

Copper River Delta Flats GRS Development Project

*- PWSRCAC Board Meeting -
May 7, 2026*

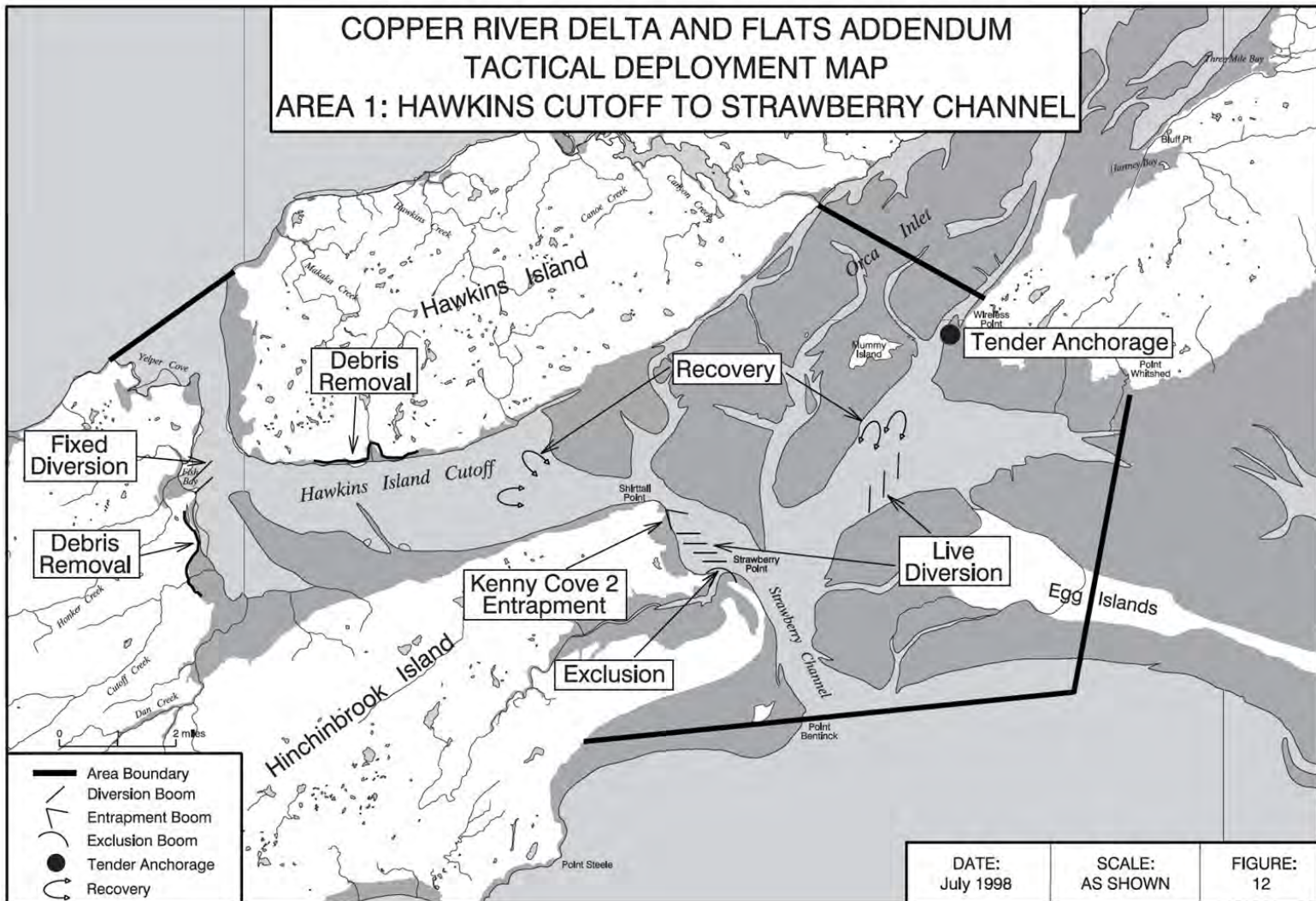


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Project Scope & Context



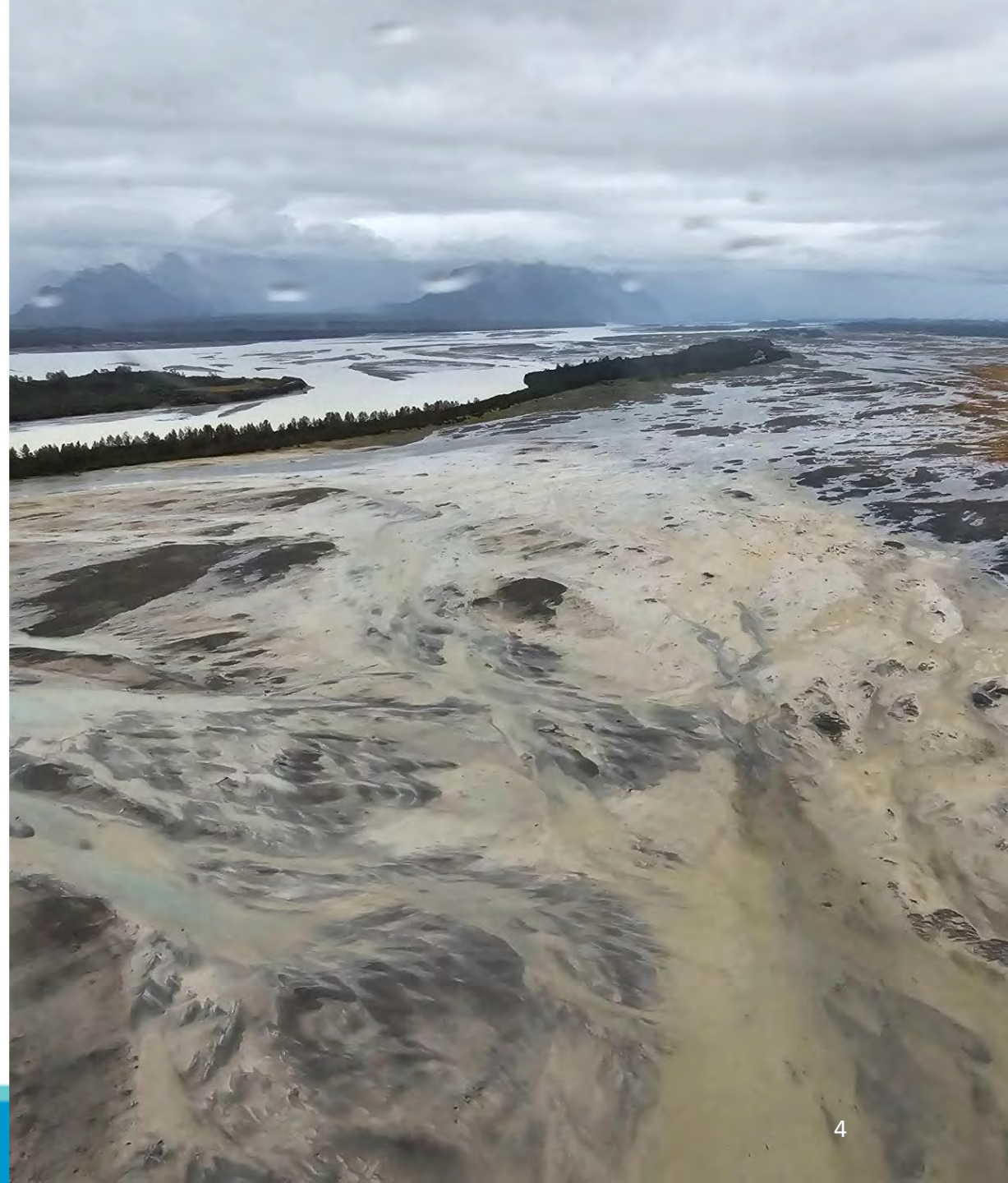
- Workgroup process to identify and build GRS across area
- Draw from 1999 addendum as appropriate
- Site visits and outreach in Cordova
- Work with ADEC on GRS format



Map created: April 2025

Accomplishments

- **PROCESS:** Used established Alaska GRS development process to fill a gap in coverage
- **COLLABORATION:** Built partnerships and work products through shared understanding and purpose
- **ADAPT:** Modify and adapt fishing operations for spill response



PROCESS: Renewed GRS development & identified opportunities for GRS enhancement



Photo: boat survey work September 8, 2025 / Robida

CRDF GRS Development Process



Workgroup Participation

- **Steering Committee (PWSRCAC, ADEC, USCG) planned WG meetings, reviewed agendas, guided process**
- **>30 organizations participated**
- **7 full WG meetings plus side meetings**
- **25-35 people average on workgroup calls**

