,P,S,AC,SF,W	SHBc,SBc,WFc	S		C	ETF,M,PS	YDNWR,N
S-16	S-10	H	Kanektok River	59° 44.90'N	161° 58.15'W		CH,CO,K,P,S,AC,W,H	SHBc,SBc,WFc	S		C	ETF,STF,GB,M,PS	N
S-20	S-11	H	Carter Bay	59° 18.39'N	161° 58.68'W		CH,CO,K,P,AC,W,H	SHBc,SBc,WFc	S		C	STF,GB,M,PS	BLM,N
S-21	S-12	H	Goodnews Bay	59° 04.04'N	161° 46.35'W	W	CH,CO,K,P,S,AC,W,H	SBc,SHBc,WFc	S			GB,STF,SRS,ETF,M,EWP	N
S-22	S-13	H	Salmon River	58° 51.39'N	161° 47.97'W		CH,CO,K,P,S,H	SBc,SHBc,WFc	S			GB,M,ETF,PS	TNWR,N
S-23	S-14	H	Chaguan Bay	58° 46.29'N	161° 47.43'W	SL,SS	CH,CO,K,P,AC,W,H	SBn,SHBc,WFc	S			GB,STF,SRS,ETF,M,EWP	TNWR,N
S-24	S-15	H	Security Cove	58° 41.24'N	161° 54.85'W	SL,SS	H	SBn,SHBc,WFc	S			GB,STF,SRS,ETF,	TNWR,N
S-26	S-16	H	Nanuak Bay	58° 34.51'N	161° 46.36'W	W,SS	CH,CO,S,AC,H	SBn,SHBc,WFc	S			GB,STF,SRS,ETF,M,PS	TNWR,N
S-10			Tagayarak River	60° 14.34'N	162° 33.60'W		SF,W	SHBc,SBc,WFc			C	ETF,M,PS	YDNWR,N
S-11			Kinak River	60° 18.92'N	162° 33.37'W		SF,W	SHBc,SBc,WFc			C	ETF,M,PS	YDNWR,N
S-12			Kialik River	60° 24.28'N	162° 25.73'W		SF,W	SHBc,SBc,WFc			C	ETF,M,PS	YDNWR,N
S-13			Johnson River	60° 39.09'N	162° 06.52'W		SF,W	SHBc,SBc,WFc			C	ETF,STF,M,PS	YDNWR,N
S-14			Napaskiak Slough	60° 42.40'N	161° 46.38'W		SF,W	SHBc,SBc,WFc			C	ETF,STF,M,PS	N

