

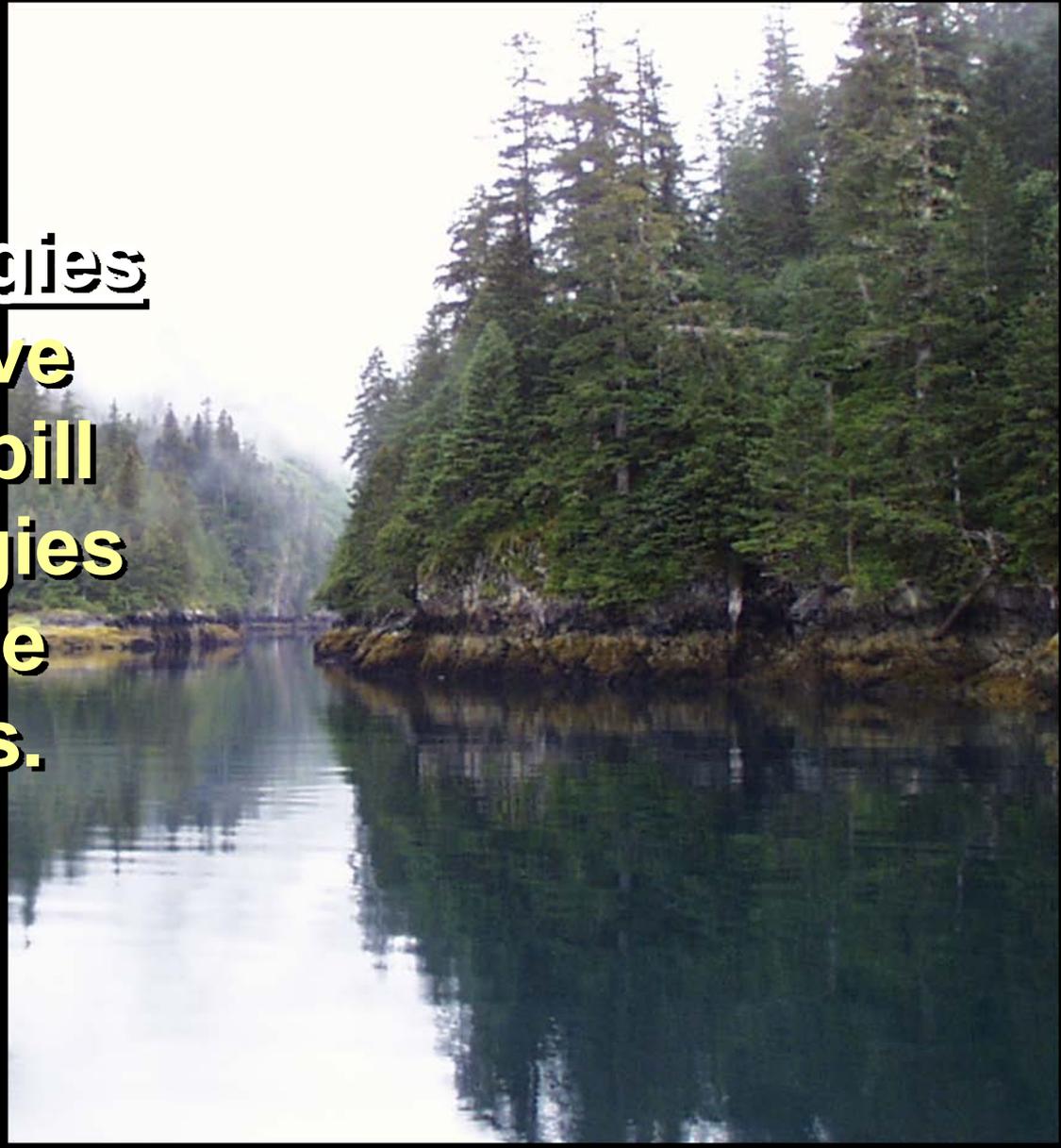


GEOGRAPHIC RESPONSE STRATEGIES

GRS

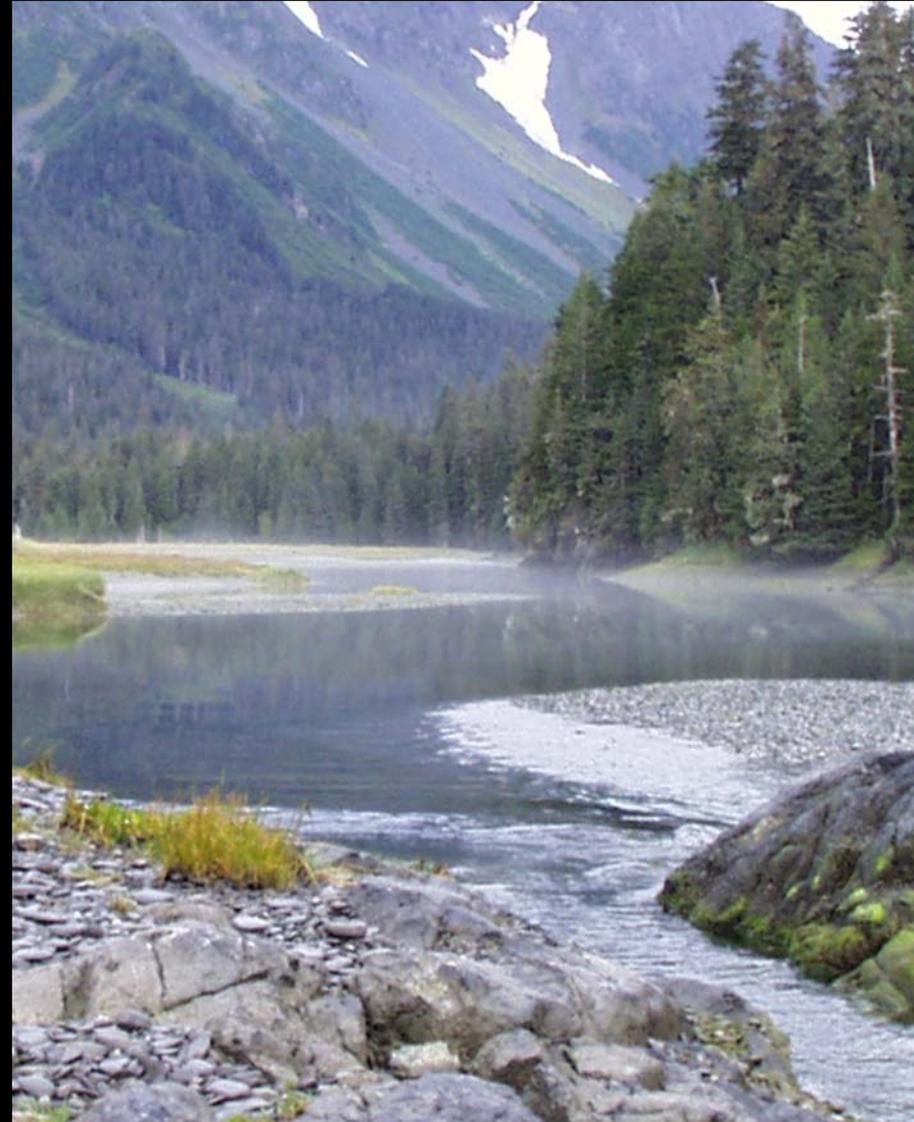
WHAT ARE GRS ?

Geographic
Response Strategies
**identify sensitive
areas and the spill
response strategies
to protect these
sensitive areas.**



GRS

Provide site-specific spill response plans to protect the priority sensitive areas in a geographic zone by presenting unified (public, responders, & agencies) priorities and strategies for implementation.



PRIMARY GUIDING PRINCIPLES

