

**BRISTOL BAY
SUBAREA CONTINGENCY PLAN**

**GEOGRAPHIC RESPONSE STRATEGIES
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GEOGRAPHIC RESPONSE STRATEGIES: PART ONE – INTRODUCTION

Purpose and Scope

These Geographic Response Strategies (GRS) are designed to be a supplement to the Bristol Bay Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Bristol Bay 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 Bristol Bay 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.

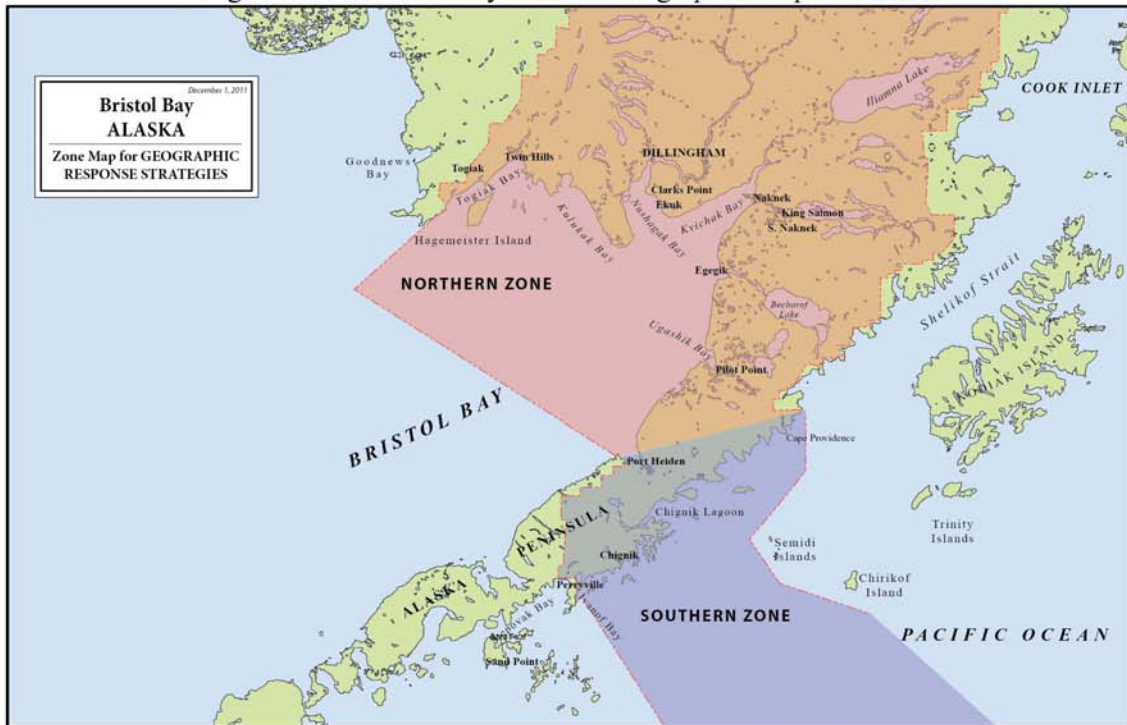
How to Use These Geographic Response Strategies

The information provided here supplements information provided in the Bristol Bay 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 Bristol Bay. 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. Bristol Bay 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 Bristol Bay 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 Bristol Bay 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 Bristol Bay Subarea Committee with the recommendation that it be adopted as part of the Bristol Bay SCP.

The Bristol Bay 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
- Bristol Bay Native Association
- Bristol Bay Borough
- City of Pilot Point
- Curyung Tribal Council
- City of Dillingham
- Lake and Peninsula Borough
- Minerals Management Service
- 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 Bristol Bay 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.

