

GEOGRAPHIC RESPONSE PLANNING FOR THE COPPER RIVER DELTA AND FLATS

Report to Prince William Sound
Regional Citizens' Advisory Council
March 2022

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Mouth of the Copper River, 2004 (photo: Tim Robertson)

The opinions expressed in this PWSRCAC-commissioned report are not necessarily those of PWSRCAC.

Acronyms

ACP	Area Contingency Plan
ADEC	Alaska Department of Environmental Conservation
APSC	Alyeska Pipeline Services Company
BPOSC	BP Oil Shipping Company
CDFU	Cordova District Fishermen United
COA	Conditions of Approval
COTP	Captain of the Port
CRD&F	Copper River Delta and Flats
CRD&F Plan	Copper River Delta and Flats GRS (document resulting from Settlement Agreement)
DOI	U.S. Department of Interior
EPA	U.S. Environmental Protection Agency
GOA	Gulf of Alaska
GRS	Geographic Response Strategy
MOA	Memorandum of Agreement
NOAA	National Oceanic and Atmospheric Administration
OPA 90	Oil Pollution Act of 1990
OSRO	Oil Spill Removal Organization
PRAC	Primary Response Action Contractor
PWG	Project Work Group
PWS	Prince William Sound
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
RCP	Regional Contingency Plan
RPG	Response Planning Group
SCP	Subarea Contingency Plan
TAPS	Trans Alaska Pipeline System
Tanker C-plan	Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan
UFA	United Fisherman for Alaska
USCG	U.S. Coast Guard

Executive Summary

Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) contracted Nuka Research and Planning Group, LLC and Nielsen Koch, PLLC to review the history of the development of geographic response strategies (GRS) for the Copper River Delta and Flats (CRD&F) area east of Prince William Sound. This area hosts numerous species, cultural sites, and important fisheries. It is also a challenging operational area, with high energy beaches, shallow tidal waters and changing channels, barrier islands, and braided river drainages.

The CRD&F was the focus of a 1995–1998 effort by the Cordova District Fishermen United (CDFU) and United Fishermen of Alaska to improve response planning for the area. A CRD&F-specific response plan was developed in 1998–1999 due to a contentious set of proceedings around the first approval under new regulations of a State-mandated oil spill response plan for Trans Alaska Pipeline System tankers transiting Prince William Sound. The CRD&F Plan document was adopted into the government response plan for Prince William Sound and vicinity in 1999, as had been agreed in a legal settlement among the fisheries organizations, oil shippers, and Alaska Department of Environmental Conservation (ADEC). However, the CRD&F Plan was left out of later versions of government plan and is no longer included in any response plans accessible today.

While much of the information in the 1999 CRD&F Plan duplicates information in current versions of both government and company response plans today, there are also many suggestions based on local knowledge of the area that are not currently available to responders. No CRD&F GRS were ever developed through the statewide process that also began in the late 1990s. That process resulted in the development of hundreds of GRS along most of the coast of Alaska that were adopted into government response plans.

Based the research conducted for this project and our own experience with the issues, the authors conclude that:

1. Response strategies identified for the CRD&F should be improved upon and made available to responders there.
2. The CRD&F Plan has information that is potentially as useful as other GRS and should be included in the statewide process for testing and improving GRS in the future or added to the Prince William Sound (PWS) Tanker Plan.
3. Caution should be taken regarding the incorporation of materials by reference within important plan documents.
4. Local knowledge is critical to safe operations in the CRD&F and opportunities should be sought to ensure the CRD&F is adequately covered in the PWS Area Contingency Plan and Alyeska Pipeline Service Company's (APSC) Ship Escort/Response Vessel system (SERVS) fishing vessel trainings.

5. The Gulf of Alaska Agreements between today's shippers and APSC should be shared with ADEC, CDFU, and PWSRCAC

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GEOGRAPHIC RESPONSE PLANNING FOR THE COPPER RIVER DELTA AND FLATS

White Paper

March 2022

1. Introduction and Background

This white paper describes the development of geographic response strategies (GRS) for the Copper River Delta and Flats (CRD&F). The purpose of this project was to capture the history of developing GRS strategies in the CRD&F vicinity and characterize the current status of information related to maximizing response preparedness for this sensitive region.

Nuka Research and Planning Group, LLC and Nielsen Koch, PLLC developed this white paper under contract to the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC). The authors' own recollections guided the review of documents kept by PWSRCAC and Nuka Research. Individuals involved in past efforts were contacted in effort to fill gaps that could not be resolved through document research alone, but given the passage of time, these participants' recollections did not provide additional insights beyond those contained in the documents themselves.

Importance of the Copper River Delta and Flats Region

Reaching the Pacific Ocean just southeast of Prince William Sound (PWS), the Copper River has the distinction of being one of the largest rivers on the Pacific coast of North America that has not been significantly altered by dams, levees, riprap, irrigation diversions, sewers, or heavy industry (Christensen et al, 2000). The area is recognized for its productive fisheries, wildlife habitat, and cultural heritage.

The Copper River ecosystem spans some two million acres, from the peaks and glaciers of the Wrangell and St. Elias Mountains, some of the highest in North America, to the Gulf of Alaska. Its watershed is 18% glaciated, contributing to the largest sediment load—69 million tons per year—of all rivers in Alaska. These glacial sediments, visible in the satellite image used in Figure 1, spread into a 35-mile-wide alluvial fan along the Pacific coast, forming the area referred to as the delta and flats. This area is “the productive interface between the marine environment and the coastal rain forest” (ADFGc, 2021) and noted as

“one of the most biologically rich areas in the country” (The Nature Conservancy, 2007), as well as “globally significant to the conservation of biodiversity” (Cline, 2005). The CRD&F is one of seventeen State Critical Habitat Areas in Alaska, created to protect particularly rich habitats (ADFGa, 2021). The beaches, aquatic habitats, and barrier island bars provide productive foraging and breeding areas to a great diversity of land and marine mammal species (ADFGc, 2022). Photography, flightseeing, guided bear and moose hunts, and other charter tours are an integral part of the Cordova economy (Cordova Chamber, 2021).

Each spring, an estimated 12 million shorebirds, the largest gathering of shorebirds in the western hemisphere, stop along the shores of the Copper River Delta on their way to more northern nesting grounds. Late summer and fall bring the southward migration of shorebirds, waterfowl, cranes, raptors, and passerines (ADFGc, 2021). The CRD&F is designated as being of hemispheric importance by the Western Hemisphere Shorebird Reserve Network, as a “key site for shorebirds throughout their range” (WHSRN, 2021). It is also recognized as a Global Priority Important Bird Area by BirdLife International and Audubon (Audubon, 2021).

Home to the Eyak, Chugach Region People, Tlingit, and Athabascan peoples for more than 10,000 years (Native Village of Eyak, 2022), both traditional and contemporary economies depend upon the Copper River's continued health, particularly as related to subsistence, personal use, recreational, and commercial salmon fishing. “The Copper River system supports large runs of five species of Pacific salmon and their associated commercial fisheries. Copper River kings (chinook) and red (sockeye) salmon are highly prized for their quality and early arrival in west coast markets” (ADFGb, 2021). The fishery averages “\$20 million/year in direct revenue to over 500 fishing permit holders, and another \$20 million in processing and other secondary economic benefits” (Ecotrust, 2011). Personal use of the fisheries is valued in excess of \$1.5 million (Holland, 2015). Resident and non-resident sport fisheries bring in over \$5 million (Holland, 2015) and in addition provide “an important boost to the retail sector of the economy including hotels, restaurants, tackle shops, and other businesses” (Lang, 2010). “Subsistence harvest, commercial fishing, and sustainable tourism... are the lifeblood of most local residents and are directly dependent on the area's rich natural environment” (Cline, 2005).

Regulatory Context

Two types of oil spill response planning are required by the U.S. and State of Alaska statutes and regulations: (1) operator plans submitted by regulated entities under either state or federal planning requirements and (2) government response plans, developed and maintained by the Alaska Department of Environmental Conservation (ADEC), U.S. Coast Guard (USCG), and the U.S. Environmental Protection Agency (EPA). For any given area, both types of plans must be aligned so that there is clarity for all involved about the organization, management, and implementation of a response if an oil spill occurs.

This section provides a brief overview of the plan requirements and regulatory requirements related to identifying or planning for the protection of sensitive areas.

State of Alaska Oil Discharge Prevention and Contingency Regulations

In 1990, following the *Exxon Valdez* oil spill of 1989, Alaska enacted a statute that established requirements for spill prevention and response plans for vessels and facilities statewide.¹ The new law required separate planning for different elements of the Trans Alaska Pipeline System (TAPS), from the oil and gas operations on the North Slope to the tankers moving oil out of Prince William Sound. (Within PWSRCAC's responsibilities, this includes separate plans for the Valdez Marine Terminal and crude oil shipments through Prince William Sound.)

ADEC regulations require that operator contingency plans address sensitive area protection in two ways: response strategies must be described that show how there is sufficient equipment personnel, and other resources to prevent oil from entering an environmentally sensitive area or area of public concern² and a section that identifies specific sensitive areas and areas of public concern that "may suffer an impact from a spill of the applicable response planning standard volume" along with site-specific strategies for protection. The regulations list specific items that need to be provided regarding sensitive areas:

- Identification of specific sites based on mapped predictions of how a spill would spread (including consideration of local conditions and variability),
- Planned protection measures for identified sites,
- Effect of seasonal conditions on site sensitivity,
- Discussion of toxicity effects and persistence (based on type of product), and
- How sites will be prioritized.