- **Create site-specific responder-oriented strategies and tactics to protect sensitive areas.**
- **Strategies should be flexible and modifiable to fit prevailing conditions.**
- **GRS are not a legal requirement.**



PRIMARY GUIDING PRINCIPLES



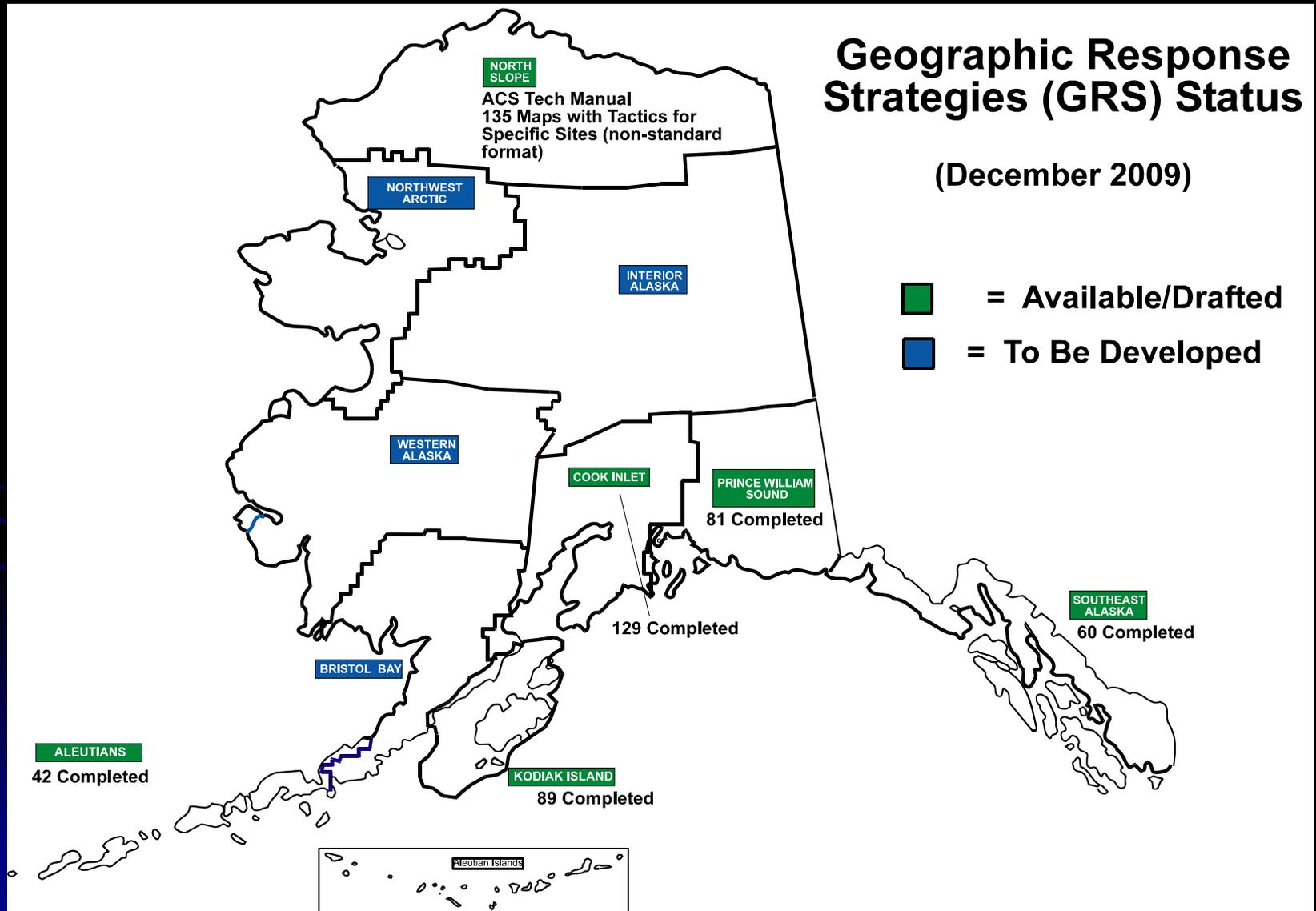
- **Identify resources at risk and set priorities for their protection.**
- **Provide lists of equipment and personnel needs, logistical information, and field instructions for deployment.**
- **Make practical to implement, test & update.**