Organization	
Alaska Department of Environmental Conservation (ADEC)	NOAA Fisheries
Alaska Department of Fish and Game (ADFG)	NOAA Sea Grant/ Alaska Sea Grant
Bureau of Land Management (BLM)	National Park Service (NPS)
Bureau of Ocean Energy Management (BOEM)	Native Village of Eyak (NVE)
Chugach Alaska Corporation	Noble Ocean Farms
Chugach Regional Resource Commission (CRRC)	Nuka Research
City of Cordova	Oil Spill Recovery Institute (OSRI)
Conoco Phillips (representing PWS shippers)	Prince William Sound Regional Citizens' Advisory Council (PWSRCAC)
Cook Inlet Regional Citizens' Advisory Council (CIRCAC)	PWS Science Center
Copper River Watershed Project	Ship Escort Response Vessel System (SERVS)
Cordova District Fishermen United (CDFU)	Tatitlek Corporation
Department of Interior (DOI)	Tatitlek Village
Department of Natural Resources (DNR) - Office of History & Archaeology	U.S. Coast Guard (USCG)
DNR - State Abatement and Impaired Lands	U.S. Department of Agriculture (USDA)
Environmental Protection Agency (EPA)	U.S. Fish and Wildlife Service (FWS)
Eyak Corporation	U.S. Forest Service (USFS)
National Oceanic and Atmospheric Administration (NOAA)	Weston Solutions (EPA contractor)

Open House Workshops

KEY THEMES:

- Unique location and environment
- Strong interest in project from a diverse crowd
- Local dedication, experience, and knowledge
- New technologies bring more safety
- Prevention is *still* best



Cordova Field Visits



KEY THEMES:

- Response possible, but needs to be adapted to area
- Local knowledge vital for operations
- New technologies have increased safety and response potential
- Incremental gains



LOCAL KNOWLEDGE

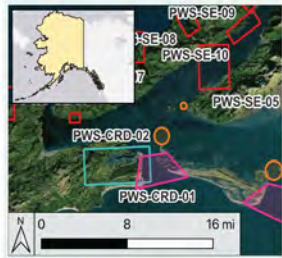
- valuable and unique skills-

- **Local familiarity with currents and navigation**
- **Locals observing changes in the landscape and in wildlife habits and patterns**
- **Approx 200 vessels on contract with SERVS who do spill response training annually**
- **Recognize area is dynamic and response not always possible**

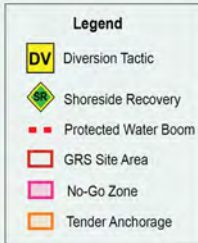
COLLABORATION: Built 9 GRS's and Tactics Summary via collaborative effort



Two traditional GRS sites...



Oblique aerial photo of Boswell Bay mouth, looking NW (2007). Credit: Alaska Shorezone



Geographic Response Strategies for Prince William Sound Geographic Zone, Copper River Delta GRS Zone

Boswell Bay, PWS-CRD-01



Map not for navigational use.