Bristol Bay Subarea
Site Selection Matrix

Index Number	Priority		Location	Latitude	Longitude	Marine Mammals	Fish	Comm. Fish	Coastal Habitat	Land Mgt. Designation
Northern	Zone									
N-01	H	N-01	Asvigyaq (Osviak) River	58°46.93'N	161°12.12'W	S	CH,CO,K,P,S,AC,CP,H	H, C	EG,GB,STF,M,EWP	TNWR,N
N-02	H	N-02	Matugaq (Matogak) River	58°52.19'N	160°57.09'W		CH,CO,K,P,S,AC,CP,H	H, C	EG,GB,STF,M,EWP	TNWR,N
N-03	H	N-03	Kuigmi (Quigmy) River	58°56.86'N	160°39.31'W		CH,CO,K,S,AC,CP,H	H, C	GB,STF,M,EWP	N
N-04	H	N-04	Qurluq (Kurtluk) River	59°01.15'N	160°28.57'W		CH,H	H, C	GB,ETF,M,EWP	N
N-05	H	N-05	Togiak River	59°03.31'N	160°20.83'W		CH,CO,K,P,S,DV,RS,W,H	H, C	EG,GB,ETF,M	N
N-06	H	N-06	Negukthlik (Negiqliq) River	58°53.87'N	160°10.50'W	S	CH,CO,K,P,S,AC,H	H, C	EG,GB,ETF,M,EWP,STF	N
N-13	H	N-07	Round Island	58°35.77'N	159°56.68'W	W, S	H	H, C	EWP	SGR
N-16	H	N-08	Kulukak & Qaniq Rivers	58°54.34'N	159°40.31'W	S	CH,CO,K,P,S,AC,H	H, C	EG,GB,STF,ETF,M	TNWR,N
N-20	H	N-09	Igushik River	58°42.46'N	158°53.08'W		CH,CO,K,P,S,AC,	C	PS,STF,M,GB	TNWR,N
N-24	H	N-10	Kvichak River	58°56.30'N	157°00.35'W		CH,CO,K,P,S,AC,W	C	STF,ETF,M	
N-25	H	N-11	Naknek River	58°43.25'N	157°04.91'W	S	CH,CO,K,P,S,AC,DV,RS,PC	C	ETF,GB,M,STF	N,S,M
N-27	H	N-12	Egegik Bay	58°12.45'N	157°27.07'W	S,O	CH,CO,K,P,S,DV	C	ETF,STF,M,GB	N,M
N-28	H	N-13	South Spit	58°08.17'N	157°34.70'W	S,O		C	STF,M,GB	S
N-29	H	N-14	Ugashik Bay	57°34.27'N	157°40.27'W	S,O	CH,CO,K,P,S,DV,RS	C	ETF,STF,GB,M,PS	N,S
N-30	H	N-15	Cinder River	57°21.58'N	158°06.42'W	S,O	CH,CO,K,P,S,DV	C	ETF,STF,GB,M,PS	S
N-31	H	N-16	South Cinder River	57°17.14'N	158°19.10'W	S,O	CH,CO,K,P,S	C	ETF,STF,GB,M,PS	S
N-33	H	N-17	Port Heiden	56°53.44'N	158°47.23'W	S,O	CH,CO,K,P,S,DV	C	ETF,STF,GB,M,PS	S,N
N-07			Summit Island	58°50.06'N	160°12.00'W	S	H	C	GB,EWP	SGR
N-08			Hagemeister Island Spit	58°40.97'N	161°10.20'W	W	H	C	EG,GB,EWP	TNWR
N-09			North Hagemeister Island	58°44.97'N	160°53.19'W	S	CH,AC,H	C	EG,GB,EWP	TNWR,N
N-10			Southern Hagemeister Island	58°33.12'N	160°59.15'W	S	CH,AC,H	C	GB,EWP	TNWR,N
N-11			High Island	58°43.37'N	160°25.50'W	W, S	H	C	GB,EWP	SGR
N-12			Crooked Island	58°41.34'N	160°15.31'W	S	H	C	GB,EWP	SGR