SECONDARY GUIDING PRINCIPLES

- Use GRS development process to increase public awareness of response plans prior to a spill.
- Create a product with low maintenance cost and time requirements.
- ICS - Incident Command System user friendly.



Nearly 400 GRS have been developed for the State of Alaska



1ST STEP: ASSEMBLE A WORKGROUP

Workgroup assembled with personnel with the skills, background and expertise to develop the various components of the GRS.

Representatives are sought from:

- **Industry**
- **Spill Response Cooperatives**
- **Federal and State Resource Agencies**
- **Local Towns, Villages and Tribal Groups**

CRITERIA FOR SITE SELECTION



- **Environmental Sensitivity**

- **Risk of Potential Oil Spill**



- **Ability to Protect the Site**

SENSITIVITY: RESOURCES AT RISK



SENSITIVITY: HISTORIC/CULTURAL SITES



POTENTIAL SPILL RISKS IN THE AREA



ABILITY TO PROTECT

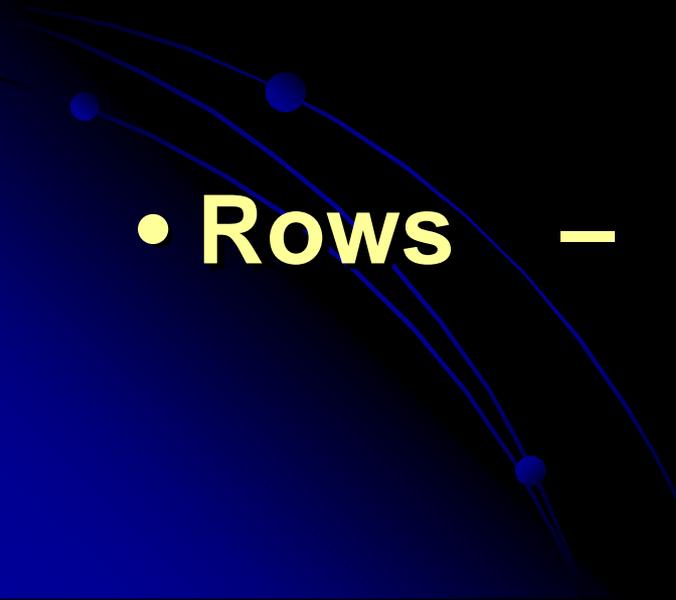


2nd STEP: SITE SELECTION PROCESS

- **Preliminary Site Selection by Natural Resource Agencies**
- **Public Input Process:**
 - **Fact Sheet, Maps**
 - **Press Release**
 - **Letters to interested groups and tribal organizations**
 - **Public Presentations**
- **Final Site Selection by GRS Workgroup**

SITE SELECTION MATRIX

The Site Selection Matrix is created to provide a listing of resources at each proposed site.

- **Columns – Priority Criteria From Area Contingency Plan**
 - **Rows – Potential Sites**
- 

SITE SELECTION MATRIX

SE #1 Zone Locations	Priority	GRS #	ESI Map #	lat (N)	lon (W)	Marine Mammals	Fish	Birds	Coastal Habitat
Bostwick Estuary	1	SE01-01	Ketch B-6	55 14	131 44		R	C	T,M,K
Foggy Bay	1	SE01-02	Prince Rupert D-3*	54 57	130 58	S,H	S, H		
Rudyard Bay	1	SE01-03	Ketch C-3	55 33	130 49	S	S		T,M
Chikamin River Estuary	1	SE01-04	Ketch D-3	55 48	130 57			C	M,T
Thorne Bay	1	SE01-05	Craig C-2	55 40	132 30		S		
Dog Is., N end of Duke Is. (Ka Shakes herring fishery)	1	SE01-06	Prince Rupert D-4	54 59	131 19		H		
Grindall Is.-haulout	1	SE01-07	Craig B-1	55 26	132 07	S			M
Karta Bay	1	SE01-08	Craig C-2	55 34	132 33		S		
Lincoln Channel	1	SE01-09	Prince Rupert C-3	54 43	130 40				
Tamgas Harbor (if requested)	1		Ketch A-5	55 05	131 46				K, M
Burroughs Bay	2		Ketch D-4	55 59	131 14		E,S	C	
Carroll Cr. Estuary	3		Ketch C-5	55 39	131 21			C	
George Inlet Salt Chuck	3		Ketch B-5	55 20	131 30			C	
Helm Bay Estuary	3		Ketch C-6	55 40	132 01			C	
Moser Bay Estuary	3		Ketch C-5	55 34	131 41			C	
Port Stewart Estuary	3		Ketch C-6	55 44	131 52			C	
Roosevelt Lagoon/Naha Bay	3		Ketch C-5	55 35	131 36			C	
Settlers Cove	3		Ketch C-6	55 30	131 14				R,I
Traitors Cove Salt Chuck	3		Ketch C-5	55 42	131 39			C	
Vallenar Bay Estuary	3		Ketch C-6	55 22	131 50			C	
Yes Bay/Wolverine Cr. Estuary	3		Ketch C-6	55 54	131 47			C	
Boca de Quadra			Ketch A-3	54 57	129 59	H		C	