Created 2/12/2026 by PWSRCAC, Nuka Research, DEC

Prince William Sound Zone Geographic Response Strategies

DRAFT March 10, 2026

Tactic ID	Location & Description	Response Strategy	Implementation	Response Resources	Staging Area	Site Access	Resources Protected (months)	Special Considerations
DV-01	<p>Boswell Bay</p> <p>Mouth of bay</p> <p>Lat: 60.409 Lon: -146.127</p>	<p>Diversion</p> <p>Divert and collect oil from entering bay and entering mudflats and salmon streams on the flood tide.</p>	<p>Deploy 1,000 ft of protected-water boom across bay mouth, with shore anchors on each end and remaining anchors set every 200—300 feet.</p> <p>Tend throughout the tide. Readjust boom angle and number of anchors as needed based on environmental conditions to reduce entrapment.</p> <p>Remove debris where necessary prior to boom deployment.</p>	<p>Deployment Equipment</p> <p>1,400 ft. protected-water boom 7 ea. anchor systems 2 ea. shore anchor systems</p> <p>Vessels</p> <p>2 ea. class 4/5/6</p> <p>Personnel/Shift</p> <p>2 ea. vessel operators 4 ea. general techs</p> <p>Tending Vessels</p> <p>1 ea. class 3/4/5/6</p> <p>Personnel/Shift</p> <p>1 ea. vessel operator 2 ea. general techs</p>	<p>Cordova</p> <p>Tender anchorage</p> <p>Sand bar/landing strip (low tide)</p>	<p>Via marine waters</p> <p>NOAA Chart 16709</p> <p>Private residences and camps along the southwest of Boswell Bay.</p> <p>ATV trails</p> <p>Permission may be needed for private land access.</p>	<p>Birds: seabird nesting (Apr–May), shorebird migration (mid-April – mid-May), waterfowl (year-round, spring and fall peaks), Bald eagle nesting (Apr–Aug)</p> <p>Marine mammals: Sea otters (year-round), harbor seals, Steller sea lions, porpoise, and killer whales, gray whale migration (spring), humpback/fin whale (summer)</p> <p>Terrestrial & Aquatic mammals: blacktail deer, bears, wolves, moose (year-round)</p> <p>Fish and Invertebrates: All five salmon species present; spawning and migration (May–Sep), halibut, Dungeness crab, razor clam, kelp, eelgrass</p> <p>Human use: Subsistence harvesting, commercial and recreational fisheries, recreation and tourism</p>	<p>Vessel master should have local knowledge.</p> <p>Navigational hazards: depth limitations at low tide, submerged and emergent rocks. Private buoys mark slough channels to shoreline areas with camps or residences.</p> <p>Typically floods into the Hawkins Cutoff and Orca Inlet through Strawberry Channel. Ebbs through NW entrance and Strawberry Channel.</p> <p>Bear guard may be required.</p> <p>Communications: Cell coverage, marine VHF (channel 6 for hailing)</p> <p>FOSC Historic Properties Specialist should monitor on-site operations.</p>

PWS-CRD-01

ADAPT: Modify and adapt fishing routines for spill response



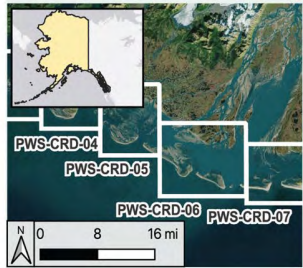


TENDER SITE GRS's - model fishing norms-

- **Tender anchorages behind barrier islands can serve as response hubs**
- **Tender anchorages *less* tidally influenced, but operations will still be tidally driven and weather dependent**
- **Use channels for transit and avoid high energy “no-go” zones**
- **Deck-load response equipment**

Seven “Tender Anchorage” GRS sites...

Grass Island and Kokinhenik, PWS-CRD-06



Aerial photo looking west between Grass Island Bar and Kokinhenik Bar (2007). Credit: Alaska Shorezone

Legend

- Free Oil Recovery (Tender Based)
- No-Go Zone
- Tender Anchorage
- Traditional GRS Site Area
- Zone-based Nearshore Strike Team

Geographic Response Strategies for Prince William Sound Geographic Zone, Copper River Delta GRS Zone



Map not for navigational use.

