

# KODIAK SUBAREA CONTINGENCY PLAN

## GEOGRAPHIC RESPONSE PLANS

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## **GEOGRAPHIC RESPONSE PLANS: INTRODUCTION**

The purpose of a Geographic Response Plan (GRP) is to guide initial response and protection of nearshore areas by prioritizing resources to be protected and outlining containment and recovery strategies for specific geographic areas. GRPs are used to minimize confusion during the initial response by prescribing strategies for equipment deployment and resource protection in pre-designated, environmentally sensitive areas. The GRPs, once adopted as part of the Subarea Contingency Plan, serve as direction to be followed by the federal, state, local, and responsible party on-scene coordinators when a spill threatens the area(s) covered by a GRP. Due to seasonal variations and incident specifics, a GRP should be “reviewed” at the outset of a spill to ensure it does not require modifications prior to implementation.

The GRPs for the Kodiak Subarea were developed based on the environmentally sensitive areas protection priorities identified by Kodiak residents during the development of the Sensitive Areas portion of the KSCP. GRPs will be developed sequentially for a total of ten (10) initial sites in the subarea. Once these ten strategies have been completed (within one year of KSCP plan adoption), the Kodiak Subarea Committee and Work Groups will develop a second set of ten sites for development of additional GRPs (See Reference Map, Figure E-1). The ten sites for which initial GRPs shall be developed are:

1. Kitoi Bay Hatchery
2. City of Kodiak - Buskin River
3. Akhiok - Snug Cove/Moser Bay
4. Karluk - Karluk Lagoon
5. Larsen Bay - Brown's Lagoon
6. Old Harbor - Sitkalidik Strait/Barling Bay
7. Ouzinkie - west side Spruce Island
8. Port Lions - Settlers Cove
9. Katmai/Peninsula - Geographic Harbor
10. Tugidak Island

Each GRP includes a site description, reference map, logistical support information, and protection strategies. Each site description includes information such as physical features and shoreline characteristics, hydrology, currents and tides, winds, climate, seasonal considerations, wildlife concentrations, human use, and risk factors. Logistical support information includes local equipment and personnel availability, local facilities and services, site access, staging areas, air support, volunteer resources, local experts and approximate response time for delivery of equipment from other areas. General protection strategies identify booming priorities and focus on diverting and containing spilled product away from sensitive areas. Skimming, cleanup, containment and recovery strategies will also be developed for each GRP.

A GRP is a living document and should be updated and amended to reflect any localized environmental changes or additional information gathered through drills, scenarios or actual spill response.

*Figure E-1: Reference Map*

# GRP: PART ONE - KITOI BAY HATCHERY SITE PROTECTION STRATEGY

## A. SITE DESCRIPTION

1. **Location.** Kitoi Bay Hatchery (KBH) is located on the east side of Afognak Island in the northwest portion of Izhut Bay at the head of Big Kitoi Bay. Kitoi Bay Hatchery is a salmon hatchery facility.
2. **Shoreline Characteristics.** Kitoi Bay has a sheltered, rocky shoreline.
3. **Currents, Tides And Winds.** Northwest winds dominate. Contact hatchery for information on current weather. Consult Kodiak tidetable for information on tides. Tidal range in Kitoi Bay may be as much as 15 feet.
4. **Climate & Seasonal Considerations.** Hatchery-related activities most vulnerable to spill damage include fry rearing and release, terminal harvests, and egg takes. The timing of these activities varies by species, however spring and summer tend to be the most critical and vulnerable seasons. "Peak" salmon egg take time at the hatchery is between August 15 and September 15.
5. **Wildlife Concentrations.** Marine bird nesting during spring, summer and fall for black oystercatcher, glaucous-wing gull, pelagic cormorant, tufted puffin, horned puffin, pigeon guillemot. Spring and summer herring spawning. Spring and summer bald eagle nesting. Sea otter concentrations year-round.
6. **Human Use.** Kitoi Bay Hatchery is a commercial fish hatchery funded by the Kodiak Regional Aquaculture Association (KRAA). The hatchery produces pink, chum, sockeye and coho salmon for the enhancement of Kodiak commercial salmon fisheries and to create additional fisheries along the Kodiak road system. The hatchery has a small bunkhouse with lodging for 17 people and kitchen facilities.
7. **Risk Factors.** Upland fuel storage at hatchery (12,000 gallon capacity diesel tank).
8. **Site Access.** Float plane access only. Logging roads from Big Sandy and Ben Thomas Logging Camps pass near KBH but do not access facility.
9. **Staging Areas.** Small dock with crane (1500 to 3000 lb. capacity) and backhoe could be used for equipment staging. Limited storage space at facility.