3rd STEP: TACTICS GROUP

- **Design general protection and recovery tactics**
- **Gather information on the selected sites:**
 - **Maps and Charts**
 - **Photos**
 - **Sensitive resources**
 - **Local Knowledge**
- **Adapt tactics specifically to each site**
- **Conduct site surveys**

SITE SURVEYS



Surveys are conducted by members of the Tactics Group, which include agency and industry representatives and experienced spill responders.

Site characteristics and dimensions, observed wildlife, and other notable features in the area are documented.



SITE SURVEYS



Tides and currents are observed and, when possible, measured.

In some locations currents can be extreme, and strategies are then amended to account for these extremes.



PUBLIC PROCESS

All documents generated by the workgroup are available for review online.



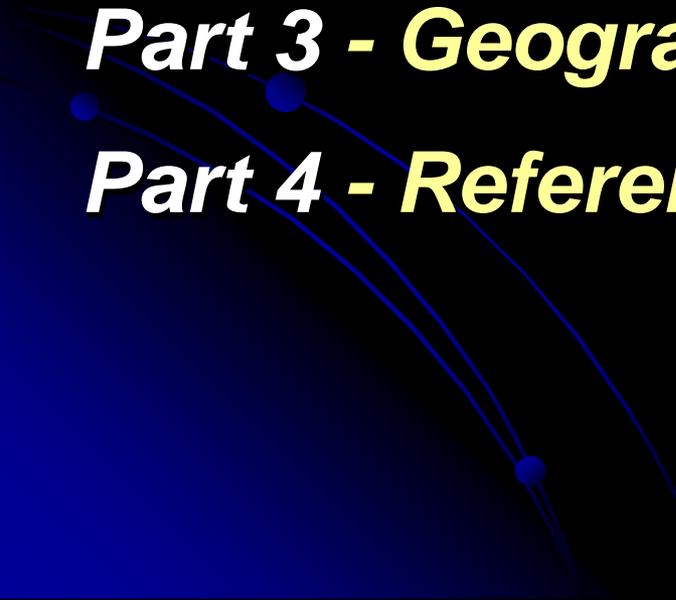
Components of a complete GRS package

Part 1 - Introduction

Part 2 - General Protection/Collection Tactics

Part 3 - Geographic Response Strategies

Part 4 - References

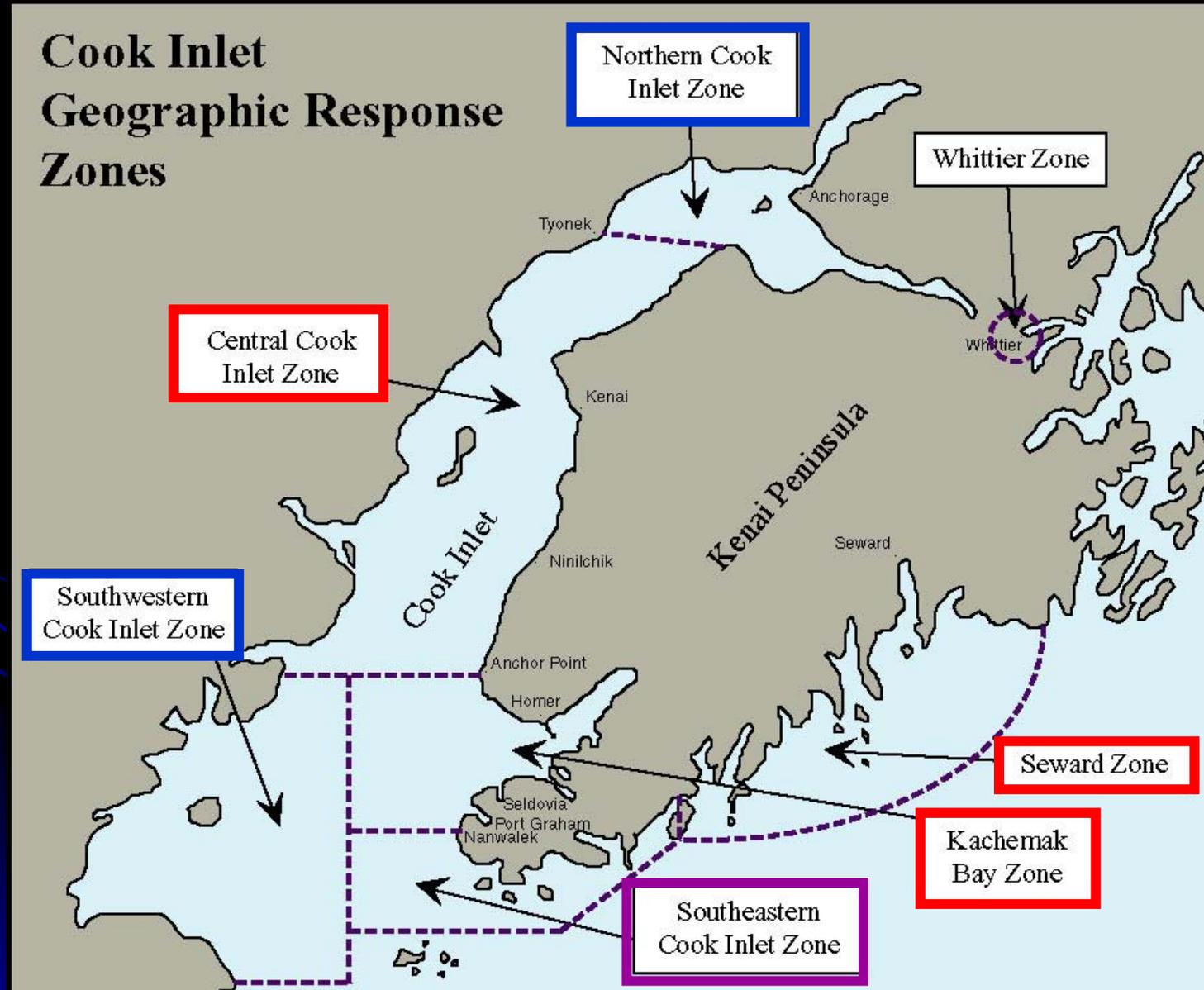


PART 1 - INTRODUCTION

- **Purpose and Scope**
- **How to Use This Document**
- **Who to Contact for Input**
- **How the Document Was Developed**