N-14			Nunavachak Lake	58°52.36'N	160°02.30'W	S	CH,S,H	C	EG,GB,EWP	TNWR,N
N-15			Metervik Bay	58°50.03'N	159°48.03'W	S	CH,CO,H	C	EG,GB,EWP,M	TNWR,N
N-17			Tvativak Bay	58°48.49'N	159°28.53'W		S,H	C	EG,GB,EWP,M,STF	TNWR,N
N-18			Cape Constantine	58°22.94'N	158°51.95'W	W, S	H	C	GB,STF,ETF,M	TNWR,N
N-19			Nichols Spit	58°32.95'N	158°43.02'W	W, S	CO,AC,H	C	GB,STF,ETF,M	TNWR,N
N-21			Snake River	58°50.78'N	158°44.08'W		CH,CO,K,P,S,AC,	C	ETF,GB,M,STF	TNWR,N
N-22			Squaw Creek	59°01.68'N	158°30.87'W		CH,CO,K,P,S,RS	C	ETF,GB,M,STF	N
N-23			Wood River	59°03.47'N	158°24.20'W		CH,CO,K,P,S,AC,W	C	STF,M,GB,PS	N,S
N-26			Big Creek	58°17.98'N	157°26.06'W	S		C	ETF,STF,M,GB	N,M
N-32			Reindeer Creek	57°00.32'N	158°40.78'W		CH,CO,S	C	GB	S,N
South	Zone									
S-01	H	S-01	Ivanof Bay	55°51.73'N	159°30.38'W	O	CH,CO,S	C	STF,M,GB,SRS,ETF	APNWR,N
S-05	H	S-02	Three Star & Kametolook River	55°54.43'N	159°07.64'W	O	CH,CO,P,S	C	GB,ERS	N,APNWR
S-06	H	S-03	Anchor Bay	55°55.18'N	158°58.79'W	O	CH,CO,P	C	GB,ERS	N
S-08	H	S-04	Mitrofan Bay	55°56.60'N	158°49.34'W	S,O	CH,CO,P,S,SH	C	STF,M,GB,ERS	APNWR,N
S-14	H	S-05	Anchorage/Mud Bays	56°19.85'N	158°23.22'W	O	CH,CO,P,S,DV	C	M,GB,EWP	N,M
S-15	H	S-06	Chignik Lagoon	56°21.46'N	158°29.20'W	O	CH,CO,K,P,S,DV	C	GB,STF,M	N,M
S-15b	H	S-07	Chignik River	56°16.66'N	158°38.59'W	O	CH,CO,K,P,S,DV	C	GB,STF,M	N,M
S-17	H	S-08	Hook Bay	56°29.67'N	158°06.07'W	S,O	CH,CO,P	C	GB,STF,SRS,ETF,M,PS	APNWR,N
S-20	H	S-09	South Kujulik Bay	56°34.69'N	157°53.73'W	S,O	CH,P	C	GB,SRS,M,ETF,EWP	APNWR,N
S-21	H	S-10	North Kujulik Bay	56°38.68'N	157°46.98'W	SL,O	CH,P	C	GB,EWP,M	APNWR,N
S-24	H	S-11	Aniakchak Bay	56°42.84'N	157°31.83'W	S,O	CH,CO,S,P	C	GB,M,STF	ANMP,N
S-26	H	S-12	Yantarni Bay	56°49.37'N	157°07.47'W	O	CH,P,S	C	GB,EWP,ETF,EWP	N
S-28	H	S-13	Nakallik Bay	56°52.14'N	156°55.18'W	SL,SS,W	CH,CO,K,P,S	C	GB,ERS,EWP	APNWR,N
S-29	H	S-14	Chiginnagay Bay	56°59.80'N	156°41.70'W	S,O	CH,CO,P	C	GB,ERS,EWP	APNWR,N
S-30	H	S-15	Port Wrangell	57°00.15'N	156°42.88'W	S,O	CH,CO,P	C	GB,ERS,EWP	APNWR,N
S-02			Jacob & Paul Islands	55°46.45'N	159°20.68'W	O		C	ERS,GB	APNWR,N
S-03			Humpback Bay	55°51.59'N	159°22.13'W	O	CH,CO,P	C	GB,ERS	APNWR,N