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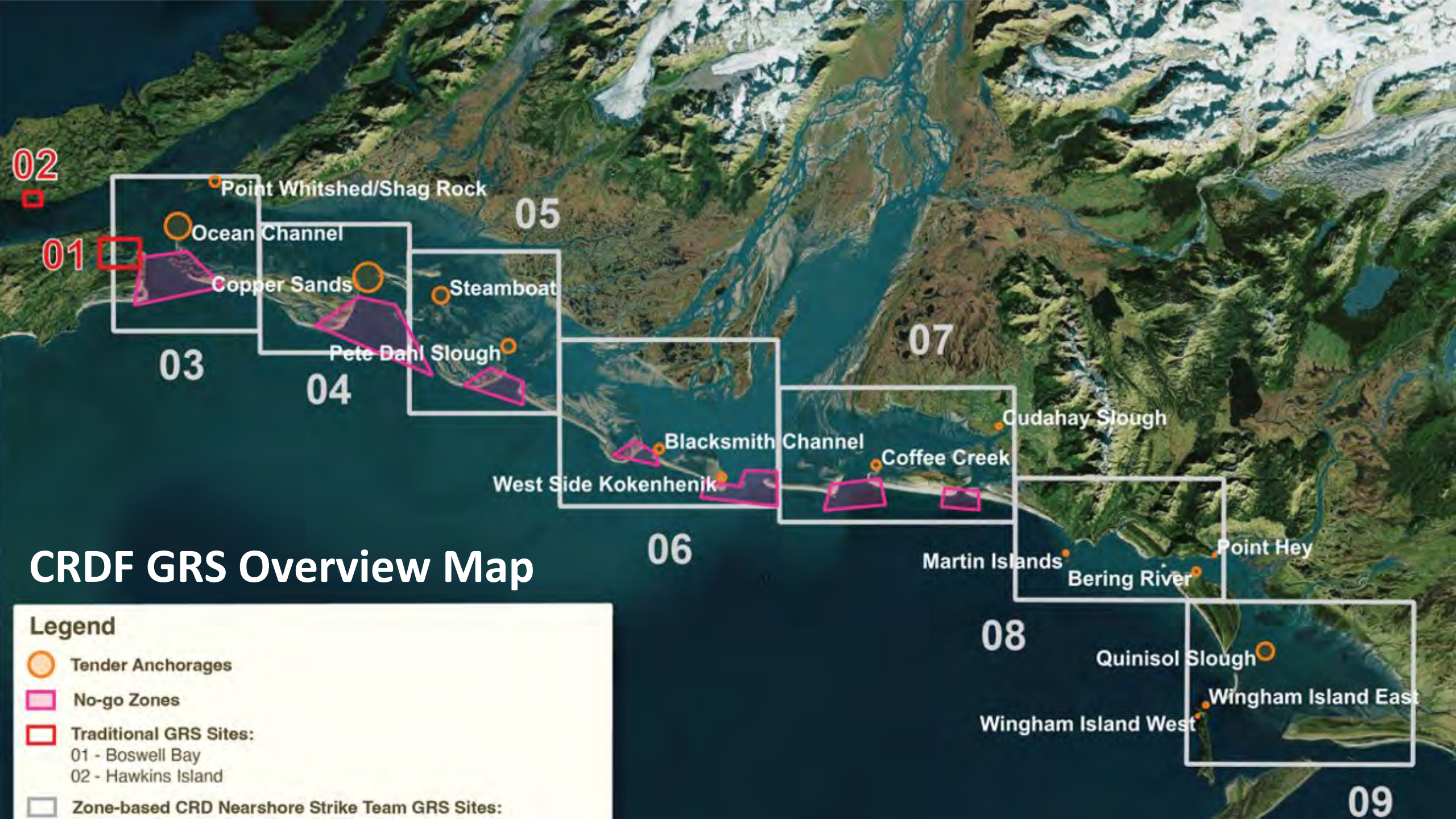
Prince William Sound Zone Geographic Response Strategies

DRAFT March 10, 2025

Tactic ID	Location & Description	Response Strategy	Implementation	Response Resources	Staging Area	Site Access	Resources Protected (months)	Special Considerations
FO-01	Grass Island Bar/ Kokinhenik Bar Lat: 60.274 Lon: -145.243	Free Oil Recovery (Tender-based) Contain and recover spilled oil on the water in the nearshore environment based on the CRD tender-based nearshore free oil recovery tactic (see CRD GRS Tactical Supplement)	Deploy CRD tender-based on-water recovery task force(s) to mimic the tender-based configurations used by the CRD fishing fleet. On-water free oil recovery vessels confine operations to inside bars, avoiding “no go” area. Tenders with deck-loaded temporary storage devices await offload of recovered oil in designated tender anchorages.	Deployment 1 or more on water skimming systems Vessels 1 ea. class 3/4 Personnel/Shift 1 vessel operators 2 ea. general techs Tending Vessels 1 ea. class 4/5/6 Personnel/Shift 1 ea. vessel operator 2 ea. general techs	Cordova for launching on-water recovery vessels and tenders Tender anchorages for offloading recovered oil	Via marine waters Seasonal small-vessel launch access may be available at Flag Point (mile 27) along the Copper River Highway NOAA Chart 16013 and 16723	Birds: seabird nesting (Apr–May), shorebird migration (mid-April – mid-May), waterfowl (year-round, spring and fall peaks), Bald eagle nesting (Apr-Aug) Marine mammals: Sea otters (year-round), harbor seals, Steller sea lions, porpoise, and killer whales, gray whale migration (spring), humpback/fin whale (summer) Terrestrial & Aquatic mammals: blacktail deer, bears, wolves, moose (year-round) Fish and Invertebrates: All five salmon species present; spawning and migration (May–Sep), halibut, Dungeness crab, razor clam, kelp, eelgrass Human use: Subsistence harvesting, commercial and recreational fisheries, recreation and tourism	Vessel master must have local knowledge and experience navigating CRD. Navigational hazards: Tide-dependent access; very shallow at low tide. Strong CRD freshwater outflow produces very strong ebb currents and unpredictable eddies within the main channels. Grass Island and Kokinhenik Channel entrances are exposed to strong winds and rough sea conditions Tenders and on-water recovery vessels must take care in transiting to/from GRS site. Tender access may be more tide-dependent due to draft limitations. Communications: Cell coverage, marine VHF (channel 6 for hailing)