The above required information *may* be incorporated into the operators' plan by referencing a subarea plan.³ Referencing GRS approved as part of the area planning process has become common in Alaska operator plans. However, decisions by the area planning committees – discussed below – do not alleviate this regulatory requirement on plan holders.

ADEC approved the first Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Tanker C-Plan) in 1995, under then-new regulations from the law passed in 1990 (DeCola and Robertson, 2018). The plan has been revised through subsequent renewals and amendments since then, with the most recent approval in January 2022.

Area Response Planning and Sensitive Area Protection

The requirement to have government response plans in place around the country also dates to legislation passed after the *Exxon Valdez* oil spill. From the 1990s until 2018,

¹ 18 AAC Chapter 75 (Article 4)

² 18 AAC 75.445(d)(4) and 18 AAC 75.425(e)(1)(F)(v)

³ 18 AAC 75.425(e)(3)(j)

Alaska's government response plans consisted of one Unified Plan and 10 subarea plans. In 2018, the structure changed so Alaska now has an Alaska Regional Contingency Plan (RCP) and four Area Contingency Plans (ACP). These plans are designed to meet both state and federal regulatory requirements for government response planning. Although the plan documents have changed, the basic state and federal requirements governing them have not. They are maintained by ADEC, USCG, and EPA.

Federal Regional and Area Contingency Plans were established in 33 U.S.C. 1321(j)(4) as part of the Oil Pollution Act of 1990 (OPA 90), with later details added in the National Oil and Hazardous Substances Pollution Contingency Plan regulations at 42 U.S.C. Part 300 (specifically 40 CFR § 300.210). Federal statute requires, among other things, that those responsible for Area Contingency Plans must,

Work with State, local, and tribal officials to enhance the contingency planning of those officials and to assure preplanning of joint response efforts, including appropriate procedures for mechanical recovery, dispersal, shoreline cleanup, protection of sensitive environmental areas, and protection, rescue, and rehabilitation of fisheries and wildlife, including advance planning with respect to the closing and reopening of fishing areas following a discharge. (Emphasis added; see 33 U.S.C. 1321(j)(4)(B))

Alaska's government planning requirements are established in statute by AS 46.04.210.⁴ The statute requires that the plan "take into consideration" any operator plans approved by the state under AS 46.04.030.⁵ Aside from referencing operator plans which *do* have requirements regarding sensitive area protection, as discussed above, Alaska does not have specific requirements related to the identification or protection of sensitive areas in the state statutes regarding government response planning.

For Prince William Sound, the geography of the former subarea was largely unchanged by the 2018 transition of planning areas, but the plan document itself changed significantly in format and organization under the first promulgation of the PWS ACP (Wood, 2018).

ADEC, USCG, and EPA first promulgated the PWS Subarea Plan in July 1997, with new versions in 2005 and 2014. The PWS ACP, following the current format, was promulgated in 2018, with an update in 2020.⁶

⁴ State statute refers to "Alaska Regional Contingency Plans" which is the same name now used for the overall government plan, but the state statute actually describes government response plans for specific areas (or, previously, subareas) identified in regulations.

⁵ AS 46.04.2001

⁶ With the change of subareas to areas, a single inland area was created for Alaska. While the former PWS Subarea included some inland areas, today the PWS Area only includes coastal and marine areas. This means that while the former PWS Subarea Plan was the responsibility of ADEC, USCG, and EPA, responsibility for today's PWS ACP is shared only by ADEC and USCG. (ADEC and EPA share the Inland ACP.)



Figure 1. Copper River Delta and Flats, with locations identified that are mentioned in this document (Google Earth image)

2. Adjudication Regarding the Copper River Delta & Flats (1995–1999)

The first time the shippers' Tanker C-Plan was reviewed under post-*Exxon Valdez* laws, in 1995, there was disagreement about the potential for the CRD&F region to be affected by an oil spill from a TAPS-trade tanker and the shippers' responsibility to be prepared for a response there. These issues were among several that remained unresolved at the time the Tanker C-Plan was approved, which ADEC did in October 1995. To address these unresolved issues, ADEC added several conditions of approval (COA) at the conclusion of the plan review process. The shippers, individuals, City of Cordova, Kodiak Island Borough, and two fisheries organizations requested adjudicatory hearings in objection to ADEC's action (Johnson, 1998).

This section explains the process and participants, key issues and milestones, and settlement agreement related to the CRD&F. The primary outcome was the development of a localized response plan for the CRD&F region that was incorporated into the PWS Subarea Contingency Plan in 1999. Appendix A provides a summary timeline of key events referenced.

Parties

In 1995, there were 21 companies who were "plan holders" of the first PWS Tanker C-Plan(s) under the new statute and regulations.⁷ The companies worked together through an entity called the Response Planning Group (RPG) for the purpose of submitting common plan documents to meet Alaska regulations. Representatives of BP, Arco Marine, Inc., and SeaRiver Maritime, Inc. signed on behalf of the shippers (signatories were Roger Gale, Hersh Kohut, and Gus Elmer, respectively).

The Cordova District Fishermen United (CDFU) and United Fishermen for Alaska (UFA) were among several parties requesting adjudicatory hearings at the conclusion of the 1995 Tanker C-Plan review. Jerry McCune and Theo Matthews signed on behalf of those organizations, respectively.

⁷ ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

ADEC, as the regulating agency, was a direct participant in the negotiations that were eventually resolved in a settlement agreement. Commissioner Michele Brown signed the agreement (McCune et al., 1998).

The USCG was not a signatory on the settlement agreement but chaired a workgroup that developed the CRD&F-specific response plan that was eventually incorporated into the PWS Subarea Plan.

PWSRCAC was not a signatory, nor part of the workgroup that developed the CRD&F Plan, but closely monitored the issue, conducted its own analyses, and provided extensive comments.

Issues

ADEC's 1995 Findings Document responds to comments related to a potential response in the CRD&F region. The following CRD&F-related issues were addressed there:

1. Is Alyeska Pipeline Service Company required to respond to a spill in the CRD&F region?

Yes. While state law does not explicitly require *Alyeska* to respond to a spill outside the definition of Prince William Sound that is captured in AS 46.04.030(q), the *vessel operators* are still required to respond to a spill that occurs outside defined PWS boundaries (18 AAC 75.327). The PWS shippers meet this obligation through a statement of contractual terms with Alyeska that covers state waters to just outside Hinchinbrook Entrance and through the *Gulf of Alaska agreement* which ensures their access to Alyeska's resources for the rest of the Captain of the Port Zone (ADEC, 1995). This issue is explained further in Appendix B.

2. Do the plan holders need to provide a response and protection strategy for the CRD&F as an environmentally sensitive area and area of public concern?

CDFU and UFA contended that the contingency plans must require fully planned, pre-positioned response for the CRD&F region as an environmentally sensitive area under ADEC's regulations because it is located within the Prince William Sound region of operation (Johnson, 1998).

ADEC's findings document states that,

Commentors have asserted that the Copper River Delta and Flats are an environmentally sensitive area and an area of public concern. The Department is in agreement with this assertion. However, the Department has determined after review of the applicable provisions of state law, that the plan holders would only be required to provide a response and protection strategy for the Copper River Delta and Flats if the Department determined there exists a significant probability of oil reaching this area from a spill that may in the vicinity of the normal vessel route. Since the Department cannot make a reasoned case for such an event, the Department will not require additional analysis for protection/response in the Copper River Delta and Flats other than the already completed identification of a graphical resource database. (ADEC, 1995, p. 26)

The Deciding Officer in his prehearing rulings rejected the legal contentions of CDFU concerning the necessity for a fully planned, pre-positioned response in a plan holder's region of operation irrespective of whether an area is likely to be affected by a discharge.

In its final 1995 plan approval, ADEC required in COA 8 that the PWS plan holders perform and submit oil spill trajectory analyses for two hypothetical spill events inside state waters to determine the likelihood of oil impacting the Copper River Delta or Flats. On May 29, 1996, the RPG submitted two technical documents responding to 1995 COA 8.

However, ADEC concluded that the plan holders' submittal did not satisfy COA 8 because the submitted information was insufficient to establish the likelihood of the CRD&F area being oiled. ADEC then required, as part of the 1998 contingency plan renewal application, additional modeling, as well as response strategies for locations such as Hawkins Island Cutoff that could prevent oil migration from the central sound to the CRD&F. That decision was the subject of a subsequent adjudicatory hearing request that was granted by ADEC Commissioner Michele Brown.

At the later hearing, the Deciding Officer heard testimony on the CRD&F issue during the adjudicatory hearing and upheld ADEC's decision imposing COA 8 to determine the likelihood of impacts to the CRD&F and ADEC's subsequent decision concerning the plan holders' submission not meeting the requirements of COA 8.

3. Do the plan holders need to demonstrate how they will protect an environmentally sensitive area (or area of public concern) before oil reaches them?

ADEC's 1995 Findings Document states that, "The State is not requiring advance planning for the Copper River area. However, the Department will inquire with the USCG to ascertain if adequate protection and response capability has been shown as part of the federal OPA-90 contingency plan approval for state waters east of Point Whitshed"⁸ (ADEC, 1995).

