COOK INLET
SUBAREA CONTINGENCY PLAN

BACKGROUND
SECTION

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BACKGROUND: PART ONE – SUPPORT INFORMATION

A. SUBAREA PLAN DESCRIPTION

This Subarea Contingency Plan (SCP) supplements the Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases (the **Unified Plan**). The SCP in conjunction with the Unified Plan describes the strategy for a coordinated federal, state and local response to a discharge or substantial threat of discharge of oil or a release of a hazardous substance from a vessel, offshore facility, or onshore facility operating within the boundaries of the Cook Inlet Subarea.

For its planning process, the federal government has designated the entire state of Alaska as a planning "region" and the western half of the state as a planning "area." The State of Alaska has divided the state into ten planning regions of which one is the "Cook Inlet Region." As part of the Unified Plan, this SCP addresses this Cook Inlet Region; to avoid confusion with federal terms, the region is referred to as the Cook Inlet Subarea.

The SCP shall be used as a framework for response mechanisms and as a pre-incident guide to identify weaknesses and to evaluate shortfalls in the response structure before an incident. The plan also offers parameters for vessel and facility response plans under OPA 90. Any review for consistency between government and industry plans should address the recognition of economically and environmentally sensitive areas and the related protection strategies, as well as analyze the response personnel and equipment (quantity and type) available within the area (including federal, state, and local government and industry) in comparison to probable need during a response.

B. SUBAREA DESCRIPTION

1. Subarea Boundaries

As defined by Alaska regulations, the Cook Inlet Subarea encompasses the boundaries of the Kenai Peninsula Borough, the Municipality of Anchorage, and the Matanuska-Susitna Borough, including adjacent shorelines, waters of Cook Inlet and waters having as their seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from which the territorial sea is measured. Figure E-1 depicts this area.

The subarea encompasses a very diverse array of topographical features, including extremely mountainous terrain, ice fields, tidewater and piedmont glaciers, river deltas and broad tidal mudflats, rocky shoreline, and vast fields of muskeg.

2. Physical Setting

Cook Inlet is a large, elongated body of water oriented in a SW-NE direction in southcentral Alaska. It is approximately 150 miles long, and its width ranges from about 10 miles between the East and West Forelands in the north, to approximately 80 miles between the Kenai Peninsula and the mouth of the McNeil River in Kamishak Bay, toward the south. The inlet experiences the second largest tidal fluctuations in the world, frequently exceeding twenty feet, with tidal current velocities as fast as 8 knots (Sienkiewicz et al, 1992). Tidal flats are a dominant coastal feature along Cook Inlet, although marshes, rocky shores, sand and gravel beaches, and wave-cut platforms are also quite common.