- **Zone Map**
- **Site Selection Matrix**



Sample Subarea Zone Map, eg. Cook Inlet



PART 2 - TACTICS

A variety of general spill response strategies and tactics are located in this section of the GRS.



Spill Tactics for Alaska Responders (STAR) Manual

Spill Tactics for Alaska Responders (STAR)

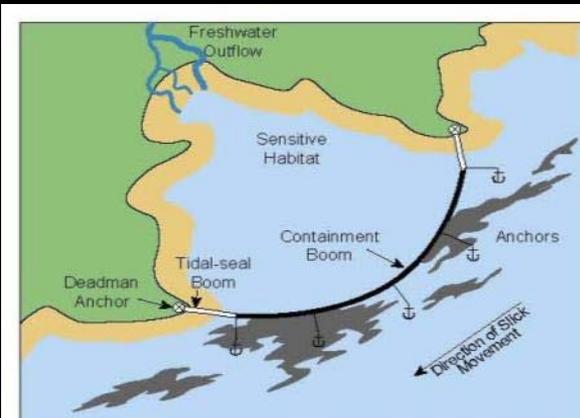


Figure EX-3. Exclusion booming configuration.

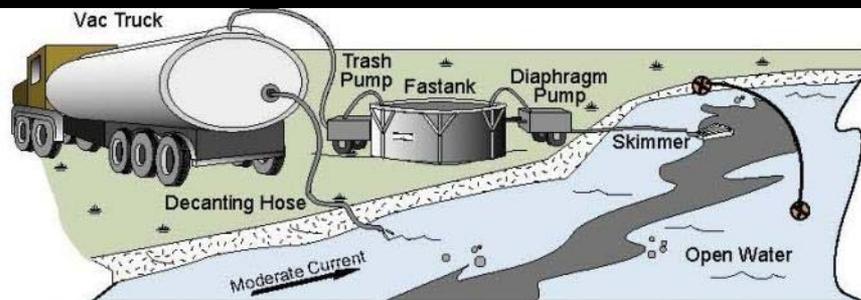
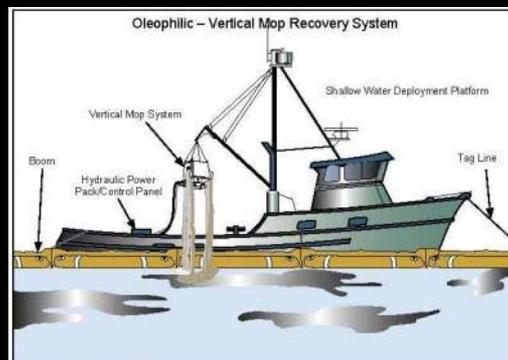


Figure SR-4. Shoreside recovery unit general configuration.



GRS: sample zone index map

Corresponding Locations

- | | |
|-------------------------------|---------------------------|
| KI01 - Buskin River | KI02 - Sargent Creek |
| KI03 - Russian River | KI04 - Midway Bay |
| KI05 - Barling Bay | KI06 - Moser Bay |
| KI07 - Akhiok | KI08 - Sukhoi Bay |
| KI09 - Tugidak Island | KI10 - Sturgeon Head |
| KI11 - Karluk Lagoon | KI12 - Larsen Bay Tanks |
| KI13 - Browns Lagoon | KI14 - Geographic Harbour |
| KI15 - Settler Cove | KI16 - Afognak Bay |
| KI17 - Big & Little Kitoi Bay | KI19 - Neva Cove |
| KI18 - Kitoi Bay Jaws | KI21 - Icon Bay |
| KI20 - Katmai Creek | |



MOST COMMON GRS FORMAT

Large size (11 x 17)
provided to responders
(8½ x 11 in SCPs)