Settlement Agreement

Rather than continue to address potential spill trajectories, the Shippers agreed to develop GRS for those areas for incorporation into the Prince William Sound Subarea Plan. On March 3, 1998, ADEC issued a public notice that it was amending COA 8 to conform to this Copper River Settlement Agreement process. On April 22, 1998, ADEC issued a decision removing 1995 COA 8 from the 1995 Plan Approval in lieu of the Copper River Settlement Agreement (Chapple, 1998).

The 1995 COA 8 focused on resolving disagreements about the likelihood of oil moving to the CRD&F region from the shipping route within PWS. This question was essentially never

⁸ The Findings Document also makes clear that regardless of what is required in the plan, plan holders "are obligated to clean up a spill whenever it goes in state waters" (ADEC.1995, p. 27).

resolved since the agreement reached shifted the focus entirely to developing and testing a CRD&F-specific response plan.

The Settlement Agreement was signed by the ADEC Commissioner and representatives of UFA, CDFU, and BP Oil Shipping Company (BPOSC), Sea River Maritime, and ARCO Marine Inc. in February 1998. The agreement addressed two general topics: (1) developing an oil spill response plan for the CRD&F region and (2) dismissing the pending COA, challenges, and claims in the then-ongoing adjudicatory hearing process.

While the Settlement Agreement itself had no expiration date, it was written to be very specific and clear about when requirements were met. For example, the agreement required that a CRD&F-specific plan be developed and provided to the Subarea Committee, but the signatories could not commit to its *adoption* into the Subarea Contingency Plan, meaning adoption and retention of the CRD&F Plan is not considered a term of the Settlement Agreement itself.

Table 1 below identifies and discusses the outcome of each requirement in the Settlement Agreement related to an actual response there (the Agreement also described the process for concluding the 1995 COA 8 and legal appeal then underway) (McCune et al., 1998). It is assumed that since the parties involved agreed to put forward the completed CRD&F Plan to the Subarea Committee, that some of these details, such as the decision-making process used by the group, were conducted as agreed. There is no evidence to the contrary and a later checklist was identified in PWSRCAC's archives noting the status of all items as of 2000.⁹ These assumptions are stated in Table 1.

⁹ This document can be found in PWSRCAC's document management system as: 651.410.000208.TKRcplAgreem.pdf. It is referenced in text as CDFU et al., 2000.

Table 1. 1998 settlement agreement requirements related to development of a CRD&F oil spill response plan

Settlement Agreement Requirement	Status Today
1) The CRD&F Plan will be developed under and will conform with the National Response System contingency planning process, including area specific response strategies and tactics for onshore, nearshore, and open water designed to protect, contain, and clean up oil spills for the CRD&F between Cape Suckling and Hook Point.	Partial – the plan does include the information mentioned, but the process differed from the area (subarea) planning process. The primary difference is that the resource agencies were not involved.
2) The Plan will include a full description of the physical environment (geology, oceanography, weather, currents, marine and shoreline habitat, and biology, etc.). Information will be gathered from a review of relevant literature and interviews with appropriate state and federal agencies, local government bodies, and stakeholders.	Yes – though it is not clear if they conducted interviews with agencies. (See note above that the resource agencies were not involved.)
3) Shippers have awarded a contract to a qualified environmental consultant to develop the draft CRD&F Plan within nine months of signing this agreement. Shippers will bear all costs related to the project contractor up to plan submission to the Area Committee.	Yes (CDFU et al., 2000)
4) Shippers agree to retain a commercial fisherman appointed by CDFU at \$200.00 per/day to serve as a consulting subcontractor to the project contractor.	Yes (CDFU et al., 2000)
5) A Project Work Group (PWG) comprised of a representative from CDFU, USCG, ADEC, City of Cordova, and two Shippers will direct the contractor and approve the draft CRD&F Plan. The PWG will be chaired by the USCG.	Yes (CDFU et al., 2000)
6) All PWG decisions shall be by consensus. Unresolved issues or disputes will be brought before the PWS Sub-Area Plan Committee for resolution.	Yes (CDFU et al., 2000)
7) PWG will meet in Cordova at appropriate times during plan development. All meetings shall be open to the public except for portions of such meetings that may be held in	Unconfirmed, but no evidence of a deficiency.

Settlement Agreement Requirement	Status Today
<p>executive session. The PWG shall establish working procedures at the first meeting.</p>	
<p>8) Upon completion and approval of the draft CRD&F Plan by the PWG, the plan will be submitted to the PWS Sub-Area Planning Committee for acceptance as an addendum to the PWS Sub-Area Contingency Plan. Shippers will support a public review of the draft CRD&F Plan during the acceptance process as an addendum to the PWS Sub-Area Contingency Plan.</p>	<p>Yes, it was adopted in June 1999. Seven organizations submitted comments, including PWSRCAC (Berg, 2000b).</p>
<p>9) CRD&F Plan will address both mechanical and non-mechanical response techniques including a framework for a decision-making process for use of dispersants and in-situ burning. However, before adopting non-mechanical techniques the unique resources of this sensitive area must be considered.</p>	<p>Unclear. The final CRD&F Plan addresses only mechanical recovery. From review of PWSRCAC comments on the draft plan it is understood that language on non-mechanical response that was redundant with the overall Subarea Plan at the time was likely removed (Devens, 1999).</p>
<p>10) CRD&F Plan techniques will be developed based on <u>appropriate SERVS equipment that will be located in Cordova</u> to begin an immediate small scale initial response effort. This will be followed by rapid delivery of response resources from PWS and other industry and governments stockpiles worldwide to implement a large-scale spill response.</p>	<p>Yes, while it is not entirely clear what this should constitute, equipment is still stored in Cordova. (Further details on this equipment cache can be found in SERVS Technical Manual, section LP-5, table 12.5-28.)</p>
<p>11) In response to a TAPS spill that threatens the CRD&F, Shippers will mobilize SERVS equipment (up to 100% if directed by Unified Command), out-of-region, and/or other resources identified in the CRD&F Plan. The Gulf of Alaska Agreement between Alyeska Pipeline Service Company and Shippers to release all SERVS equipment at the request of the Unified Command for use in the CRD&F will not be modified without prior consultation with CDFU and DEC.</p>	<p>This is captured in the 1999 Gulf of Alaska agreement. That agreement notes the limitation on changes to its contents as stated here (BPOSC and Alyeska, 1999). All current PWS plan holders are understood to be signatories to this agreement, but this should be confirmed.</p> <p>2000 checklist notes this as the only "ongoing" item (CDFU et al., 2000).</p>
<p>12) Shippers will work with SERVS to train a sufficient number of shallow water boat operators in Cordova to</p>	<p>Unknown what was done at the time exactly, but the SERVS Fishing Vessel</p>

Settlement Agreement Requirement	Status Today
provide for an immediate small scale initial response in CRD&F.	Program includes participants in Cordova and periodic trainings, etc. These trainings do address sensitive area protection tactics and equipment.
13) Upon acceptance of the CRD&F Plan as an addendum to the PWS Sub-Area Contingency Plan, Shippers will amend the PWS Tanker Oil Discharge Prevention and Contingency Plan to provide a cross-reference to the CRD&F Plan and recognize it as an applicable response guide for the CRD&F.	Yes, completed as of 2000 (CDFU et al., 2000), but the reference is no longer in the Tanker C-Plan.
14) Within one year after acceptance of the Draft CRD&F Plan, one field deployment drill will be executed to assess plan viability. The plan will be amended to incorporate drill findings. Thereafter, drills will be conducted under the guidance of USCG and DEC as co-chairs of the Area Planning Committee in accordance with Coast Guard Guidelines.	Exercise completed in 2000. See Section 6.
15) Upon acceptance of the Draft Plan addendum the response techniques developed in the Plan will be incorporated into the overall SERVS training schedule. SERVS annual training in Cordova will include one day of field training to exercise elements of shallow water response techniques.	See fishing vessel exercises conducted in 2001-2003, Section 6. This item is indicated to be completed (CDFU et al., 2000) but it is not clear if was intended to be sustained.
16) SERVS wildlife training will be provided to Cordova based Core Fleet responders and modified to consider species unique to the CRD&F.	Noted as complete in unattributed 2000 checklist (CDFU et al., 2000).

3. CRD&F Plan (1999)

The CRD&F Plan developed as per items #1–10 of the Settlement was adopted into the PWS Subarea Plan in June 1999 (Berg, 2000b).

Overview of CRD&F Plan

The document resulting from the settlement and eventually adopted into the PWS Subarea Plan is called the "Copper River Delta & Flats GRS" (hereafter, for clarity, "CRD&F Plan"). At the time it was developed, GRS were very new in Alaska and the CRD&F Plan has much more information – and was developed through a somewhat different process – compared to what later became the standard "GRS" format and process used in Alaska (see Section 5).

The CRD&F Plan is 136 pages initially incorporated into the PWS Subarea Plan as "Change 1" in a new Part G. The document provides wide-ranging information, from suggestions about safety and anchoring options to the resources of the USCG's Pacific Strike Team located in California. The document is organized in four sections, with an additional background section: Response, Resources, Hazmat, and Sensitive Areas (the Hazmat section notes only that a hazmat response is unlikely).