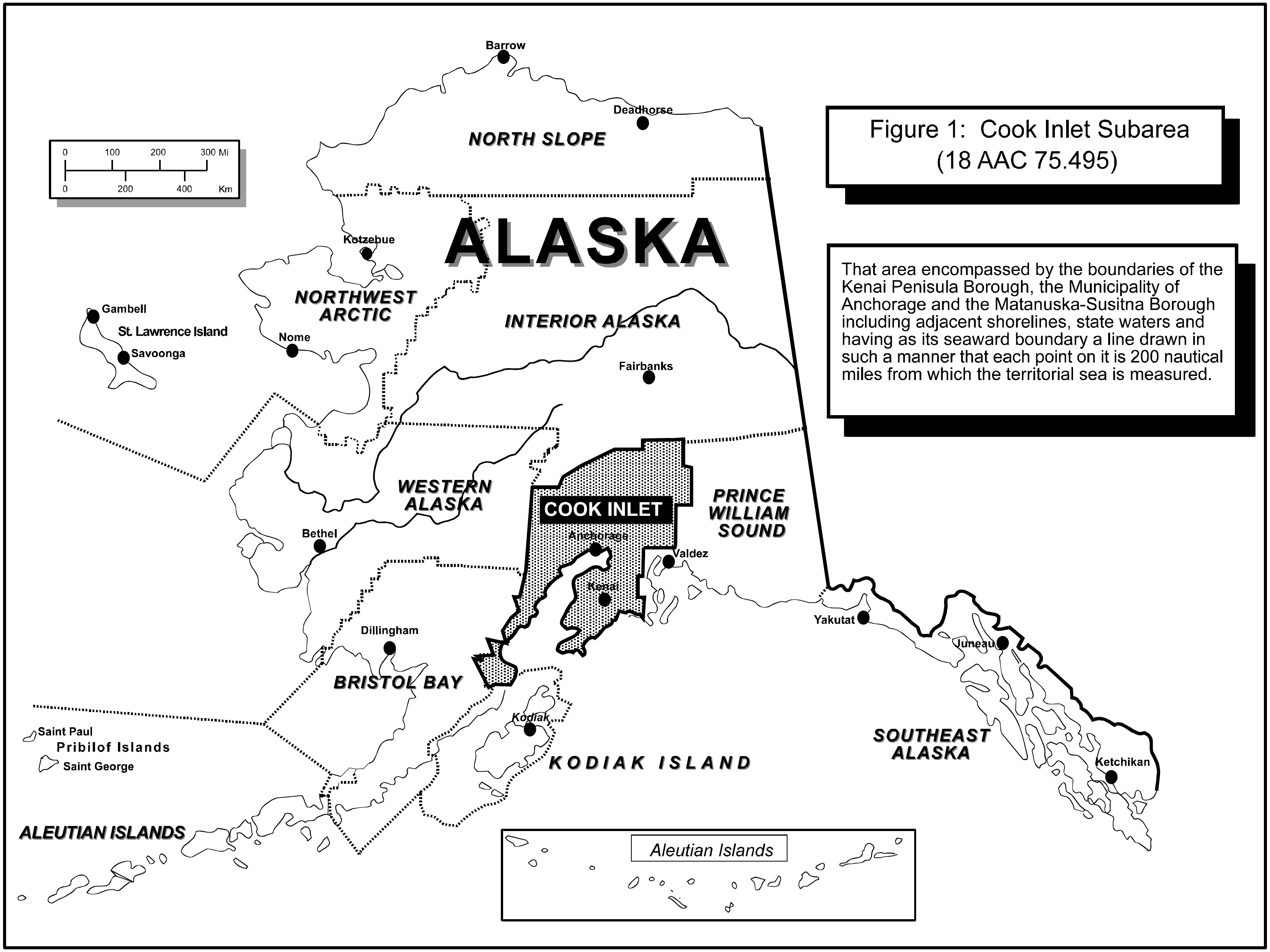

Figure 1: Cook Inlet Subarea (18 AAC 75.495)

That area encompassed by the boundaries of the Kenai Penisula Borough, the Municipality of Anchorage and the Matanuska-Susitna Borough including adjacent shorelines, 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 which the territorial sea is measured.