PWS-CRD-06







CRDF GRS Overview Map

Legend

 Tender Anchorages

 No-go Zones

 Traditional GRS Sites:
01 - Boswell Bay
02 - Hawkins Island

 Zone-based CRD Nearshore Strike Team GRS Sites:

Tactics Supplement...

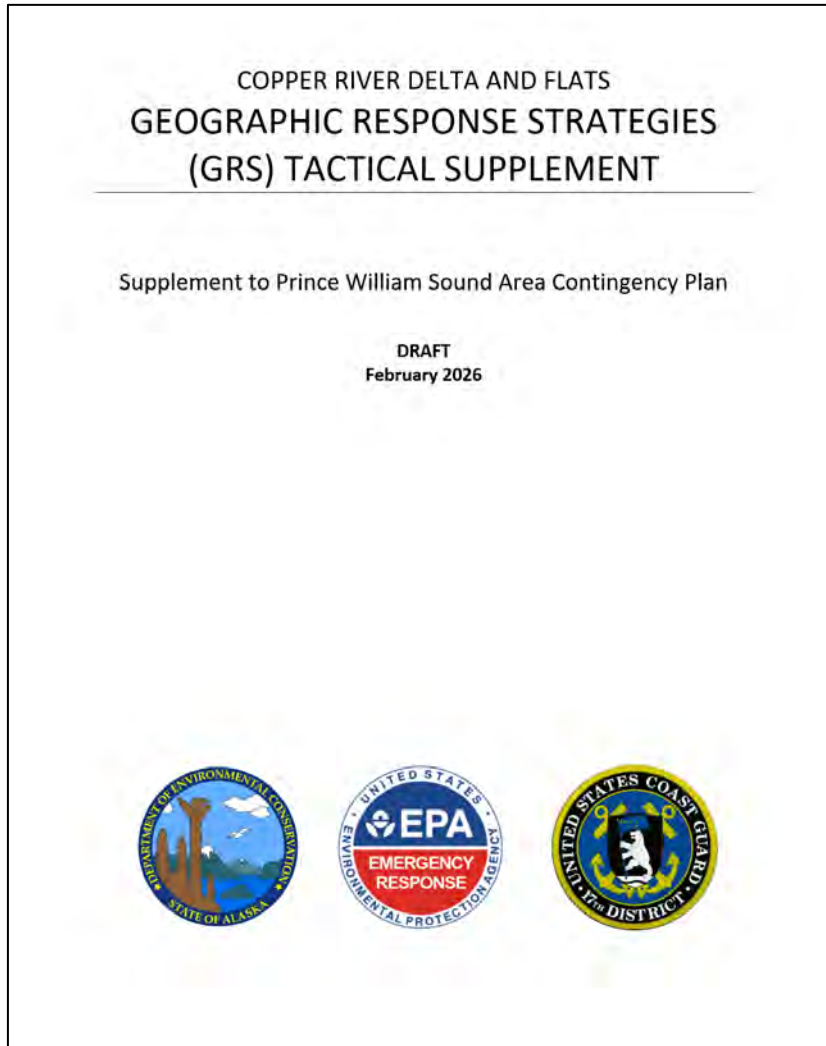


Figure 5. Generic tender vessel with deck-loaded storage tank for offloading oil collected by CRDF Tender-based Nearshore Free Oil Recovery Strike Teams (STAR Manual)



NAVIGATION SPECIFICS

- details captured -

- **Channel markers reset annually and removed seasonally**
 - **Main channel maintained by USCG**
 - **Stick/Home and Racetrack channel funded and marked by CDFU**
- **Use of VHF channel 6 vs 16**
- **Local knowledge and familiarity required to operate in area**



NAVIGATION SPECIFICS - locally produced maps -

- Navigation tools continue to evolve
- Pinnacle Geo is local company building maps annually. Used by vast majority of fleet
- Historically have been sold on “Avensa” platform.
 - Working on 2026 maps
 - Distribution for this year?