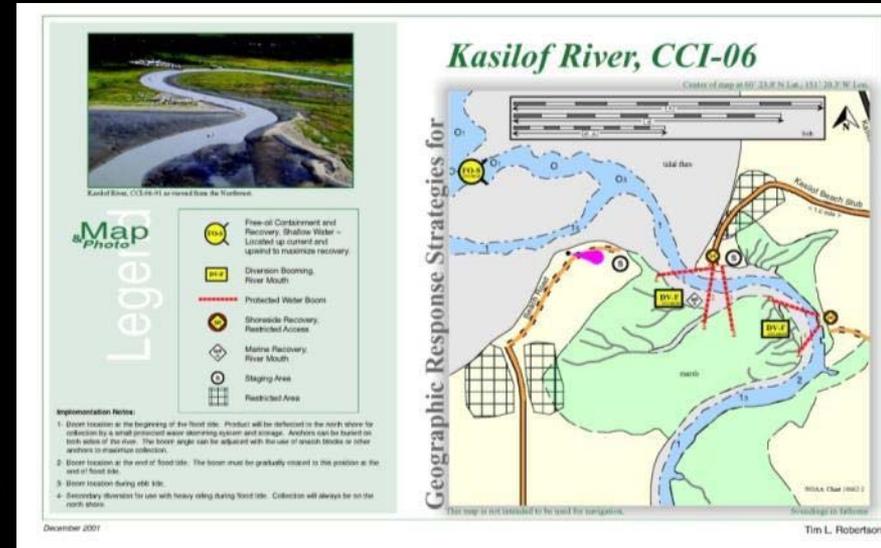
Color Maps and Photos

Expandable at later date

One page (both sides) per site

Bulleted presentation of information

ICS compatible



GRS Front Page



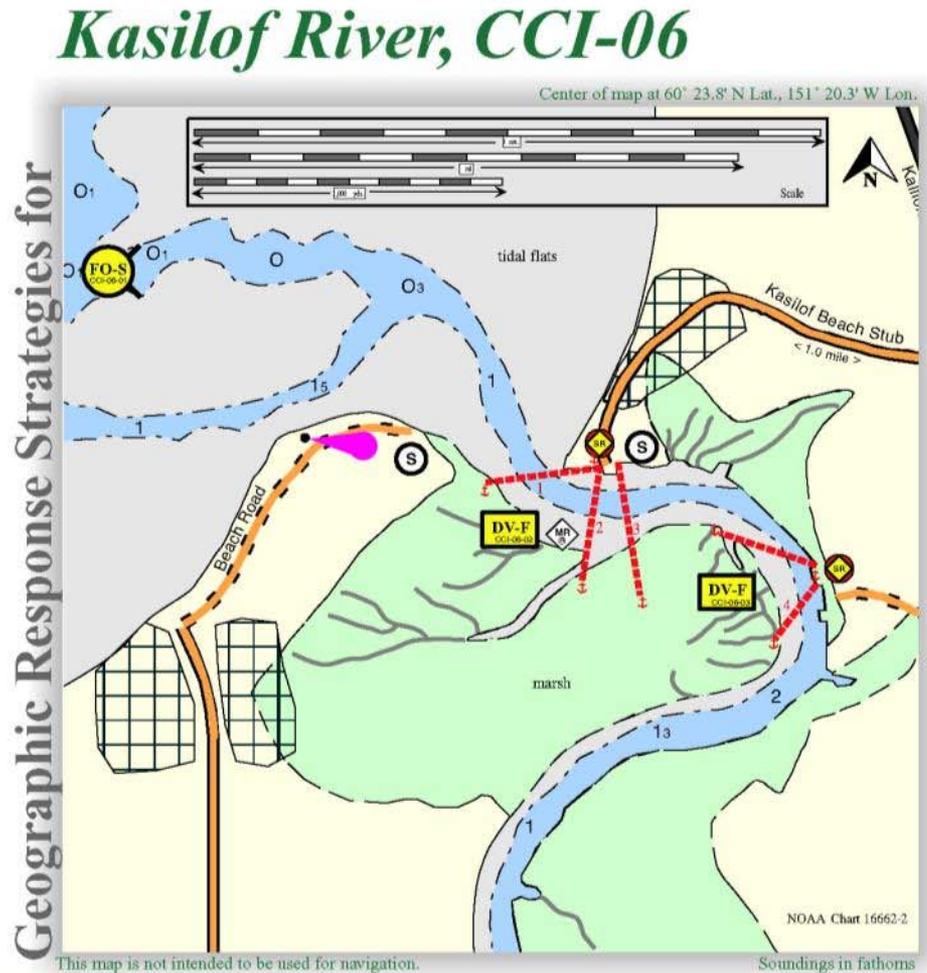
Kasilof River, CCI-06-01 as viewed from the Northwest.

Map
& Photo
Legend

	Free-oil Containment and Recovery, Shallow Water – Located up current and upwind to maximize recovery.
	Diversion Booming, River Mouth
	Protected Water Boom
	Shoreside Recovery, Restricted Access
	Marine Recovery, River Mouth
	Staging Area
	Restricted Area

Implementation Notes:

- 1- Boom location at the beginning of the flood tide. Product will be deflected to the north shore for collection by a small protected water skimming system and storage. Anchors can be buried on both sides of the river. The boom angle can be adjusted with the use of snatch blocks or other anchors to maximize collection.
- 2- Boom location at the end of flood tide. The boom must be gradually rotated to this position at the end of flood tide.
- 3- Boom location during ebb tide.
- 4- Secondary diversion for use with heavy oiling during flood tide. Collection will always be on the north shore.