Figure E-2: Cook Inlet Detailed Subarea Map

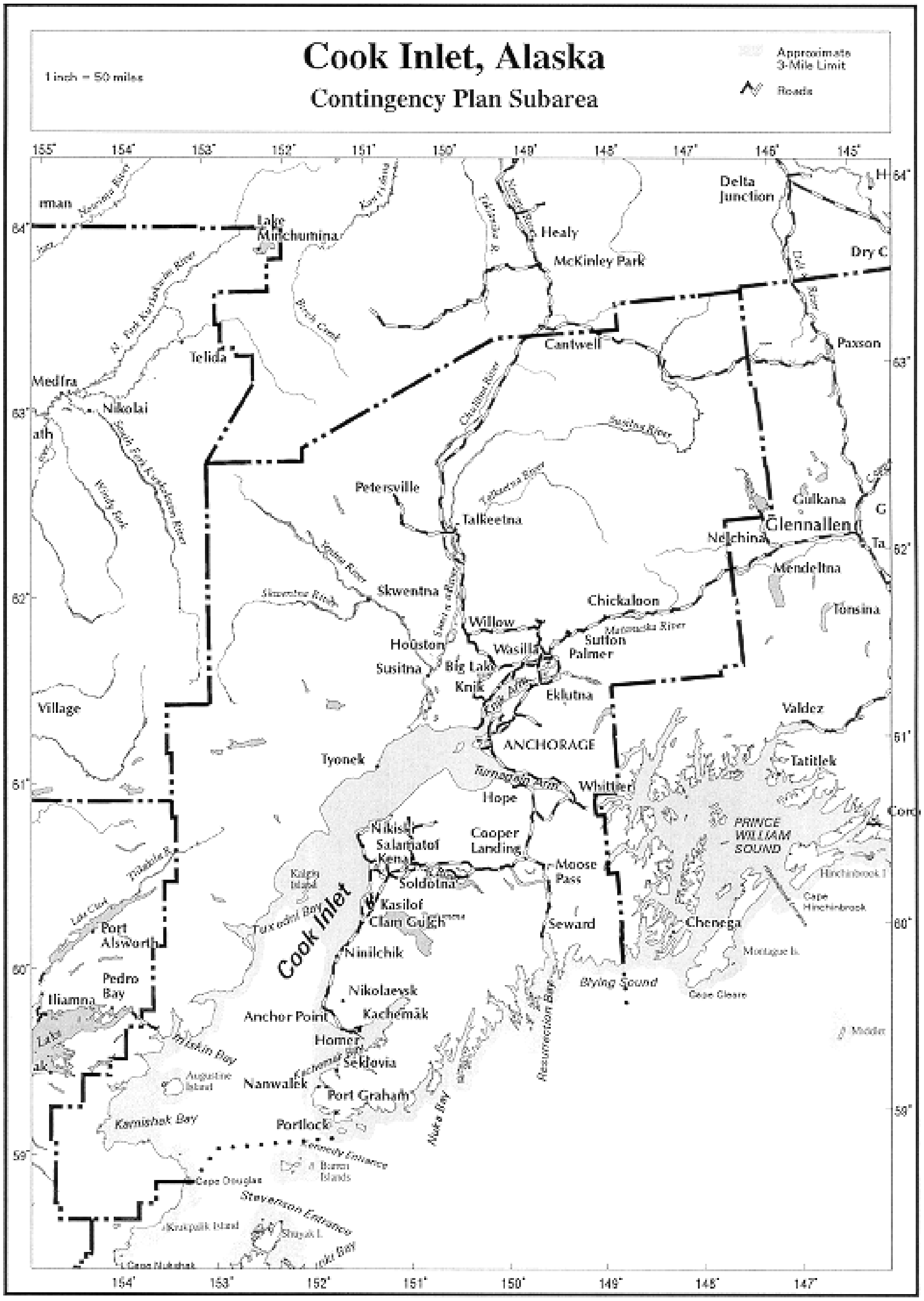

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Figure E-3: Cook Inlet USGS Topo Map Index