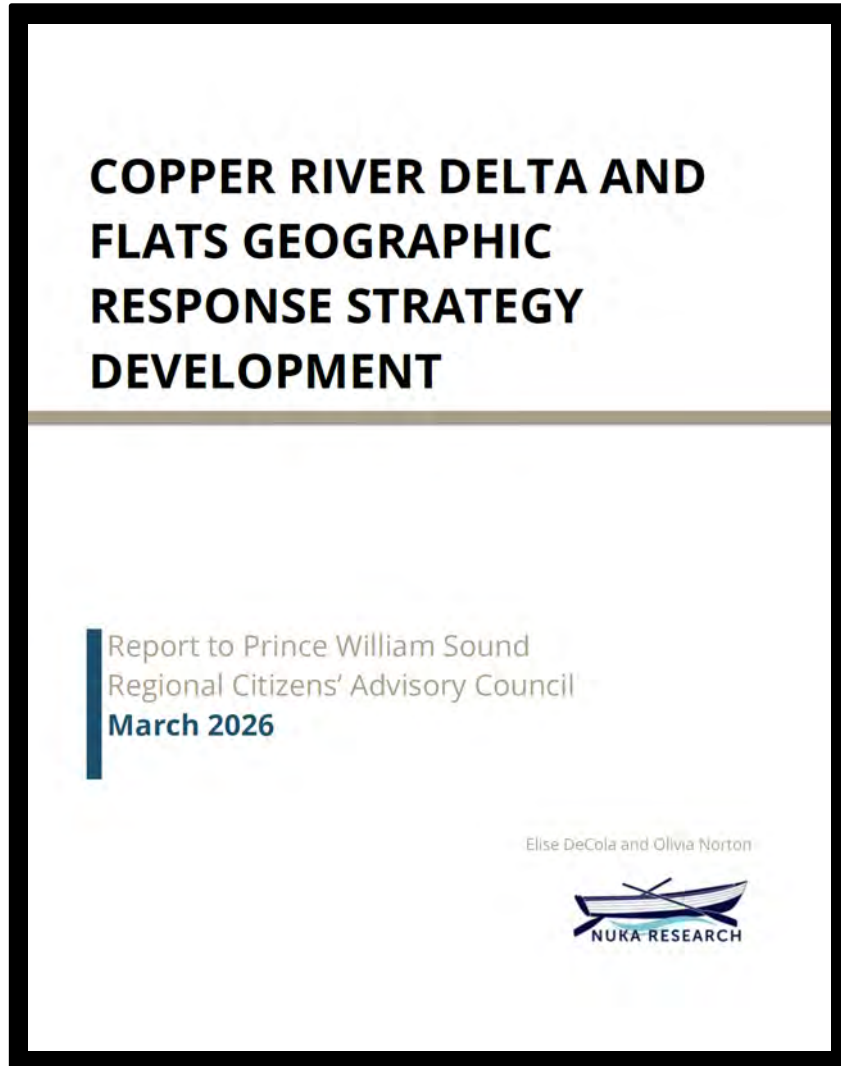


NEXT STEPS

- crossing the finish line -

- **Capture new “Avensa” storefront in Tactics Summary. Give ADEC finalized materials. ETA is end of May.**
- **PWS Area Committee approval of workgroup-built materials**
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- **Board approval of Summary Report**
- **Continue to give project visibility**

Final Report to PWSRCAC Board



Report captures process and other information not in GRS or Tactics Summary

- Why did we do this project
- Who participated
- Workgroup process
- Zone concept
- Future work recommendations



IMPROVEMENTS MADE

- a good process -

- **Methodical workgroup process well attended and appreciated**
- **Local knowledge so vital to this project and an actual response**
- **Response challenging and likely small in scale, but not impossible**
- **Planning improvements made**
- **Prevention is still best**

Questions or Comments?



Thank You!!

Request of PWSRCAC Board...

Accept the amended report titled “Copper River Delta and Flats Geographic Response Strategy Development” by Nuka Research and Planning Group, LLC, dated March 2026, as meeting the terms and conditions of the contract, and for distribution to the public.