**B. LOGISTICAL SUPPORT**

1. **Equipment.** The following response equipment is maintained at Kitoi Bay Hatchery:

<b>Equipment Type</b>	<b>Quantity</b>
12" x 14" Containment Boom	6,000 feet
Tow Leg Tow Bridles	8
60 lb. Danforth Anchor Systems	10
100 lb. Danforth Anchor Systems	2
Viscous Sweep	8,000 feet
ISO Connexes	6
Chain & Chain Staples	
Geotextile for Log Boom	
Clip-on weights for Geotextile Boom	320

2. **Facilities/Services/Additional Resources.** Kitoi Bay Hatchery is a fish hatchery operated by the Kodiak Regional Aquaculture Association. There is no road access, and support facilities are extremely limited. The hatchery does have a seaplane ramp and a forklift (1500 to 3000 lb. capacity). Kitoi Bay Hatchery is included in the Community Profiles portion of the Resources Section of this plan.

**C. PROTECTION STRATEGIES**

<b>Location</b>	<b>Objective</b>	<b>Equipment</b>	<b>Implementation Strategy</b>
Kitoi Bay Jaws (.65 NM/3953 ft dist. from north to south) See Fig. E-1.	Deploy log boom as a buffer to prevent debris from entering the inner portion of the bay.	-57 trees -Geotextile -Chains -Chain staples -Clip-on weights for Geotextile	1. Cut down/limb 57 trees (if none avail.) & cut to 70 ft. seg 2. Join trees end-to-end leaving a 1 ft. gap using the chains and chain staples. (Except for the center; use 2 chains & 2 shackles to make vessel gate.) 3. Secure logs to each end of bay, drape geotextile over logs and attach clip-on weights. 4. Use 2 anchors on boom, each placed approx. 1/3 out from either shore.
Little Kitoi Bay (small bay next to Big Kitoi Bay) See Fig. E-2.	Prevent oil/debris from entering Little Kitoi Bay	-1400 feet of boom (in 100' sections) -tow bridles -tow vessel	1. Locate & open connex marked Little Kitoi Bay 2. Remove tow bridles and pull out seven 100' seg. boom. 3. Haul the seven sections of boom with hatchery forklift down to seaplane ramp & unpackage boom. 4. Flake boom out back & forth along water's edge, slide connectors together & pin them in place. 5. Attach tow bridles to each end of the boom and tow to Little Kitoi Bay. 6. Drive pitons into the shoreline rock and attach shackles to the pitons. Place tow rope through the shackle and pull tow bridle to w/in 1 ft. of the shackle (south shoreline). 7. Repeat step #6 on north shoreline 8. Repeat steps 1 through 7 to install a second line of boom approx. 20 yds. forward of the first boom.