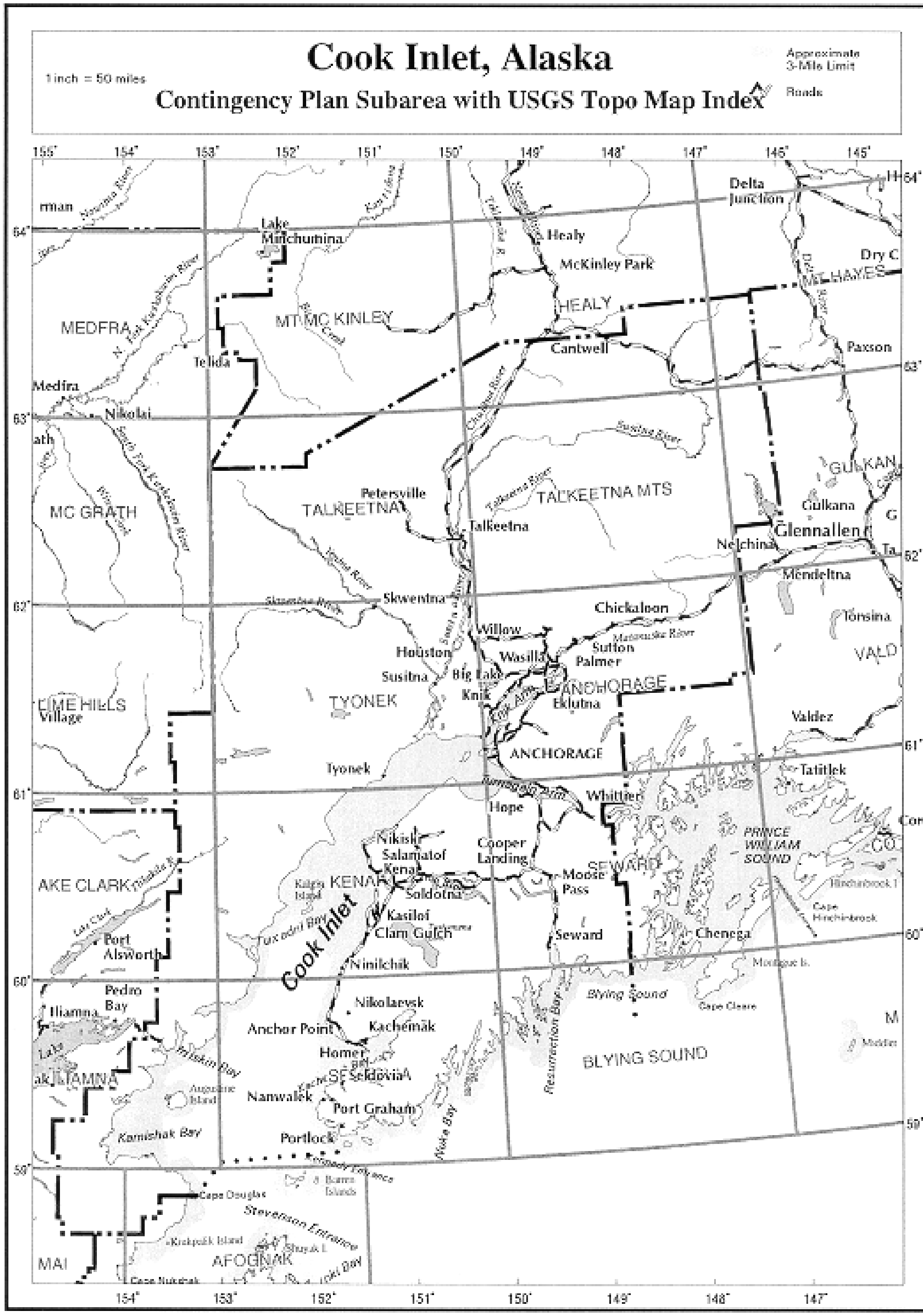