Bristol Bay Subarea
Site Selection Matrix

Index Number	Priority		Location	Latitude	Longitude	Marine Mammals	Fish	Comm. Fish	Coastal Habitat	Land Mgt. Designation
S-04			Chiachi Island	55°50.91'N	159°11.48'W	O		C	GB,ERS	APNWR,N
S-07			Mitrofanina Island	55°52.32'N	158°56.56'W	SL,S,O		C	GB,ERS	APNWR
S-09			Kuiukata Bay	56°09.32'N	158°33.43'W		CH,P	C	SRS,GB,STF,M	APNWR,N
S-10			Seal Cape	56°00.14'N	158°24.36'W	SL		C	GB,ERS,EWP	APNWR
S-11			Chankliut Island	56°09.74'N	158°08.72'W	SL,S		C	GB,ERS,EWP	APNWR,N
S-12			Castle Bay	56°14.88'N	158°12.30'W	O	CH,P	C	GB,ERS,M,ETF,EWP	APNWR,N,M
S-13			Lake Bay	56°18.73'N	158°15.73'W	O	CH,P	C	M,GB,EWP	APNWR,N
S-16			Nakchamik/Atkulik/Kak Island	56°19.50'N	157°46.61'W	SL,S	CO	C	GB,ERS	APNWR,N
S-18			Unvikshak Island	56°30.90'N	157°42.69'W	S,O		C	GB,ERS,EWP	APNWR,N
S-19			Cape Kumliun	56°30.84'N	157°49.83'W	S,O	P	C	GB,ERS,EWP	APNWR,N
S-22			Kumlik Island & Cape	56°38.18'N	157°26.62'W	S,O		C	GB,EWP	ANMP,N
S-23			Sutwick Island	56°39.75'N	157°09.30'W	SL,S,O		C	GB,EWP	ANMP,N
S-25			Amber Bay	56°48.94'N	157°23.57'W	S,O	CH,CO,P	C	GB,EWP,ETF	ANMP,N
S-27			Ugaiushak Island	56°49.65'N	156°52.55'W	S		C	GB,ERS,EWP	APNWR
S-31			Agripina Bay	56° 07.48'N	156° 25.42'W	S,O	CH,CO,P	C	GB,ERS,EWP	APNWR,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 Bristol Bay.	WFc = Waterfowl concentration area	S=Subsistence Activities Present	R = REPORT any cultural resources found during operations to FOSC Historic Properties Specialist.	C = Commercial fishing	LLT= low lying tundra	TNWR=Togiak National Wildlife Refuge				
SL = Sea Lion	P = Pink salmon		SHBc= Shorebird concentration area	Lack of listing in the SSM does not indicate that no subsistence activities take place in the area.		SN=Set Net fishing	M= marsh	APNWR-Alaska Peninsula National Wildlife Refuge				
W=Walrus	Co = Coho Salmon		SBc= Seabird Concentration				H=Herring	STF= sheltered tidal flats	SGR = State Game Refuge			
PB=Polar Bear	K=Chinook		SBn=Seabird Nesting		I = FOSC Historic properties specialist should INSPECT site prior to operations.			GB= gravel beaches	AMNWR = Alaska Maritime National Wildlife Refuge			
SS=Spotted Seal	Ch = Chum Salmon					SRS= sheltered rocky shore		N = Native owned				
RS=Ringed Seal	DV = Dolly Varden Char			TC= tundra cliffs		S = State owned						
BS=Bearded Seal	SC=Saffron Cod			EWP= exposed wavecut platform		P = Private owned						
H = Herring Spawning	AC=Arctic Char			ERS=exposed rocky shore		BLM = Bureau of Land Mngt.						
				PS=Peat shoreline		YDNWR-Yukon Delta National Wildlife Refuge						
				ETF=exposed tidal flats								
				EG=eelgrass				NP-National Park				
				WF=White Fish		SF=Sheefish		CP=Capelin	L=Lamprey			M= Municipal
												NF=National Forest, Monument, Recreational, and Conservation areas
												NA=Native Allotment

GEOGRAPHIC RESPONSE STRATEGIES: PART TWO – GEOGRAPHIC RESPONSE STRATEGIES

For the Bristol Bay Geographic Response Strategies, please visit the following website.

Bristol Bay Northern Zone GRS

<http://dec.alaska.gov/spar/perp/grs/bb/northern.htm>

Bristol Bay Southern Zone GRS

<http://dec.alaska.gov/spar/perp/grs/bb/southern.htm>

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June 29, 2012

Bristol Bay, ALASKA NORTHERN ZONE

Map for GEOGRAPHIC RESPONSE STRATEGIES

- N-01 Osviak River
- N-02 Matogak River
- N-03 Quigmy River
- N-04 Kurtluk River
- N-05 Togiak River
- N-06 Negukthlik River
- N-07 Round Island
- N-08 Kulukak & Kanik River
- N-09 Igushik River
- N-10 Kvichak River
- N-11 Naknek River
- N-12 Egegik Bay
- N-13 South Spit
- N-14 Ugashik Bay
- N-15 Cinder River
- N-16 South Cinder River
- N-17 Port Heiden