Information Replicated Elsewhere in Current Documents

Most of the information in the CRD&F Plan is currently housed in the PWS ACP or Tanker C-Plan and associated Alyeska/SERVS Technical Manual. This information includes:

- Facilities in the Cordova area (potential meeting spaces, airport/airstrips, boat ramps) [See PWS ACP 9241.12 – the Cordova Community Profile]
- Contacts (federal and state On-Scene Coordinators, other agencies, fishing organizations, media, Native organizations, weather service, local emergency managers) [See PWS ACP 9241.12, 9210, 9220.9]
- Logistics and communications (transportation, lodging, food access, clothing needs, heavy lift equipment operators, salvage companies) [See PWS ACP 5420.2; 9241.12]
- Response equipment local to PWS, from elsewhere in Alaska, and from as far away as Lower 48 resources that could be mobilized by the Pacific Strike Team [See PWS ACP 5210, SERVS Technical Manual, PWS Tanker Plan]
- Sensitive species and seasonal considerations [See PWS ACP 4640, though note that this primarily references other resources including Alyeska's Graphical Resource Database and Environmental Sensitivity Index maps]
- Presence of water intakes (sources of freshwater) in the area [discussed in PWS ACP 4640.6]
- Response strategies [See: Alyeska/SERVS Technical Manual]

- Fishing vessel types active in the area [See: Alyeska/SERVS Technical Manual]

The SERVS Technical Manual describes the current response and decontamination tactics. The PWS ACP has information about sensitive resources which mentions the "Copper River Delta" many times. The PWS ACP also includes the Cordova Community Profile.

Information Unique to the CRD&F Plan

The CRD&F Plan includes two primary topics that are unique to this document: (1) operational considerations and discussion of wind/tide/current interactions in the region that would inform an oil spill response there (these discussions also note the potential presence of cultural sites) and (2) detailed response strategies for seven areas that are essentially GRS, although a different template and process were used from what was later adopted as the standard for all other GRS's developed throughout the state.

Operational Considerations

The CRD&F Plan, developed with input from – and because of the concerns of – local fishermen, includes information useful to responders planning a response in the area. It discusses safety considerations, the potential movement of oil, potential oil collection points on shore, viability of anchoring, and the importance of collecting oil before it reaches the barrier beaches and tidal areas if at all possible.

Determining response strategies in the CRD&F requires that its remote geography, high winds, heavy seas, nearshore surf zones, the barrier island front, and large stretches of protected/shallow waters in the river delta zones be carefully assessed.
(p. G-133, CRD&F Plan)

This information is found in the Subsection B (Response Strategy) of the Response Section (pages G-2 through G-3 of the CRD&F Plan) and the Background section (page G-133, quote above).

Site-specific Strategies

The CRD&F Plan breaks the region into seven areas from Hawkins and Hinchinbrook Islands to Kayak Island (see Figure 2):

- Area 1: Hawkins Cut to Strawberry Channel
- Area 2: Egg Island to Steamboat
- Area 3: Pete Dahl to Castle
- Area 4: Grass Island to Kokinhenik
- Area 5: Sofuk/Little Softuk
- Area 6: Katalla Bay
- Area 7: Bering River/Controller Bay

As shown below, the sites do not attempt to prioritize areas for response but cover the whole CRD&F area.

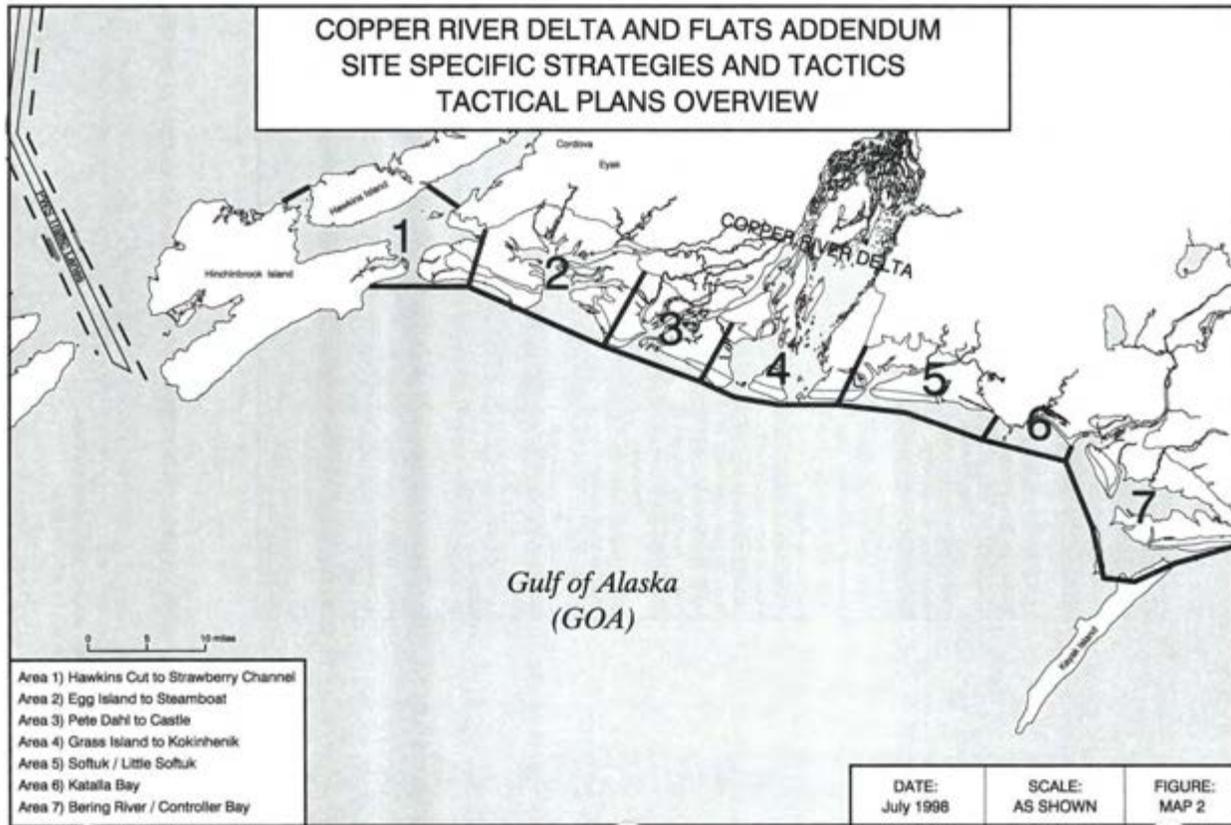


Figure 2. Seven areas for which site-specific strategies were developed in the CRD&F Plan (excerpted from the final version adopted as Change 1 into the PWS SCP in 1999, p. G-32)

For each of the seven areas, the CRD&F Plan includes:

- A description of site conditions including operational considerations such as tides and currents, as well as potential anchorages
- Sensitive sites
- Natural collection points and debris accumulation sites
- Suggested site-specific strategies and associated tactics
- Numbers and types of vessels and equipment necessary to implement and sustain the suggested tactics.

Tactical deployment maps are shown for each area as well. The maps and accompanying tables of equipment and vessels needed for deployment contain most of the information that is presented in the typical GRS format used elsewhere in PWS and Alaska. See example map in Figure 3.

It is clear that many of PWSRCAC's comments were addressed in the final version of the CRD&F in 1999, as noted by the Tri-chairs of the PWS Subarea Plan which acknowledge that the "overall subarea planning process" was not followed during development of the CRD&F Plan but that this was impossible due to the stipulations of the Settlement Agreement. The Tri-chairs note that the Alaska Regional Response Team agrees with the recommendation of the Tri-chairs as of June 1999 to proceed in publishing the CRD&F Plan as Change 1 to the PWS Subarea Plan, with an intent to prepare a subsequent revision that would be called "Change 2" through the normal subarea plan preparation and review process (Lautenberger et al., 1999). A key difference between the process used for developing the CRD&F Plan and the area planning process is that it did not include the U.S. Department of the Interior (DOI) trustee agencies or the National Oceanic and Atmospheric Administration (NOAA). As a result, DOI did not endorse the use of these GRS to respond to oil spills or hazardous substance releases in the CRD&F (this fact is noted in the Introduction to the CRD&F Plan document).

Status Today

The information in the CRD&F Plan is not available to responders today through current documents. The CRD&F Plan was still present in full within the PWS Subarea Plan promulgated as of 2005, which also added a section on GRS for the rest of Prince William Sound that had been developed by that time (see Section 4). As of the 2018 PWS Subarea Plan, however, the full CRD&F Plan was no longer included.¹⁰ There was a section titled, "CRD&F GRS Information," but it only stated, "Part 5 is included for information purposes, however, final GRSs have not yet been completed for this region." There was no Part 5 of the document, only a web link that is no longer functional as of this report. Given that the document describes the CRD&F "information" as not yet complete, it is likely that this was an outdated reference to the GRS that were under consideration as part of the PWS GRS Workgroup discussed in the next section.

The current PWS ACP (March 2020, Version 2018.1) states, "The PWS Area has been divided into five Geographic Response Zones (Figure G-1-1). The Copper River Delta Flats Zone strategies were developed through a separate Work Group process and are not included in this document. The Copper River Delta Flats GRS are considered a separate annex to the PWS Area Contingency Plan at this time." There is no listed reference in the table of contents and this language appears to have been transferred (along with the rest of the GRS section of the document) from the 2014 version when the Subarea Plan format was changed to the new ACP format in 2018. As of this report, therefore, the CRD&F Plan is alluded to but not directly referenced or included in full in the Area Plan.