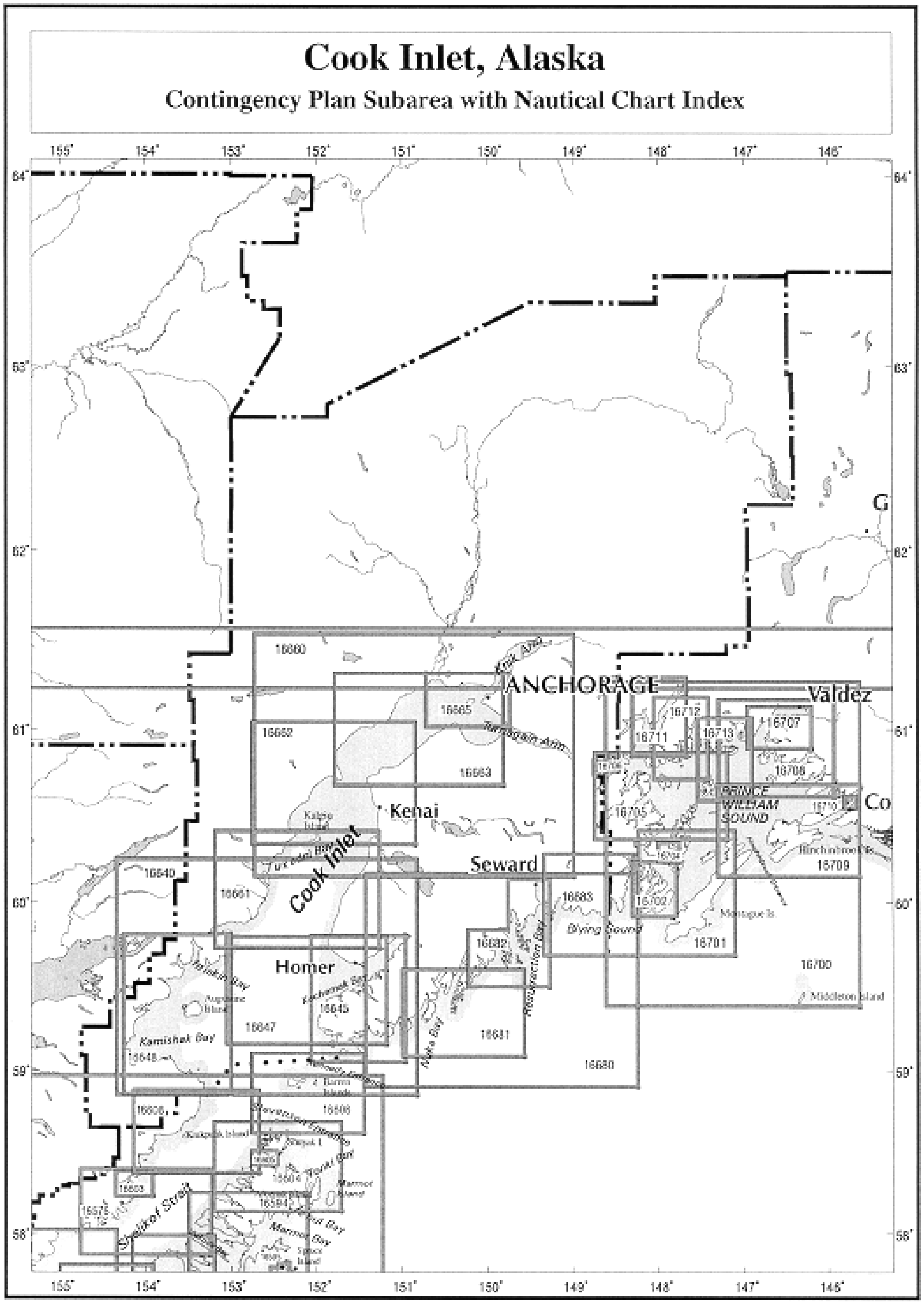