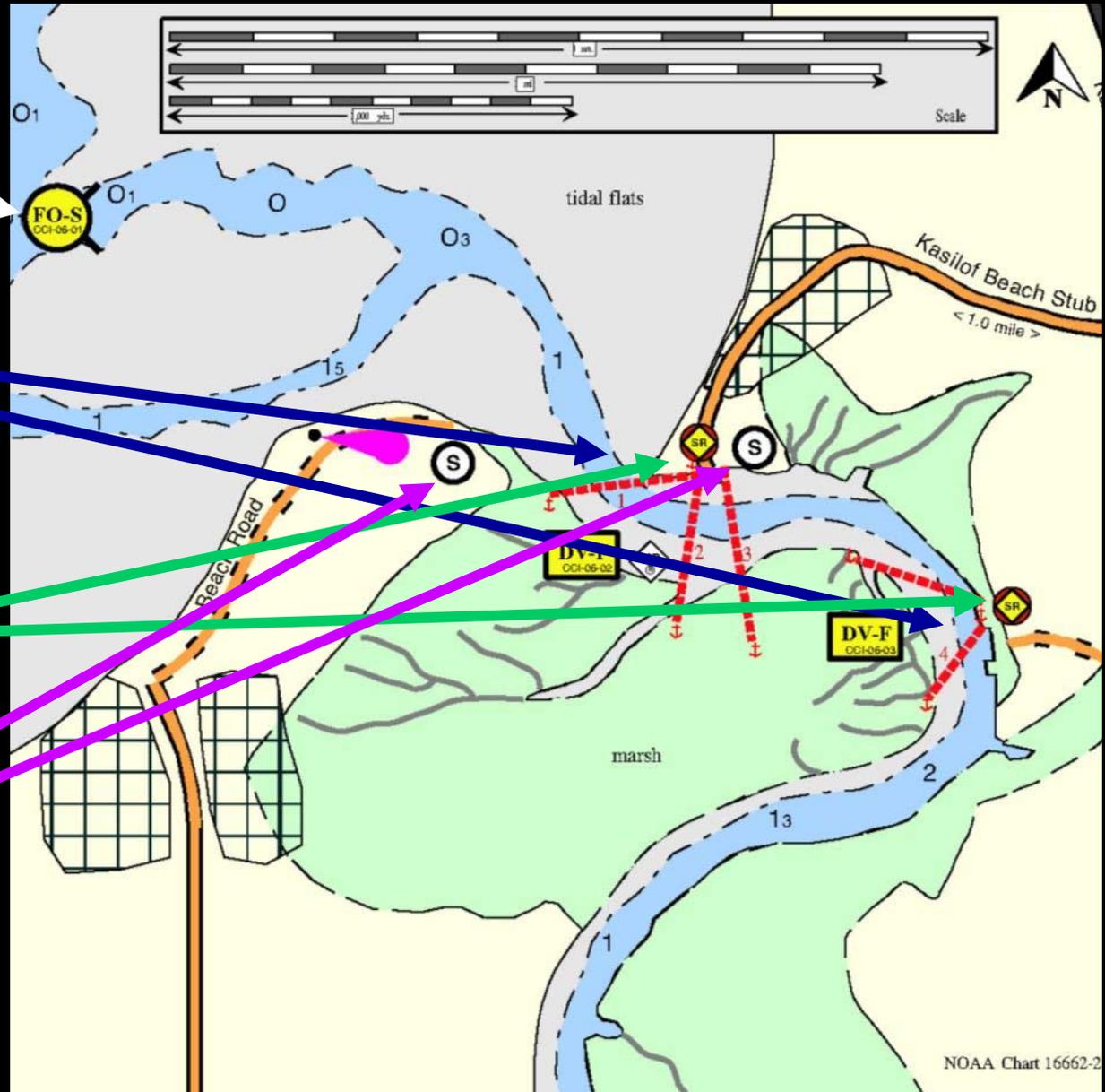
Sample GRS tactics map

**FREE OIL
RECOVERY
SHALLOW**

**PROTECTED
WATER BOOM**

**SHORESIDE
RECOVERY**

**STAGING
AREAS**



GRS Back Page

ID	Location and Description	Response Strategy	Implementation	Response Resources	Staging Area	Site Access	Resources Protected (months)	Special Considerations
CCI-06-01	Kasilof River Nearshore waters in the general area of: Lat. 60° 23.8 N Lon. 151° 20.3 W	* Maximize on-water recovery in the offshore & nearshore environment / outside the mudflats.	Deploy nearshore strike teams upwind and up current of the river mouth. Use aerial surveillance to locate incoming oil.	Multiple nearshore free-oil recovery strike teams as required to maximize interception of oil before it impacts sensitive areas.	Kasilof Harbor or Kenai Harbor	Via marine waters. See NOAA Charts 16661-1, 16662-1 or 16662-2.	Same as CCI-06-02.	Strong tidal currents, shoal waters and rocks. Vessel master should have local knowledge.
CCI-06-02	Kasilof River Lat. 60° 23.13 N Lon. 151° 17.87 W 2.5 nm. north of Cape Kasilof on east side of Cook Inlet River Channel • entrance marked by lighted buoy (May - November). • not navigable at low tide. • strong currents. • narrow and winding. • boats \pm 6' can navigate in river from entrance to 6 mi. upstream. Docks • located North side of river. • Cook Inlet Processing, 78' dock face, launch ramp and detached float.	* Divert spilled product to designated collection sites * Recover spilled product at designated collection sites. Seasonal Restriction River iced-in/not navigable from approximately November to April.	Place 1,000 ft. of diversion boom and collect product with an on-shore and/or marine collection unit.	Equipment 5 ea. 200 ft. river boom units 2 ea. protected water skimmer 600 ft. 2" discharge hose 2 ea. on-shore storage unit 12 ea. 40 lb. anchor systems 1 ea. marine storage unit 2000 ft. line Support 3 ea. vessel class #5/6 1 ea. truck 1 ea. truck with trailer 1 ea. shelter. 2 ea. ATV trailers 2 ea. ATVs 25 ea. fence posts 1 or 2 light plants Personnel/Shift 12 ea. deploy & set-up 8 ea. tend & maintain	North shore: • Services - crane, boat launch, electric power, heavy equipment access • Security - none. • Support - shelter. South shore: • Private land off Coho Loop • Service - none. • Security - none. • Support - shelter	FOSC Historic Properties Specialist should INSPECT site prior to operations. FOSC Historic Properties Title 16 permit may be required to work inside river. Contact Environmental Unit of the Unified Command for permit. North shore: Kalifornski Beach Road to Kasilof Beach Road, ends at beach near processor. South shore: Coho Loop road to end of dirt road, beach access via ATV or off road equipment. Seasonal Restriction Roads not plowed during winter approximately November - April.	• Tidal marshes (all year) • Salmon migration and spawning (May - October) • Intertidal salmon spawning (July - September) • Waterfowl and shore bird concentrations (May - September) • Fishing (July - September) • Heavy recreational use (June - September)	• Very difficult and unsafe to protect exposed tidal flats outside river mouth. • Working on banks of the river should be no problem. Take care not to work or walk on oiled shoreline, to avoid driving oil into the soils. • Access above intertidal area will have to be resolved with landowners before setting anchors or staging areas. Seasonal Vessel mooring buoys available during fishing season.