Index Number	GRS Number	Priority	Location	Latitude	Longitude	Marine Mammals	Fish	Birds	Subsistence	Cultural Resources	Comm. Fish	Coastal Habitat	Land Mgt. Designation
S-15			Kuskokwim River at Bethel	60° 45.83'N	161° 44.59'W		CH,CO,K,P,S,AL,HW,LC,PC,SF,W	SHBc,SBc,WFc			C	ETF,STF,GB,M,PS	N
S-17			North & South Arolik River	59° 40.90'N	161° 55.44'W		CH,CO,K,P,S,AC,W,H	SHBc,SBc,WFc			C	ETF,STF,GB,M,PS	N
S-18			Jacksmith Bay	59° 29.54'N	161° 46.03'W		CH,CO,K,P,S,AC,W,H	SHBc,SBc,WFc			C	STF,GB,M,PS	TNWR,N
S-19			Cripple Creek	59° 25.31'N	161° 52.48'W		CH,CO,K,P,S,AC,W,H	SHBc,SBc,WFc			C	STF,GB,M,PS	BLM,N
S-25			Cape Newenham	58° 39.12'N	162° 12.97'W	W,S,SL	H	SBn,SHBc,WFc				GB,ERS	TNWR,N
S-27			Pyrite Point	58° 35.33'N	161° 33.37'W	W,SS	CH,AC	SBn,SHBc,WFc				GB,STF,SRS,ETF,M,PS	TNWR,N
S-28			Asigyukpak Point	58° 40.62'N	161° 21.59'W		H,CP,RS	SHBc,SBc,WFc				GB,STF,SRS,ETF,M,PS	TNWR,N
ISLAND ZONE													
I-03	I-01	H	NE Lagoon	60° 23.75'N	172° 36.95'W	SL,SS,W	DV	SBn,SHBc,WFc	S			GB,M,PS	AMNWR
I-08	I-02	H	Hall Island	60° 40.76'N	173° 02.16'W	SL,SS,W		SBn,SHBc,WFc	S			GB,ERS,EWP	AMNWR
I-10	I-03	H	Shoal Bay/Mekoryuk River	60° 23.42'N	166° 10.21'W	W,SS	CH,CO,P,AC	WFc	S			ETF,STF,GB,M,PS	M
I-11	I-04	H	Iookswarat Bay/Jewoak Creek/Anluk Creek	60° 21.51'N	166° 22.89'W	SS	CH,AC		S			EWP,ETF,GB,M	M
I-14	I-05	H	Nariksmiut/Ahding River	60° 18.55'N	166° 45.77'W		CH,P,AC	SBn,WFc	S			EWP,ETF,GB,M	N
I-15	I-06	H	Nash Harbor	60° 13.06'N	166° 52.90'W		CH,P,AC	SBn,WFc	S			EWP,SRS,M	N
I-22	I-07	H	Duchikthluk Bay	59° 48.73'N	166° 06.40'W	SS	CH,CO,P,AC	SBn,SHBc,WFc	S			SRS,GB,M	YDNWR,N
I-23	I-08	H	Nunarriugarmiut Lagoon	59° 52.99'N	165° 57.91'W		CH,CO,AC	SBn,SHBc,WFc	S			SRS,GB,M	YDNWR,N
I-26	I-09	H	Kaliksneethnook River Area	60° 08.52'N	165° 39.38'W		CH,AC	SBn, WFc	S			ERS,GB	YDNWR,N
I-27	I-10	H	Koweejoongak River/Vakeekalik Creek	60° 19.68'N	165° 56.19'W		CH,CO,P,AC	WFc	S			SRS,GB,M	YDNWR,N
I-01			Cape Upright	60° 17.79'N	172° 14.61'W	SL,SS,W		SBn,SHBc,WFc				GB,ERS	AMNWR
I-02			NE St, Matthews Is.	60° 23.23'N	172° 24.69'W	SL,SS,W		SBn,SHBc,WFc				GB,M,PS	AMNWR
I-04			N St Matthews Lagoons	60° 28.56'N	172° 47.78'W		DV	SBn,SHBc,WFc				GB,M,PS	AMNWR
I-05			Glory of Russia Cape	60° 36.23'N	172° 55.42'W	SL,SS,W	DV	SBn,SHBc,WFc				GB,ERS,EWP	AMNWR
I-06			SW St. Matthews Is.	60° 29.50'N	173° 04.00'W	SL,SS,W		SBn,SHBc,WFc				GB,ERS,EWP	AMNWR
I-07			Sugarloaf Mountain	60° 19.15'N	172° 38.31'W	SL,SS,W	DV	SBn,SHBc,WFc				GB,ERS,EWP	AMNWR
I-09			Pinnicle Island	60° 12.73'N	172° 43.16'W	SL		SBn,WFc				GB,ERS,EWP	AMNWR
I-13			Nigikmiut Creek/Kahniruk River	60° 20.35'N	166° 38.70'W		CH,AC	WFc				EWP,ETF,GB,M	N
I-16			Ahlik River	60° 13.19'N	167° 11.46'W	SS	CH,P,AC	SBn,WFc				EWP,SRS,M	YDNWR,N
I-17			Ikook Point	60° 13.02'N	167° 26.48'W	SL,SS,W		SBn,WFc				EWP,SRS,M	YDNWR,N
I-18			Dooksook River	60° 02.75'N	167° 16.91'W	SL,W	CH,S,AC	SBn,WFc				EWP,SRS,M	YDNWR,N
I-19			Dahloongamiut/Kiyakyaliksamiut Rivers	59° 58.33'N	167° 04.21'W		CH,CO,AC	SHBc,SBc,WFc				EWP,SRS,M	YDNWR,N
I-20			Chakwakamiut/Jayalik Rivers	59° 54.58'N	166° 49.39'W		CH,AC	SBn,SHBc,WFc				SRS,GB,M	YDNWR,N
I-21			Binajoaksmiut River/Bagookbit Dunes	59° 49.90'N	166° 27.05'W		CH,CO,AC	SBc,SHBc,WFc				SRS,GB,M	YDNWR,N
I-24			Nakooytoolek	59° 53.41'N	165° 44.84'W		CH,CO,AC	SBn,SHBc,WFc				SRS,GB,M	YDNWR,N
I-25			Little Cape Corwin	60° 03.11'N	165° 39.11'W		CH,CO,P,AC	WFc				ERS,GB	YDNWR,N