Figure E-4: Cook Inlet Nautical Chart Map Index



3. Climate

The Cook Inlet area climate is generally transitional, having properties of both a maritime and a continental climate. As moisture-laden air masses from the Gulf of Alaska are lifted by the Kenai Mountains, condensation forms rain or snow. Most of the precipitation is deposited on the windward side and tops of the mountains. The southern coast receives about 50 inches of precipitation a year. In some areas of the Kenai Mountains, annual precipitation exceeds 100 inches, falling mostly as snow. The upper Cook Inlet area receives 15 to 30 inches of precipitation a year.

A 1995 Minerals Management Service report on the Cook Inlet area noted that, generally, an inland high-pressure cell characterizes winter with frequent storm progressions from the west along the Aleutian chain. During summer, low pressure develops over the inland area, with reduced storm passage. Summer and fall are characterized by a transition between these generalized patterns (MMS, 1995).

Without the moderating effects of the Gulf of Alaska, air mass temperatures of the upper Cook Inlet Subarea are more extreme, as noted in a 1977 NOAA study. Occasionally during the winter months, this area will experience short periods of extreme cold and/or high winds when strong pressure gradients force cold air southward from interior Alaska. In winter and summer, moderately strong high-pressure cells develop over the coastal plains of Kenai and Anchorage and the Susitna Valley. The prevailing winds in Cook Inlet are generally from the north and northeast during the fall, winter, and spring, with common speeds between 0 and 11 knots. Conversely, southerly winds are more frequent during the summer months (NOAA, 1977), with prevailing storm tracks from the southeast.

The surrounding mountains influence wind patterns. On the western side of Cook Inlet are the Alaska and Aleutian (Alaska Peninsula) Ranges; on the eastern side are the Talkeetna, Chugach, and Kenai Mountains. The strongest surface winds occur in the coastal area. Offshore winds average between 12 and 18 knots; the winds are slightly less onshore because of surface friction. Extremes of 50 to 75 knots are common in the winter and can exceed 100 knots when channeled. Channeling occurs when surface features constrict winds. For example, water may flow in a wide ocean channel at a speed of five knots. If the channel narrows, the speed of the current increases in order to carry an equal volume of water in an equal amount of time. Wind reacts the same way. Valleys or mountain passes form narrow channels.

Under conditions common in the coastal mountains of Southcentral Alaska, wind speed may double or triple in narrow mountain channels. Ships traveling in the Gulf of Alaska have reported narrow bands of extremely strong winds flowing out of the valleys perpendicular to the Chugach Mountains. The strong winds found in the Turnagain Arm and Matanuska Valley are also examples of channeled winds.

4. Geology

Sporadic periods of glacial advance and retreat have resulted in complex geologic strata and horizons in the Kenai lowland, the west side of Cook Inlet, Susitna Valley, and west Anchorage. Glaciers are responsible for many distinctive land features such as alpine troughs, scraped and scoured valley floors, and broad outwash plains. Drainage patterns and glaciers often follow faults, carving out valleys and exposing ancient layered plains. The complex mixture of gravel, sand, silt, and clay deposited by glaciers is called till. The most common glacial deposits found in the region are moraines that are composed of glacial till laid down in fairly regular, low, linear hills at the edges of glaciers.

The coastal lowlands from Point Possession to the head of Kachemak Bay, including Kenai, Soldotna, and Homer, generally include low rolling glacial moraines and depressions filled by lakes and muskeg. Many rivers and streams flow through this area. Soils range from gravely clay loam to gravely sand mantled with silty material and bands of volcanic ash.

On the west side of Cook Inlet the coastal lowlands between Tuxedni Bay and Granite Point consist of nearly level, poorly drained outwash plains deposited by large glaciers in the Aleutian Range and Chigmit

Mountains. The outwash plains are braided with meandering and shifting stream channels. Most soils consist of sandy glacial outwash, silt, tidal sediments, and gravelly riverwash. The water table is high in most of this area with the exception of a few well-drained natural levees and ridges. North of Granite Point, soils and topography are similar to the coastal lowlands on the east side of Cook Inlet, with glacial moraines and depressions, pothole lakes, and soils formed from gravely clay, sand and silt.

5. Coastal Resources

As with all areas within Alaska, the Cook Inlet region supports a wide range of wildlife. Depending upon the location within the region, many offshore areas support a highly productive marine ecosystem, rich with intertidal, benthic, and pelagic plant and animal life which supports extensive populations of marine and anadromous finfish, shellfish, seabirds, and marine mammals. An assortment of shorebirds and waterfowl utilize the resources of the region, either as permanent residents or for nesting, wintering, or staging/feeding sites along their migratory paths. During the period when the ocean, lakes and rivers are thawed, the inland and shoreline areas become a haven for migratory waterfowl and other birds.

The rivers, lakes and streams in the subarea provide aquatic habitats for resident and anadromous fish important to commercial fisheries, subsistence harvests, and recreational activities. These fish resources are also a critical food source for upland populations of brown and black bears. In addition to the bears, moose, caribou, wolves, mountain goats, and numerous smaller mammals populate upland areas.