<p>Big Kitoi Bay (actual site of hatchery) See Fig. E-3.</p>	<p>Prevent oil/debris from entering Big Kitoi Bay and impacting fish hatchery</p>	<p>-Approx. 3600 ft. of boom -Tow bridles -6 x 60-lb. anchors -2 vessels -Viscous sweep</p>	<ol style="list-style-type: none"> <li>1. Locate &amp; open connexes marked Big Kitoi Bay.</li> <li>2. Remove tow bridles &amp; haul boom to seaplane ramp (approx. 1830 ft. boom).</li> <li>3. Flake out boom, slide together connectors &amp; pin in place.</li> <li>4. <i>Carefully</i> drag boom offshore using tow boat (w/people onshore to help) - Boom must not twist.</li> <li>5. Tow boom to anchor point on southern shore at entrance to Big Kitoi Bay. Drive 2 pitons into shoreline rock &amp; attach shackles to pass towline through. Pull tow bridle up to 1 ft. from shackle.</li> <li>6. Attach three 60-lb. Danforth anchors to outside of boom.</li> <li>7. Use tow vessel to tow loose end of boom to the point which separates Big &amp; Little Kitoi Bays. There, drive 2 pitons into rock &amp; attach shackles. Pass towline through &amp; pull tow bridle up to 1 ft. from shackle.</li> <li>8. Tow vessel &amp; <i>Puffin</i> (hatchery boat) set anchors apart by 1/3 distance of the boom beginning on the <b>south end</b> of the bay &amp; working toward the north. Open boom @ north shoreline point to let vessels through.</li> <li>9. Repeat steps 1 through 8 for a second row of boom with the land connection point on the south shore 25 yds. closer to hatchery &amp; same north shoreline point as first boom.</li> <li>10. With both booms in place, deploy viscous sweep behind booms. Tie sweep to shoreline anchor points.</li> </ol>
<p>Skimming and Recovery</p>	<p>Collect and recover as much spilled oil and oily debris as possible.</p>	<p>No skimmers in KBH equipment packages.</p>	<p>Skimming/recovery operations should be initiated as soon as possible using equipment from external sources. Skimming equipment and temporary storage containers may be obtained in Kodiak and transported to KBH by float plane, boat or helicopter from one of the sources indicated in the Resources Section, part two, of this plan.</p>
<p>Cleanup and disposal.</p>	<p>Dispose of all recovered oil and oily debris.</p>		<p>Recovered oil and oily debris should be transferred to the City of Kodiak for proper disposal. See disposal guidelines in Response Section of this plan.</p>

*Figure E-2: Kitoi Bay Jaw Log Boom Deployment*

*Figure E-3: Little Kitoi Bay Boom Deployment*

*Figure E-4: Big Kitoi Bay Boom Deployment*

## GRP: PART TWO - BUSKIN RIVER SITE PROTECTION STRATEGY

### A. SITE DESCRIPTION

1. **Location.** St. Paul's Harbor north of the Kodiak State Airport.
2. **Shoreline Characteristics.** Sand and gravel beach.
3. **Currents, Tides & Winds.** Northwest winds prevail. Consult local charts for tides. General tide range is 12 feet.
4. **Climate & Seasonal Considerations.** The Buskin River supports runs of all five Alaskan salmon species as well as steelhead trout. Salmon runs begin in May and occur continuously through November.
5. **Wildlife Concentrations.** In addition to the salmon and steelhead populations, the Buskin River has seabird and eagle concentrations as well as occasional brown bear.
6. **Human Use.** Road accessibility and healthy salmon runs make the Buskin River one of the most popular recreational fishing sites on Kodiak. Human use is high throughout the summer months. There are public campsites adjacent to the Buskin and a picnic area at the mouth which is often used for small gatherings.
7. **Risk Factors.** The Buskin River is directly south of a small boat harbor, two large fuel facilities, several fish processing plants, and a major container ship dock. All of these activities present a risk for oil or hazardous substance spills. The river is immediately adjacent to the State Airport and vulnerable to pollution caused by airplane crashes. Depending on the winds and prevailing currents, the Buskin is also vulnerable to spills originating in Women's Bay and from the Coast Guard fuel facility.
8. **Site Access.** Mouth of Buskin River accessible from Kodiak road system (Rezanof Drive to Buskin River Road – follow to end) and also by vessel from boat harbor and Women's Bay. Limited vehicle access to mouth but easy to access on foot.
9. **Staging Areas.** Parking lot and picnic area near mouth of river. Closest storage area is connex boxes in crash harbor. Warehouse space nearby (approx. 1 mile away) at State Airport facilities.

## **B. LOGISTICAL SUPPORT**

1. **Equipment.** There is currently no municipally-owned pollution response equipment staged at the Buskin River. However, the Buskin is located close to several potential equipment sources, several of which are private industry resources which may not necessarily be available in all scenarios. Regional response equipment resources which could be used to implement the Buskin River GRP response strategies include the following.