¹⁰ The promulgation letter is dated 2014, but the plan version of the Subarea Plan that was superseded by the ACP is 2018.

4. Prince William Sound GRS Workgroup (2000–2009)

Concurrent with the CRD&F settlement process, an effort was underway to develop GRS for sensitive areas throughout Alaska (PWS Oil Spill Recovery Institute et al., 1998). A workgroup process and GRS template were developed and eventually implemented from Southeast Alaska to the Arctic (ADEC, 2021a) to provide consistency for this process and finished products. The development of GRS in the CRD&F area via this process and template was considered, but official GRS were not developed. In the GRS section of ADEC's website today, the CRD&F region is noted as being separate zone from PWS. The CRD&F Plan is not there, only two small charts showing sensitive resources without suggested tactics or other details in a typical GRS (ADEC, 2021b).

ADEC issued a COA with its approval of the 1999 Tanker C-Plan requiring GRS development in PWS and outer Kenai Peninsula coast. This is described in a May 2000 memo to the PWSRCAC Board:

The State's public review of the 1998 PWS tanker contingency plans (C-Plans) that started in mid-October 1998, ended on November 2, 1999, with ADEC's issuance of conditional plan approvals. Condition of Approval (COA) 3 required participation by the planholders in a PWS Geographic Response Strategies (GRS) Work Group. As required by COA 3, GRSs will be developed in PWS and along the outer Kenai Peninsula coast. While a schedule and process for the outer Kenai is yet to be set, the end result will be GRSs throughout the RCAC region from the Copper River to Kodiak.

The PWS work group held its formative meeting on March 28 [2000]. Members discussed the draft Memorandum of Agreement (MOA) that will guide the process, GRS zones dividing PWS into workable response planning segments, and initial sites in the NE Zone that could be selected to allow SeaRiver to concurrently develop GRS sites as part of its drill. (Banta, 2000)

The PWS GRS Workgroup Memorandum of Agreement (MOA) was signed in May 2000 by representatives from ADEC, USCG, PWSRCAC, and the five PWS shippers (Alaska Tanker Company, SeaRiver Maritime Company, Tesoro Maritime Company, Chevron Shipping Company LLC, and ARCO Marine). The four zones mentioned in the MOA remain today as four quadrants dividing PWS (CRD&F is shown as a fifth zone on the ADEC website, as it was also referenced in the Subarea Plan).

Considering the MOA for this process in contrast to the Settlement terms discussed above, it is noted that the PWS GRS Workgroup:

1. Explicitly describes a process for identifying sites based on the likelihood of protecting the area, sensitivity, and degree of public concern (including processes for public review and input). *By contrast, the CRD&F Plan identified potential strategies along the entire stretch of coast.*

2. A Sensitive Areas Working Group inclusive of the resource agencies will conduct the planning process to select sites for site-specific strategies, including site surveys. The following are listed as "interested parties" to the MOA: U.S. Forest Service, U.S. Department of Interior, National Oceanographic Atmospheric Administration, Alaska Department of Fish & Game, and Alaska Department of Natural Resources. *By contrast, the resource agencies were not involved in the CRD&F Plan development.*
3. Commits to the site identification and development of 20 individual GRS sites to satisfy the COA from the 1998 Tanker C-Plan review.
4. Excludes the CRD&F: in proposing to divide the PWS Subarea into geographic zones, the MOA identifies four quadrants in PWS proper with a note that, "A fifth zone runs from 60 26.3' N and 145 53.0'W east to Icey Bay [*sic*] and is not the subject of this effort" (Dietrick et al., 2002). *Discussion during the MOA notes that, "The shippers wanted it clear that they didn't need to do any work under COA 3 on that zone, and others wanted it to be clear that it was a zone in the PWS Subarea" (PWS GRS WG, 2000a). So, the CRD&F was initially excluded from the PWS GRS Workgroup process.*

Despite the fourth item, above, the PWS GRS Workgroup did eventually broach developing GRS for the CRD&F. The reason they chose to address CRD&F when it had been excluded from the MOA is not clear from review of available meeting summaries. In some Workgroup documentation reviewed for this report, only the four zones in PWS proper are included, while in others, seven potential GRS sites in CRD&F are identified for development (See Figure 4). The seven potential GRS sites identified through this Workgroup process are more geographically-specific than the seven gridded areas in the CRD&F Plan described in Section 3.

A PWS GRS Resource Matrix dated August 1, 2001, includes seven potential GRS sites in the CRD&F Zone (PWS GRS Resource Matrix, 2001). The seven sites remain as "potential" in an index map of PWS GRS in 2003, with a note in a June 2003 PWS GRS Workgroup meeting summary that the resource agencies will add more information to the matrix for the CRD&F sites (Kwietniak et al., 2003). By November of that year, hand-written notes from a Tactics Group (of the PWS GRS Workgroup) note that overflights are needed in order to develop tactics (Banta, 2003).¹¹ The overflights took place in 2004 (see Figure 6 photos from Tim Robertson).

¹¹ Document is from PWSRCAC archives, with notes from the files of Joe Banta.

- GREEN: GRS is final and adopted into Subarea Contingency Plan.
- YELLOW: GRS is approved by Workgroup but not yet adopted into subarea contingency Plan.
- RED: Site is selected for GRS development, GRS is in draft form for review by Workgroup members.

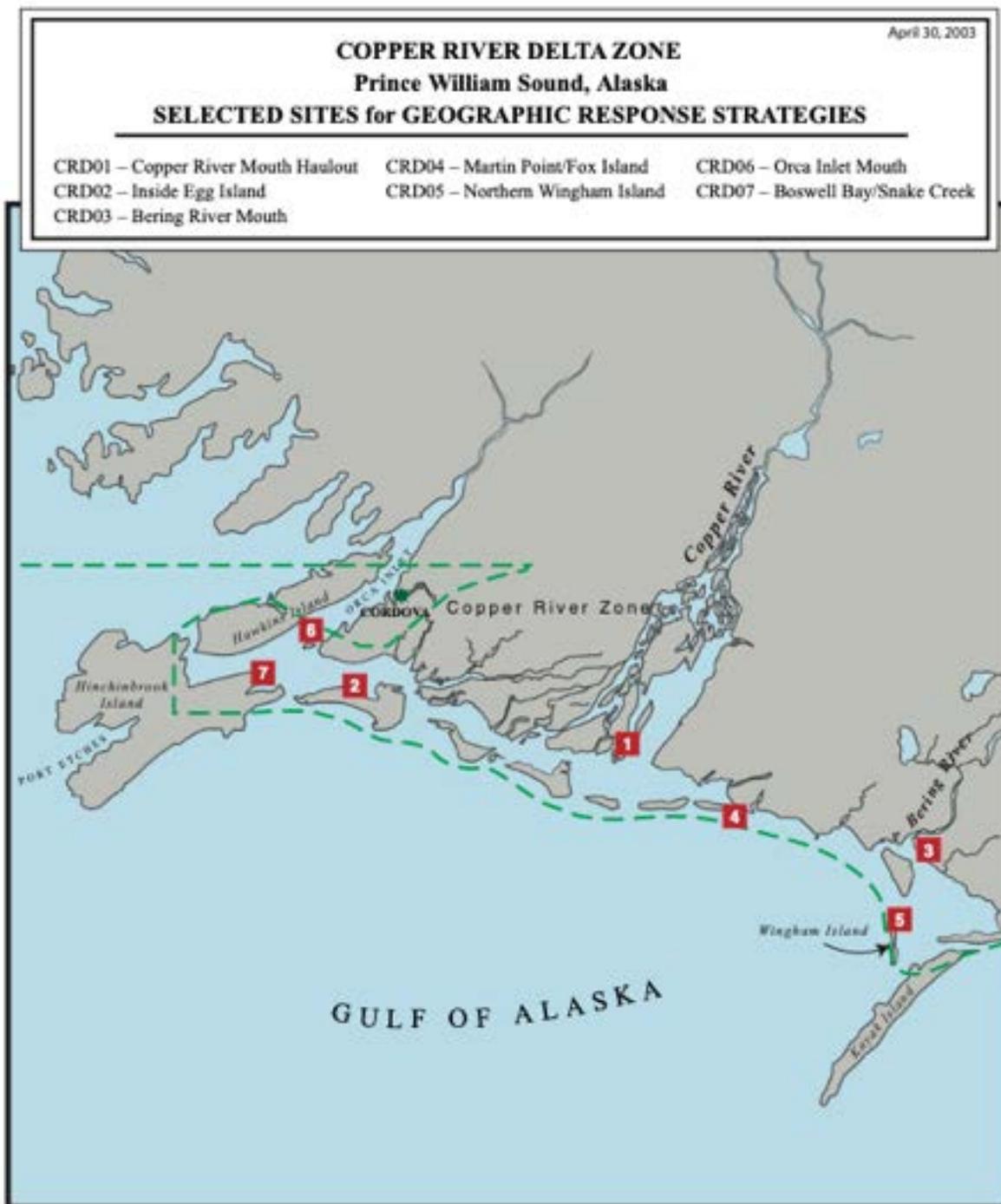


Figure 4. Potential GRS in the Copper River Zone, excerpted from March 9, 2005 meeting agenda and materials of the PWS GRS Workgroup (these are the same sites that had been identified in a 2001 resource matrix)



Copper River Mouth



Inside Egg Island



Boswell Bay/Snake Creek



Orca Inlet



Fox Island



Bering River Mouth

Figure 5. Select photos from 2004 overflight; photos are taken approximately 2-3 hours past low tide in Cordova, illustrating the high energy conditions and shallow waters that characterize the CRD&F area (Tim Robertson)

Despite the efforts described here, the PWS GRS Workgroup did not ever develop GRS for the CRD&F. On-the-ground site surveys planned for the summer of 2004 were never conducted due to scheduling conflicts with commercial fishing openers. After the Tactics Group – a subgroup of the PWS GRS Workgroup – reviewed the overflight photos and considered input from SERVS, the Tactics Group decided in November 2004 to recommend that the best strategy for the protection of this area would be to continue to develop the tactics already present in the CRD&F Plan (Kotula et al., 2004). By March 2005, however, the full PWS GRS Workgroup ended up concluding that only two of the sites, Boswell Bay and the Mouth of Orca Inlet, were viable for site-specific strategies. The Tactics Group was directed to "rework" the tactics for Boswell Bay (it is not clear if this refers to the CRD&F Plan or not) and review exercise reports to consider tactics for Orca Inlet (Kwietniak et al. 2005). Figure 6 shows these two sites, which remain on the ADEC website as of December 2021, but with only chartlets showing sensitive resources. No evidence was found that tactics were developed.