These resident and migratory populations of fish and wildlife depend on the availability of appropriate habitat and environmental conditions in order to exist in the Cook Inlet Subarea. A healthy coastline and continued abundance of marine, intertidal, and upland food sources are vital to the survival of the animal inhabitants of the region, and extremely important to the social, economic, and cultural welfare of local human residents. For additional information on fish and wildlife diversity and abundance in the Cook Inlet Subarea, refer to the Sensitive Areas Section in this plan.

Several communities rely on marine mammals as a traditional food source, and these mammals are present in concentrated areas during certain times of the year. Additionally, some residents engage in a subsistence lifestyle and rely heavily on the availability of the resources in the area. Any spill of significance could devastate the subsistence food harvest and seriously threaten the normal means of existence for many residents. Long-term impacts to these food resources could have a disastrous effect on Native and subsistence lifestyles. The Sensitive Areas Section provides detailed information on the specific resources vulnerable to spills and the locations of these resources within the subarea.

6. Oceanography

a. Bathymetry: Cook Inlet is a semi-enclosed coastal body of water having a free connection to the open sea and within which the seawater collides with freshwater from land drainage. Cook Inlet channels, coves, flats, and marshes are nourished by the constant mixing of terrestrial source waters and marine waters of Shelikof Strait and the Gulf of Alaska (MMS, 1995)

The bottom of Cook Inlet is extremely rugged with deep pockets and shallow shoals. The depths in the upper inlet north of the Forelands are generally less than 120 feet, with the deepest portion located in Trading Bay, east of the mouth of the McArthur River. South of the Forelands, two channels extend southward on either side of Kalgin Island and join in an area west of Cape Ninilchik. South of the cape, this channel gradually deepens to approximately 480 feet and widens to extend across the mouth of Cook Inlet from Cape Douglas to Cape Elizabeth (KPB, 1990:1-4). The bottom of Cook Inlet consists predominately of cobbles, pebbles, and sand with minor proportions of silt and clay.

NOAA navigational charts indicate the depths in Cook Inlet range between 30 and 60 fathoms (180 and 360 feet) in the lower portion of the Inlet, between 20 and 30 fathoms (120 and 180 feet) in the middle section (between Anchor Point and the Forelands), and between 5 and 15 fathoms (30 and 90 feet) in the upper portion of the inlet. However, the charts also indicate the presence of reefs, mud flats, and shoals along the middle section of Cook Inlet, particularly around Kalgin Island and near Trading Bay.

b. Tides & Currents: Hydrographic surveys have indicated a net inflow of relatively clear, saline water from the Gulf of Alaska along the eastern side of the lower inlet, while relatively fresh, silt-laden water flows out the inlet on the west side.

Tides in Cook Inlet are semidiurnal, with two unequal high tides and two unequal low tides per tidal day (24 hours, 50 minutes). The mean diurnal tidal range varies from 18.7 feet at Homer to 29.6 feet at Anchorage. This high tidal range distinguishes Cook Inlet's coastal ecosystem from others in the Pacific Northwest.

The mixing of incoming and outgoing tidewater, combined with freshwater inputs, is the main force driving surface circulation (MMS, 1995) **(see Figure E-5)**. Strong tidal currents and inlet geometry produce considerable cross currents and turbulence within the water column. Tidal bores of up to 10 feet have occurred in Turnagain Arm. Bottom current speeds of 1.2 to 1.8 knots can be estimated from the formation of sand bottom waves in the mud flats. Current velocities are also influenced by local shore configuration, bottom contour, and, possibly, wind effects in some shallow areas. Maximum surface current speeds average about three knots in most of the inlet, but currents may exceed 6.5 knots in the Forelands area and speeds of up to 12 knots have been reported in the vicinity of Kalgin Island and Drift River.