CCI-06-03	Kasilof River - Secondary Lat. 60° 22.97 N Lon. 151° 17.27 W Same as CCI-06-02.	* Duplicate primary tactics of diversion & collection further upstream, if required.	Place 1,000 ft. of diversion boom and collect oil with an on-shore unit.	Equipment 5 ea. 200 ft. river boom units 1 ea. protected water skimmer 600 ft. 2" discharge hose 2 ea. on-shore storage unit 10 ea. 40 lb. anchor systems 1000 ft. line Support 1 ea. vessel class #5/6 1 ea. truck 1 ea. truck with trailer 1 ea. shelter. 2 ea. ATV trailers 2 ea. ATVs 25 ea. fence posts 1 or 2 light plants Personnel/Shift 10 ea. deploy & set-up 6 ea. tend & maintain	North shore: • Services - crane, boat launch, electric power • Security - none. • Support - shelter. South shore: • Private land off Coho Loop • Service - none. • Security - none. • Support - shelter	Permits and inspection required (see CCI 06-02). North shore: Kalifornski Beach Road to Trans-Aqua sign, (1/4 mi. past Kasilof beach road). South shore: Coho Loop road to end of dirt road, beach access via ATV or off road equipment.	Same as CCI-06-02	Same as CCI-06-02

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CCI-06-03	Kasilof River - Secondary Lat. 60° 21.97 N Lon. 151° 17.27 W Same as CCI-06-02.	* Duplicate primary tactics of diversion & collection further upstream if required	Place 1,000 ft. of diversion boom and collect oil with an on-shore unit.	Equipment 5 ea. 200 ft. river boom units 2 ea. protected water skimmer 600 ft. 2" discharge hose 2 ea. on-shore storage unit 10 ea. 40 lb. anchor systems 1000 ft. line Support 1 ea. vessel class #5/6 1 ea. truck 1 ea. truck with trailer 1 ea. shelter. 2 ea. ATV trailers 2 ea. ATVs 25 ea. fence posts 1 or 2 light plants Personnel/Shift 10 ea. deploy & set-up 6 ea. tend & maintain	North shore: • Services - crane, boat launch, electric power • Security - none. • Support - shelter. South shore: • Private land off Coho Loop • Service - none. • Security - none. • Support - shelter	Permit and inspection required (see CCI 06-02). North shore: Kaliforski Beach Road to Trans-Aqua sign, (1/4 mi. past Kasilof beach road). South shore: Coho Loop road to end of dirt road, beach access via ATV or off road equipment.	Same as CCI-06-02	Same as CCI-06-02

LOCATION & DESCRIPTION

IMPLEMENTATION

STAGING AREA

SITE ACCESS

SPECIAL ISSUES

RESPONSE STRATEGY

RESPONSE EQUIPMENT

RESOURCES PROTECTED

The completed GRS should address and identify:

- **Sensitive areas needing protection**
- **Response strategies to accomplish**
- **Implementation tactics**
- **Response resources necessary**
- **Available staging areas**
- **Site access**
- **Resources at risk in area**
- **Special considerations (Local Conditions)**

GEOGRAPHIC RESPONSE STRATEGIES

Another tool in the spill response toolbox.

Not prescribed actions but the best initial tactical options that can be designed in advance.



GRS webpage:

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

Geographic Response Strategies for Alaska

State of Alaska > DEC > SPAR > PERP > GRS

Geographic Response Strategies for Alaska: Homepage

This website describes the process used to develop **Geographic Response Strategies (GRS)** to protect sensitive coastal environments along the Alaska coastline. GRS are oil spill response plans tailored to protect a specific sensitive area from impacts following a spill. These response plans are map-based strategies that can save time during the critical first few hours of an oil spill response. They show responders where sensitive areas are located and where to place oil spill protection resources.

You can learn more about Geographic Response Strategies by reading our [Frequently Asked Questions](#).



What we seek to avoid...



QUESTIONS?