Figure 6. Two remaining sites recommended for GRS in the Copper River Zone at conclusion of GRS process

ADEC's website as of December 2021 captures the status of GRS for the Copper River Zone as follows:

The workgroup selected 2 sites from the list of candidate sites for GRS development. The map shows the GRS selected sites, while the site selection matrix and site selection key summarize the resources at risk for each site. The site selection process took into consideration environmental sensitivity, risk of being impacted from a waterborne spill, and feasibility of successfully protecting the site with existing technology. (ADEC, 2021b)

Two documents labeled as GRS (CRD-06: Orca Inlet and CRD-07: Boswell Bay/Snake Creek) are also posted on the ADEC website for the Copper River Zone GRS (ADEC, 2021b). However, these documents are not actually GRS, but chartlets that identify some sensitive resources near those two locations without tactics or other information that would comprise a GRS. Both are dated in 2003, concurrent with the general timing of when the resource information was being compiled as part of the PWS GRS Workgroup. See Figure 7 for the PWS-CRD-06 Orca Inlet example.

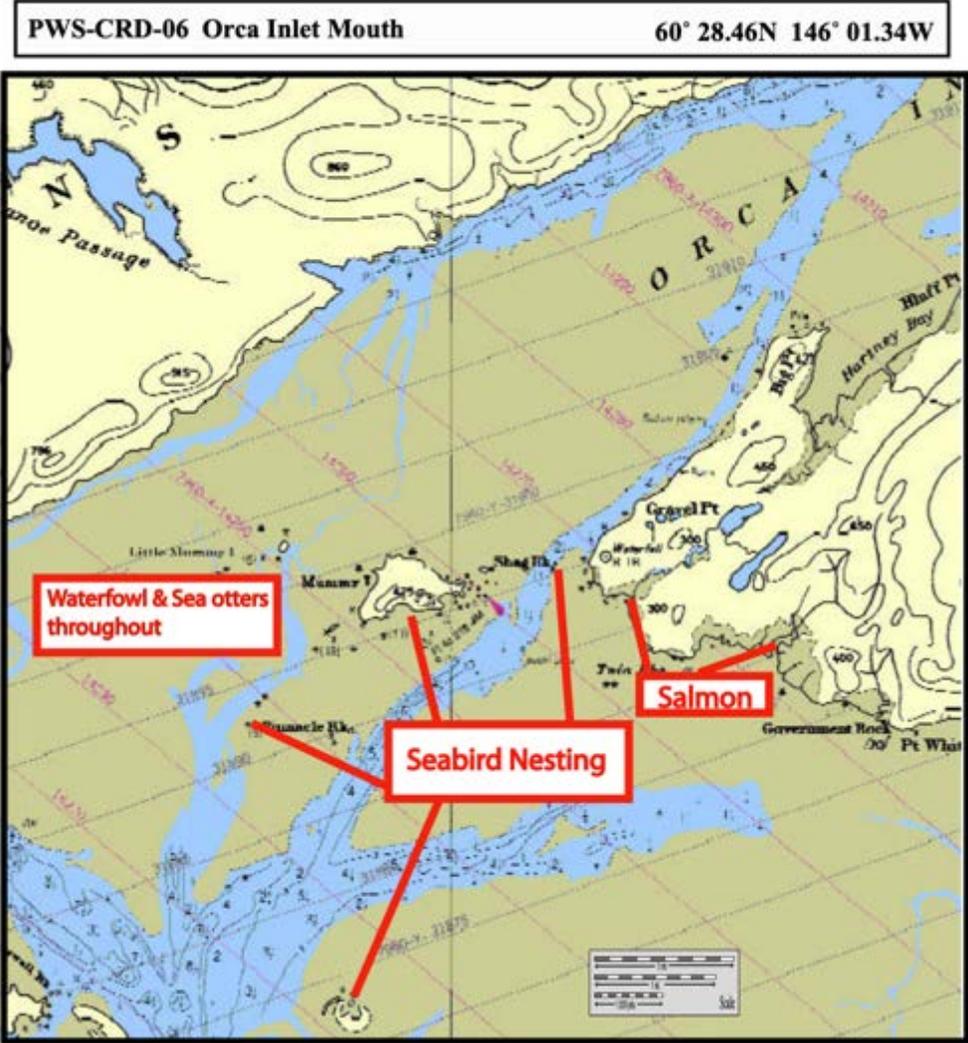


Figure 7. One of two CRD&F "GRS" on ADEC website as of December 2021

5. Copper River Delta & Flats Exercises

Item #14 of the Settlement Agreement required that, "Within one year after acceptance of the Draft CRD&F Plan, one field deployment drill will be executed to assess plan viability. The plan will be amended to incorporate drill findings."

The shippers held an exercise in April 2000 to demonstrate shallow water response tactics from the CRD&F Plan. The exercise was planned by the same group that developed the CRD&F Plan, as well as PWSRCAC and SERVS (Berg, 2000a). ADEC requested in a letter before the exercise that CDFU, UFA, and PWSRCAC be included in the pre-exercise planning on Days 1 and 2, and that on Day 3 the exercise must complete validation of the response strategies in the CRD&F Plan to meet the requirements of the settlement (Hahn, 2000).

The exercise was planned for Area #1 in the CRD&F Plan (see Figure 3), including the Nearshore Barge 500-2, *Krystal Sea* landing craft, 30–35 fishing vessels, and four SERVS work boats, as well as 4,300 feet of boom, mini-barges, skimming systems, and a cold-water deluge system. Five of the seven tactics described for Area #1 in the CRD&F Plan were to be demonstrated, including shallow water recovery with a U-boom, containment with a Current Buster, different types of booming configurations, and entrapment and cold-water deluge. Exercise participants included: SERVS, contracted fishing vessels (Tier 1 and 2), SeaRiver Maritime, Alaska Chadux, USCG (including from the Pacific Strike Team), and members of the RPG (Stewart, 2003).

Following the exercise, the RPG submitted a letter to the PWS Subarea Committee Tri-chairs documenting the completion of the exercise. The letter explained that the exercise, "was conducted under challenging weather conditions often experienced in the area, demonstrating exemplary professionalism and expertise by fishermen, SERVS, Chadux and the Coast Guard." It also explained that there was a debrief of all involved (including also ADEC, PWSRCAC, and the shippers), at which, "The drill was seen by all participants to have met its objectives including validation of response tactics" (Berg, 2000b).

The PWSRCAC exercise report notes that weather conditions¹² prevented activity in the intended area and instead the tactics were tested within Orca Inlet near Cordova. The intended tactics were deployed, except for exclusion booming which "encountered difficulties with wind and anchoring" and was never established. The report states, "The fact that the exercise was not undertaken on the flats perhaps limited the ability to assess adequately their effectiveness, though working in a shallow, narrow channel with strong wind and current did exemplify some flats conditions" (Jones, 2000a).

The PWSRCAC exercise report also mentions how well the different groups involved were able to work together. It identifies some lessons learned, one of which was to shorten the lengths of boom used for fixed deflection to prevent entrainment and anchor dragging in

¹² "Wind 20–30 with higher gusts SE. Sea, short wind-driven waves. Tide: Low." (Jones, 2000)

the strong currents. A concluding participant comment noted that, "You should know that where we did the exercise is where we go to get out of the weather" (Jones, 2000a).

Subsequent Exercises in the CRD&F

While annual SERVS fishing vessel trainings happen in the Cordova vicinity (typically Nelson Bay) along with other drill and exercise activity, only three additional exercises were identified and confirmed through the present that were focused on the CRD&F.

Two exercises were focused on Boswell Bay. In addition to the exercise described above, a 2000 Boswell Bay fishing vessel deployment (noted in Jones, 2000b) was conducted, but PWSRCAC's observer was unable to reach Cordova to observe the exercise due to poor flight conditions. In 2001, another exercise in Boswell Bay tested exclusion booming across the mouth of the bay. PWSRCAC documentation noted this proved "extremely difficult because of the tidal currents" (Jones, 2001).¹³

A 2003 exercise packet for an exercise on Area #2 Egg Island/Steamboat was identified during research for this project. The exercise packet cites objectives of exercising tactics in the CRD&F Plan (Stewart, 2003). However, there is no record of this exercise in the PWSRCAC annual drills report (Jones, 2003).