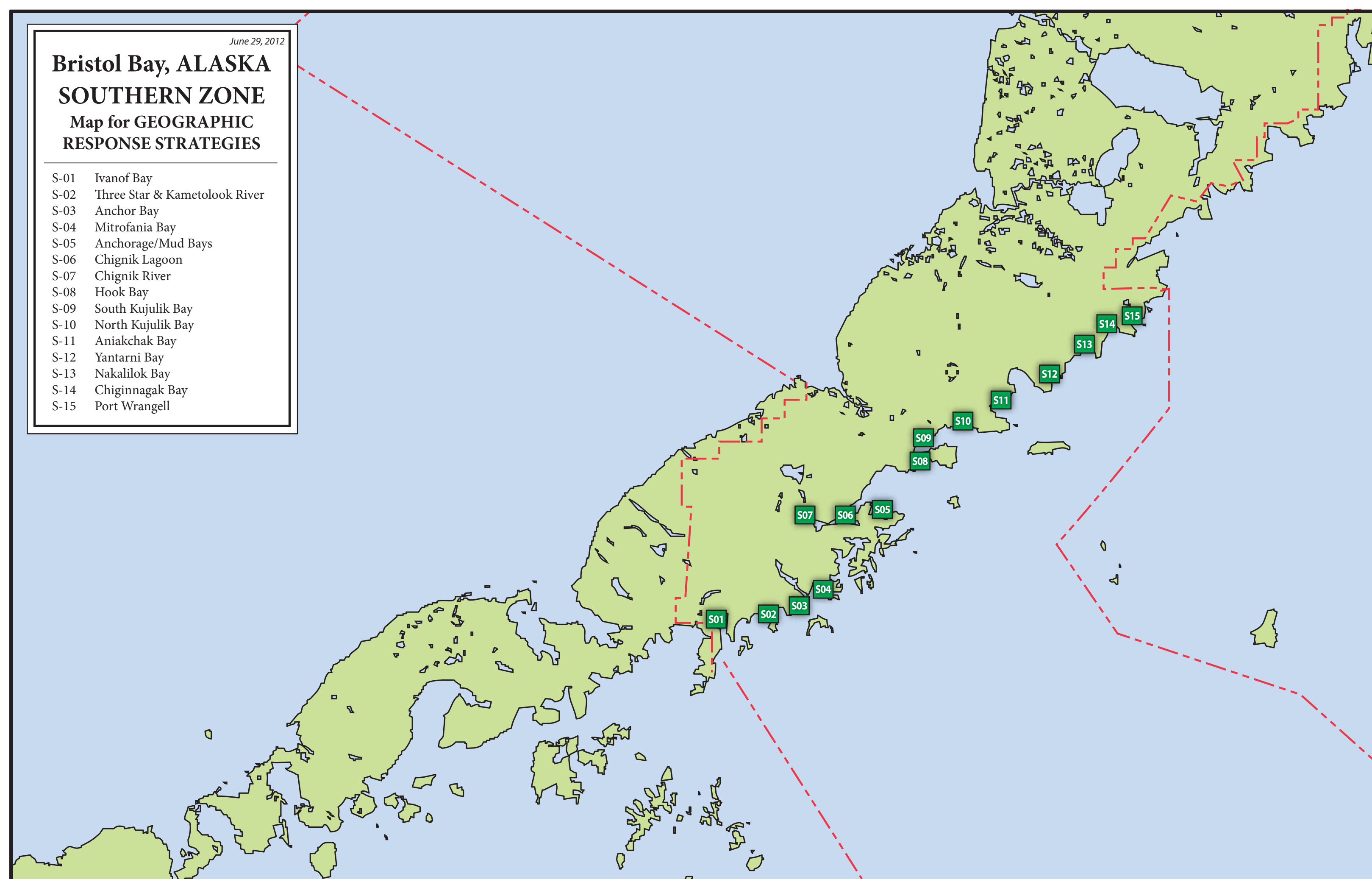
June 29, 2012

Bristol Bay, ALASKA

SOUTHERN ZONE

Map for GEOGRAPHIC RESPONSE STRATEGIES

- S-01 Ivanof Bay
- S-02 Three Star & Kametolook River
- S-03 Anchor Bay
- S-04 Mitrofanina Bay
- S-05 Anchorage/Mud Bays
- S-06 Chignik Lagoon
- S-07 Chignik River
- S-08 Hook Bay
- S-09 South Kujulik Bay
- S-10 North Kujulik Bay
- S-11 Aniakchak Bay
- S-12 Yantarni Bay
- S-13 Nakalilok Bay
- S-14 Chiginnagak Bay
- S-15 Port Wrangell



GEOGRAPHIC RESPONSE STRATEGIES: PART THREE – REFERENCES

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
Spill Tactics for Alaska Responders (STAR)	Alaska Department of Environmental Conservation
USCG Commandant (G-M) Letter 16465, Revised Guidelines for Conducting the USCG's OSRO Program, December 28, 1995.....	USCG
World Catalog of Oil Spill Response Products (current year's edition).....	Robert Schulze

GIS Databases

Alaska Department of Natural Resources	Alaska Geospatial Data Center, Anchorage
National Oceanic and Atmospheric Administration	John Whitney, Anchorage
National Park Service.....	George Dickison Anchorage
U.S. Fish and Wildlife Service.....	Catherine Berg, Anchorage