- **USCG MSD Kodiak:** 2000' 10" x 16" boom  
**Bldg. 93 Warehouse** 1000' 3" x 6" boom  
10 ea. 22-lb. boom anchors  
10 ea. 40-lb. boom anchors  
sufficient line to deploy boom and anchors  
4 ea. tow bridles  
skiffs
- **USCG ISC Kodiak\*\*** 2000' 6" x 12" boom  
**Crash Harbor** sufficient anchors/line to deploy  
**@ end of Airport runway**
- **Kodiak Oil Sales\*\*** Misc. boom & anchors (call to check amounts)  
skiffs  
tow bridles
- **Petro Marine\*\*** Misc. boom & anchors (call to check amounts)  
skiffs  
tow bridles

\*\* Indicates industry-owned equipment which may not be immediately available for release.

2. **Facilities/Services/Additional Resources.** Because the Buskin River is road system accessible and located close to both Women's Bay and St. Paul's Harbor (as well as several fuel transfer facilities and the Coast Guard Base), response equipment should be readily accessible to execute this GRP. Generally, boom may be transported either by skiff or by truck depending on incident specifics. The USCG ISC equipment stored at the crash harbor is physically closest to the Buskin River. There are significant logistical support resources located at the Coast Guard Base and in the City of Kodiak. Consult the Resources section of this plan for specific information.

**C. PROTECTION STRATEGIES**

<b>Location</b>	<b>Objective</b>	<b>Equipment</b>	<b>Implementation Strategy</b>
1. Mouth of Buskin -- oil coming from the North (consult trajectory)	Deflect oil away from the mouth of the Buskin.	-2000' boom in 500' sections (6" x 12" or larger for rough weather; 3" x 6" for extremely calm seas) -800' line in 100' sections -8 to 16 total anchors (at least 20 lb.) -skiff for deployment -tow bridles	1. Procure boom, anchor, tow bridles, line and skiffs from one of the sources listed on the previous page. 2. Transport response equipment to mouth of Buskin either by skiff or truck. 3. Tie off 100' of line and an anchor to each end of each of the 4 segments of boom (500' long each). Additional anchors necessary in rough weather (wind/current). 4. Beginning at the high tide line on the beach approximately 1500' north of the mouth of the Buskin, deploy the first 500' section of boom by anchoring one end on the beach. 5. Use the skiff to tow the other end out at approximately a 45 degree angle from the shore (see diagram), stretch it tightly & drop the anchor to hold. Adjust the angle of boom to account for high/low winds or current to prevent entrainment. 5. Once the angle of the first boom segment is established, deploy the remaining three segments of boom in the same manner as the first, beginning approx. 50 ft. shoreward & 100 ft. south of the seaward end of the first boom segment (see diagram). 6. Monitor the boom as oil hits to ensure that angles are correct. Be aware of changes in tides, winds, and currents.
2. Mouth of the Buskin -- oil coming from the South (Chiniak or Women's Bay)	Deflect oil away from the mouth of the Buskin	-2000' boom in 500' sections (6" x 12" or larger for rough weather; 3" x 6" for extremely calm seas) -800' line in 100' sections -8 total anchors (at least 20 lb.) -skiff for deployment -tow bridles	1. Follow steps 1- 3 above. 2. Beginning at the high tide line on the beach approximately 1500' south of the mouth of the Buskin, deploy the first 500' section of boom by anchoring one end on the beach. 5. Use the skiff to tow the other end out at approximately a 135 degree angle from the shore (see diagram), stretch it tightly & drop the anchor to hold. Adjust the angle of boom to account for high/low winds or current to prevent entrainment. 5. Once the angle of the first boom segment is established, deploy the remaining three segments of boom in the same manner as the first, beginning approx. 50 ft. shoreward & 100 ft. north of the seaward end of the first boom segment (see diagram). 6. Monitor the boom as oil hits to ensure that angles are correct. Be aware of changes in tides, winds, and currents
Skimming and Recovery	Collect/recover spilled oil & oily debris		Obtain skimmers and temporary storage containers from KOS, Petro Marine or ISC Kodiak (see Resources Section, part two) & transported by vessel to on-water response team.
Cleanup and disposal.	Dispose of recovered oil and oily debris.		Recovered oil and oily debris should be transported via truck or vessel to appropriate facility. See disposal guidelines in Response Section of this plan.

*Figure E-6: Buskin River Boom Deployment for spill moving toward Buskin from the North*

*Figure E-7: Buskin River Boom Deployment for spill moving toward Buskin from the South (Women's Bay or Chiniak Bay)*