A 2004 exercise focused on Pete Dahl Slough to Castle Island in CRD&F. This was a more limited exercise than the 2000 deployment, focused on deploying both shallow-water recovery with a U-boom configuration and exclusion and live diversion booming (plus demobilization). The PWSRCAC exercise report explains that there were conflicts with fishing openers underway at the time and both time and tide restrictions meant that not all equipment made it to the area. Dynamic diversion boom was deployed at the Pete Dahl Slough entrance and U-boom collection practiced in that area. Deployment of exclusion booming planned for Castle Island Slough was prevented by tide conditions (Jones, 2004).

The 2004 exercise report highlights the importance of local knowledge to operate safely in the area.

It cannot be emphasized how vital local knowledge is to a response on the flats. Each of the fishermen involved in this exercise had course lines visible in electronic plotters and followed them very carefully to arrive at the exercise site. In traveling out, on each side of the boat, observers could see ripples over shallow bars as the current came in. These same plot lines are necessary to reach any of the other areas on the flats as well. As an idea of how much water moves in and out of the flats, while we had to follow the narrow channels on the way out, returning at about the full high tide, the boats could cross the whole flats on a straight line toward the channel to Cordova. As a result of ocean storms, high tidal currents, changes in river flows from the north and other factors, these channels are changing constantly, yearly, monthly sometimes even daily. Any chart of the area would serve only as a guideline and not really provide for safe course lines on

¹³ PWSRCAC did not observe Day 2 of the exercise in which other tactics were to be tested (Jones, 2001).

the flats. Through the Cordova District Fisherman United, fishermen develop yearly charts and makers [sic] for channels but even these can change. (Jones, 2004, p 7)

A current of 4.6 to 5 knots was observed while monitoring the boom configuration that was deployed, causing entrainment (Jones, 2004).

Table 2 summarizes the exercises identified through research for this project, in terms of the seven areas identified in the CRD&F Plan. No exercises of potential GRS via the PWS GRS Workgroup process are known to have been conducted in the CRD&F, though there was a 2003 GRS deployment on the *other* side of Hawkins Island at Canoe Passage which resulted in modifications to the GRS there (Jones and Parkin, 2003).

Table 2. Summary of CRD&F exercises

Area	Description	Exercise
Area #1	Hawkins Cut-off/Strawberry Channel	Fishing vessel deployments in Boswell Bay (2000, 2001) "Settlement exercise" targeted this area in 2000, but was conducted farther north into Orca Inlet
Area #2	Egg Island/Steamboat	2003 exercise packet identified; exercise unconfirmed
Area #3	Pete Dahl/Castle	2004 exercise
Area #4	Grass Island to Kokinkenik	None
Area #5	Softuk/Little Softuk	None
Area #6	Katalla Bay	None
Area #7	Bering River/Controller Bay	None

6. Recommendations for Future Consideration

The two-fold purpose of this project was to document the past and identify potential recommendations for any future action that may be warranted. The following recommendations are provided by the authors based on this effort. They reflect the authors' assessment that the intent of the settlement should be carried forward but with updated information that has been *developed* with the benefit local knowledge and *maintained* somewhere that will be useful to responders if a spill occurs.

1. Response strategies identified for the CRD&F should be improved upon and made available to responders.

The limited exercises conducted in the CRD&F did demonstrate the feasibility of deploying different booming strategies there, even though challenges arose and modifications were suggested (which is not uncommon when a GRS is tested). Additional tactics for this highly sensitive but highly exposed, shallow area could also be developed such as deploying snare (sorbent) material ahead of a spill. This recommendation relates closely to recommendation 2, as anything developed should be integrated into the statewide planning and GRS process.

2. The CRD&F Plan has information that is potentially as useful as other GRS and should be included in the statewide process for testing and improving GRS in the future or added to the PWS Tanker Plan.

While the GRS on the ADEC website today may well represent the conclusion of the PWS GRS Workgroup, there are suggestions in the CRD&F Plan that could be useful for responders today. Upon accepting the CRD&F Plan, the Subarea Committee stated the intent that it would be updated in the future. "At this phase in the process, we have decided to proceed with the publication of Change 1 to the PWS SCP, with appropriate comments incorporated. We are fully aware that the CRDF addendum has areas that could be enhanced; however, we felt that the basic geographic response strategy provides useful guidance to spill responders and constitutes a step forward in the overall response planning process" (Lautenberger et al., 1999).

The CRD&F Plan was developed with local knowledge of conditions, and there is some experience through exercises with deployment there. As with any GRS that has not been tested, they represent the best guess of experts at the time (even when a GRS is tested, the results represent the outcome in the weather and tide conditions on that day). The exercise reports referenced in this report also include key suggestions and lessons learned that were never adopted. While they were not informed by the resource agencies, information on the Site Specific Strategies and Tactics (beginning on p. G-35 of the CRD&F Plan) may still be used to inform planning or deployments to protect sensitive resources that occur throughout the area. These areas should be revisited by those knowledgeable about the area today,

and ideally tested so they can be improved upon in the future. CRD&F GRS should be included in any GRS development or refinement process undertaken in PWS using the CRD&F Plan and review of lessons learned from exercises as starting point, with the addition of local knowledge.

One of the settlement requirements was that the CRD&F Plan would be incorporated by reference into the PWS Tanker Plan after being accepted by the Subarea Committee. If GRS for CRD&F are not updated through the area planning process, then it is logical that it should be done by the shippers to implement the intent of the Settlement Agreement signed.

3. Caution should be taken regarding the incorporation of materials by reference within important plan documents.

While lengthy volumes can be cumbersome and the inclination to reference materials on websites or incorporate them by reference is understandable, it can also raise challenges in maintaining and updating information.

The CRD&F Plan, developed as part of a legal settlement at the end of a contentious process, was ultimately lost from Alaska's oil spill response plans, along with the intent at the time of its adoption that it would be revised and improved. Today, there is a statement in the PWS ACP that, "The Copper River Delta Flats GRS are considered a separate annex to the PWS Area Contingency Plan at this time" (p. 350, March 2020 version). No such annex is mentioned in the table of contents nor included in the document though.

The CRD&F Plan should be reviewed during the next PWS ACP update for relevant information or perhaps reviewed via a smaller focused sub work group. In addition to this review of this past GRS work, other local information such as the Cordova Community Profile and information about sensitivity and logistics provided throughout the ACP should also be reviewed for accuracy and any required updates.

4. Local knowledge is critical to safe operations in the CRD&F and opportunities should be sought to ensure the CRD&F is adequately covered in the PWS ACP and SERVS fishing vessel trainings.

This statement of the obvious is intended to highlight the importance of local input throughout the process described in this report: fishermen brought information about how oil might move in or to CRD&F in different conditions, critical suggestions about operating safely, and a willingness to deploy and test oil spill response tactics with their vessels (demonstrated today through the ongoing SERVS Fishing Vessel Program). Local knowledge should also be actively engaged in ensuring that information in the PWS ACP about Cordova logistics and the CRD&F operations generally is as complete and current as possible. This could also include creating a mechanism for fishermen to share regularly updated information on changing channels. Sustaining local interest in providing this kind of input is just as important

when there has *not* been the kind of significant oil spill that triggered UFA and CDFU to engage in the Tanker C-Plan review process in 1995.

The annual fishing vessel training in Cordova is one opportunity to gain input and apply the fishing vessel operators' own experience to inform sensitive area protection strategies for the CRD&F. This would be a way to capture insights into changes over the previous year in channels and currents and heighten awareness of safety limitations for all involved.

5. The Gulf of Alaska Agreements between today's shippers and APSC should be shared with ADEC, CDFU, and PWSRCAC.

The Settlement Agreement included the requirement that the provision of the Gulf of Alaska Agreement regarding the CRD&F area should not be updated without notifying ADEC and CDFU. Since the signatories of that document have changed over time, the agreement should be shared to verify that the language has not changed.

As this agreement is associated with meeting federal regulations, there is no requirement that it be shared as part of the kind of public plan review process that is required in state regulations. However, obtaining and reviewing this type of information enables PWSRCAC to meet its mandate in federal statute to review "for the terminal facilities and the adequacy of oil spill prevention and contingency plans for crude oil tankers, operating in Prince William Sound" 33 U.S.C. § 2732(d)(6). Not only does this apply to federal vessel response plans, which cover the whole Captain of the Port Zone, but the statute also defines the tankers of concern to PWSRCAC as those "calling at the terminal facilities for the purpose of receiving and transporting oil to refineries, operating north of Middleton Island and bound for or exiting from Prince William Sound" [33 U.S.C. 2732(m)(2)].¹⁴

¹⁴ Middleton Island is in the Gulf of Alaska and visible in Figure 2 due to the state waters surrounding it.

8. Conclusion

Following the trauma of the *Exxon Valdez* oil spill, there was a clear determination by two groups that depend on Copper River-area fisheries to ensure a robust level of planning for an oil spill response in that area. Through the public review and comment process required in then-new ADEC regulations, ADEC's implementation of those regulations, and eventual adjudication process, an outcome occurred that, if not perfect, achieved a document and intent for ongoing exercise and training designed to provide that robust planning. This was intended as a first-step effort, but the second step was never completed. While the challenges to responding in the area are numerous and safety paramount, there is still an opportunity to carry forward the intent of the 1995 demands by maximizing local input to the current area planning process and including GRS for the CRD&F area in ongoing training, testing, and prioritization efforts of the shippers and agencies.