Marine Mammals	Fish	Intertidal	Birds	Subsistence	Cultural Resources	Comm.Fish	Coastal Habitat	Land Mgt. Designation
S = Harbor Seal	S = Sockeye Salmon	I=Intertidal Resources present throughout coastal areas of Western Alaska.	WFc = Waterfowl concentration area	S=Subsistence activities	R = REPORT any cultural resources found during operations to FOSC Historic Properties Specialist.	C = Commercial fishing	LLT= Low lying Tundra	TL = Tidelands leases, permits, & right-of-ways
SL = Sea Lion	P = Pink salmon		SHBc= Shorebird concentration area			SN=Set Net fishing	M= Marsh	SL=State Lands
W=Walrus	Co = Coho Salmon		SBc= Seabird Concentration			H=Herring	STF= Sheltered Tidal Flats	SP = State Park
PB=Polar Bear	K=Chinook		SBn=Seabird Nesting				GB= Gravel Beaches	AMNWR = Alaska Maritime National Wildlife Refuge
SS=Spotted Seal	Ch = Chum Salmon						SRS= Sheltered Rocky Sh	
RS=Ringed Seal	DV = Dolly Varden Char				I = FOSC Historic properties specialist should INSPECT site prior to operations.		TC= Tundra Cliffs	N = Native owned
BS=Bearded Seal	SC=Saffron Cod						EWP= Exposed wavecut p	S = State owned
	H = Herring Spawning						ERS=exposed rocky shore	P = Private owned
Ringed Seals and Spotted Seals are present throughout the Subarea. Listing on the SSM indicates a high concentration area.	AC=Arctic Char			Lack of listing in the SSM does not indicate that no subsistence activities take place in the area.			PS=Peat shoreline	BLM = Bureau of Land Mngt.
	SH= Steelhead trout						ETF=Exposed Tidal Flats	
	RS=Rainbow Smelt							YDNWR-Yukon Delta National Wildlife Refuge
	W=White Fish							NP-National Park
	SF=Sheefish				M = FOSC Historic properties specialist should MONITOR operations.			M= Municipal
	CP=Capelin							NF=National Forest, Monument, Recreational, and Conservation areas
	Additional species occur in the nearshore waters of Western Alaska							NA=Native Allotment

GEOGRAPHIC RESPONSE STRATEGIES: PART TWO – GEOGRAPHIC RESPONSE STRATEGIES

For the Western Alaska Geographic Response Strategies, please visit the following website.

Western Alaska Northern Zone GRS
http://dec.alaska.gov/spar/perp/grs/wa/northern.htm

Western Alaska Southern Zone GRS
http://dec.alaska.gov/spar/perp/grs/wa/southern.htm

Western Alaska Island Zone GRS
http://dec.alaska.gov/spar/perp/grs/wa/islands.htm

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GEOGRAPHIC RESPONSE STRATEGIES: PART THREE – REFERENCES

Sensitive Areas

The Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Unified Plan, May 1994 ..... ADEC, USCG, EPA

Wildlife Protection Guidelines for Alaska (current year's edition) ..... Alaska Regional Response Team

Gulf of Alaska: Physical Environment and Biological Resources, 1986 ..... Hood and Zimmerman (eds.)

Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Databases, 1993 ..... NOAA

Climatic Atlas, Volume 1: Gulf of Alaska, 1988 ..... National Climatic Data Center (NCDC) and Arctic Environmental Information and Data Center (AEIDC)

Environmental Sensitivity Mapping for Developing and Evaluating Spill Response Plans. A Working Paper for the Regional Workshop on Designing a Geographic Information System for Oil Spills, 1994 ..... NOAA, EPA

Coastal Resources Inventory and Environmental Sensitivity Maps, Aleutian East Borough, Alaska. 2001 ..... Research Planning Institute

Tidal Current Tables: Pacific Coast of North America and Asia (current year's edition) ..... US Department of Commerce

Land Ownership

State of Alaska Land Ownership Maps at http://www.dnr.state.ak.us/pic/maps.htm ..... Alaska Department of Natural Resources

Property Maps at http://quadpicker.landrecords.info/ ..... Alaska State Geo-Spatial Data Clearinghouse (ASGDC)

Equipment & Techniques

Mechanical Protection Guidelines, June 1994 ..... NOAA, USCG

Field Guide for Oil Spill Response in Arctic Waters, 1998, at http://www.arctic-council.org/fldguide/ ..... Arctic Council

International Oil Spill Control Directory (current year's edition) ..... Cutter Information Corp.

Oil Containment Boom: Design, Deployment, Use Recovery & Cleaning ..... Clean Sound Cooperative

Oil Spill Response in Fast Currents, A Field Guide, Coast Guard Report #CG-D-01-02, 2001 ..... USCG

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