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Appendix A: Summary Timeline

Copper River Delta & Flats Summary Timeline			
YEAR	CRD&F Settlement Process	PWS GRS Workgroup	Exercises in CRD&F
1995	Tanker C-plan Approval requires analyses of probability of oiling CRD&F. CDFU and UFA appeal.		
1996			
1997	Trajectory analyses submitted by shippers are rejected by ADEC. Appeal proceeds.		
1998	Shippers, CDFU, UFA, and ADEC sign Settlement Agreement to develop and test CRD&F Plan.		
1999	CRD&F Plan completed per Settlement Agreement and adopted into PWS Subarea Plan.	ADEC requires shippers to develop GRS as part of approval of 1998 Tanker C-plan.	
2000	Exercise held as part of Settlement Agreement that ended up in Orca Inlet due to rough weather.	PWS GRS Workgroup forms according to the emerging Alaska GRS template and process.	<u>See Settlement column.</u> In addition, a fishing vessel exercise was held in Boswell Bay.
2001		Though initially excluding CRD&F, PWS GRS Workgroup identifies 7 potential GRS sites there.	Fishing vessel exercise held in Boswell Bay to test exclusion booming.
2002	<div style="border: 1px dashed gray; padding: 5px; text-align: center;"> <i>The only Settlement Agreement requirement that is not time-bound is the commitment that the Gulf of Alaska Agreement provision related to CRD&F will not be revised without consultation with CDFU and ADEC.</i> </div>		
2003		GRS sites in CRD&F remain as "potential" with intent to develop more resource information and tactics.	Exercise packet identified for Egg Island/Steamboat exercise, but event could not be confirmed.
2004		Aerial photos of CRD&F taken for the purpose of developing tactics.	Exercise held in Pete Dahl Slough/Castle Island region.
2005		PWS GRS Workgroup decides just 2 sites are viable for site-specific strategies, but GRS are not developed.	

B-Appendix B: Geographic Delineations in Response Regulations

The CRD&F is adjacent to, but not within, Prince William Sound itself, yet is within the Prince William Sound Captain of the Port (COTP) Zone and the Prince William Sound Area (for Area Contingency Planning purposes).¹⁵ See Figure B-1.

There are three layers of requirements established for TAPS-trade tankers in federal and state law with varying geographic implications:

- U.S. Coast Guard regulations require tankers that are making a U.S. port call or flagged to the U.S. to have an approved vessel response plan for each Captain of the Port Zone through which it will travel (33 CFR 155.1030).
- Alaska statute requires a vessel transporting oil in state waters to have an approved oil discharge prevention and contingency plan, as described above [AS 46.04.030(c)]. (PWS and CRD&F are within state waters.)
- In an additional provision in Alaska law, TAPS-trade tankers must contract with the spill response organization of the "common operating agent" of the TAPS right-of-way lease holders. In the latter case, the definition of "Prince William Sound in the same section of statute excludes CRD&F (see Table 1) [AS 46.04.030(q)].

In practice, APSC's SERVS is the response organization in all three of these overlapping or adjacent areas. While Alaska statute requires Alyeska, as the common operating agent of TAPS lease-holders, to respond for the first 72 hours of a spill within PWS as defined in statute at AS 46.04.030(q), the Gulf of Alaska (GOA) Agreement gives the shippers access to SERVS for response in the GOA Response Area. The GOA Response Area is the rest of the COTP Zone outside state waters, except around the CRD&F, where state waters are included as part of the GOA Response Area. The GOA Agreement defines the CRD&F as the state waters between Point Whithed and Cape Suckling (BPOSC and APSC, 1999). Point

¹⁵ For the purpose of preparing a regional master plan as required at AS 46.04.210, the Prince William Sound region is defined as, "that area south of 63E30' N. latitude, west of the region described in (1) of this subsection, and east of the region described in (3) of this subsection, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured" [18 AAC 75.495(a)(2)].

Whitshed is about 6 miles southwest of Cordova while Cape Suckling is east of Kayak Island. See Table B-1 and Figure B-1.

Table B-1. Alyeska/SERVS roles and response areas

Role of Alyeska/SERVS	Area of Response (including/excluding CRD&F)	Citation
USCG-approved Oil Spill Removal Organization (OSRO)	Within PWS COTP Zone, including CRD&F and extending out to 200 nautical miles	Oil Pollution Act of 1990
ADEC-approved Primary Response Action Contractor (PRAC)	<p>Within or potentially affecting state waters, including CRD&F</p> <p>Statute also requires certain response equipment to be located within the "region of operation" based on the same regions defined for regional master planning, which includes CRD&F</p>	<p>AS 46.04.035: AS 46.04.030(c)</p> <p>AS 46.04.020(a);</p> <p>AS 46.04.030(k)(3)</p> <p>18 AAC 75.495(a)(2)</p>
Response organization of the Common Operating Agent of TAPS Lease Holders	<p>Within Prince William Sound (excluding CRD&F)</p> <p>"all marine waters within the boundary line established at Cape Puget, southeasterly to Cape Cleare, along Montague Island to Zaikof Point, easterly to Cape Hinchinbrook, along Hinchinbrook Island to Point Bentinck, and easterly to Point Whitshed"</p>	<p>AS46.04.030(q)</p> <p>AS 46.04.020(g)</p>

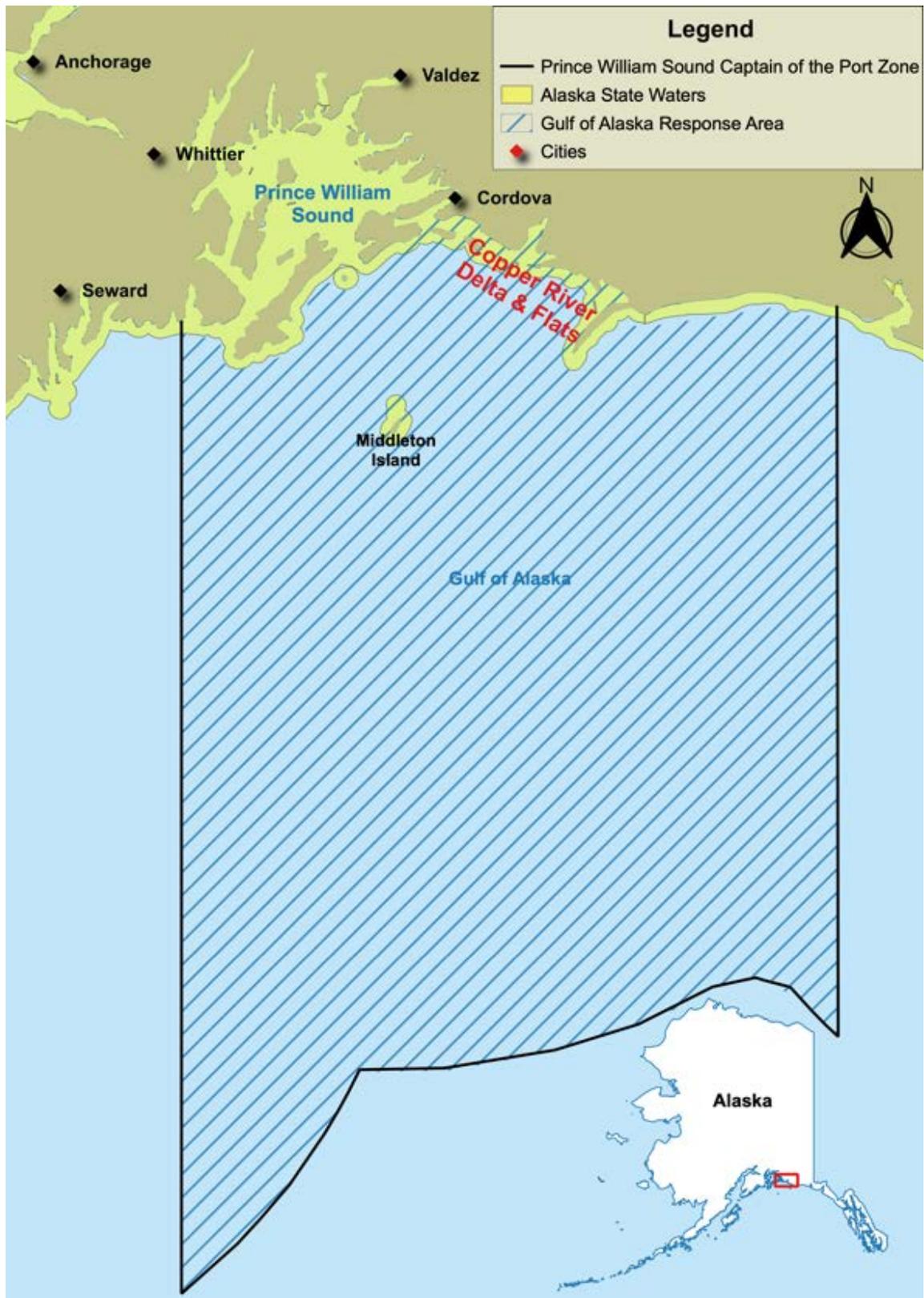


Figure B-1. Prince William Sound Captain of the Port Zone, Gulf of Alaska Response Area, and CRD&F