There are many tidal rips in Cook Inlet, including three major ones that are persistently found east of Kalgin Island between Anchor Point and the Forelands. These major tide rips are known as the East Rip, the Mid-Channel Rip, and the West Rip (See Figure E-6). A tide rip, as defined by David Burbank in Environmental Studies of Kachemak Bay and Lower Cook Inlet (1977), is a

> frontal zone (separating different water masses) along which convergence of surface water occurs. Such convergence generally results in the more dense water mass flowing underneath the less dense, leaving floating debris behind at the surface and thereby producing the accumulations of debris found along the rips. These zones of convergence are also normally accompanied by considerable horizontal shear, manifested by sharply differing current velocities on either side of the frontal zone. The major rips (frontal zones) thus constitute natural tracers delineating the boundaries between differing surface currents.

Tide rips are significant features of Cook Inlet that can affect an oil spill response, since not only do they vary throughout a 24-hour period, but they extend from north of the Forelands to lower Cook Inlet (**see Figures 5 through 8 below**). In fact, the dominant rip, the Mid-Channel Rip, may extend as far south as Shelikof Strait. The Mid-Channel Rip, in the region south of Ninilchik, generally forms the dividing line between clear oceanic water in the eastern inlet and the relatively fresh, silt-laden water in the western inlet (Burbank, 1977). During flood tides, these rips strengthen, and debris is consolidated by the strong surface water convergence, especially along the major rips. Along the zone of the Mid-Channel Rip, a turbulent region of boiling water and large waves is produced. The intensity of the convergence is such that the roaring noise produced by the turbulence can be heard up to 1/4 nautical mile away. Fishing nets and logs are sometimes observed to be pulled under, surfacing again some distance away. During ebb tide, however, the energy is reduced, allowing for collected debris to be spread out as far as 1.5 nautical miles (3 km). The debris can be entrapped for days in this cycle.

c. Sediment and Salinity: Cook Inlet receives immense quantities of glacial sediment from the Knik, Matanuska, Susitna, Kenai, Beluga, McArthur, Drift, and other rivers. This sediment is redistributed by the intense tidal currents. Most of this sediment is deposited on the extensive tidal flats or is carried offshore through Shelikof Strait and eventually deposited in the Aleutian trench beyond Kodiak. Powered by the Alaska Coastal Current, sediments of the Copper River drainage drift into lower Cook Inlet and Shelikof Strait where they eventually settle to the bottom. Recent survey results of the MMS indicate that about half of the bottom sediments in Shelikof Strait are from the Copper River.

Longshore transport of sediment within Cook Inlet is generally up the inlet, although Kamishak, Tuxedni and Kachemak Bays are areas where this trend is reversed. Homer Spit, in fact, is maintained by longshore sediment transport from the north. Rain and snow events and glacial dam flooding also deposit significant amounts of sediment into Cook Inlet.

Salinity increases rapidly and almost uniformly down the inlet, from Point Possession to East and West Foreland. Slightly higher salinities are found on the east side. This rapid increase can be attributed to heavily loaded glacial runoff from the Matanuska, Susitna and Knik Rivers and subsequent sediment settling in upper Cook Inlet. Local areas of depressed salinity occur off the mouth of large glacially-fed streams, such as the Tuxedni, Kenai, and Kasilof Rivers.

d. Water Temperature and Ice Conditions: The water temperature in upper Cook Inlet varies with season from 32° to 59° F. The lower Cook Inlet is affected by the intrusion of warmer waters from the Gulf of Alaska; temperatures range from 42° to 50° F.

Sea ice is normally present in upper Cook Inlet from December through March, and occasionally from November to as late as April. During winter, 100 percent ice coverage may be found in some areas in upper Cook Inlet, and substantial amounts of ice may be present as far south as Kamishak Bay. (NOAA, 1977)

The ice in Cook Inlet comes from four different sources: sea ice, beach ice, stamukhi, and estuary and river ice. Sea ice forms in seawater and is the predominant type in Cook Inlet. Beach ice is composed of frozen mud exposed to the air by the ebbing tide. At flood tide, water in contact with the frozen mud also freezes.

Stamukhi are comprised of beach ice that has broken free, been deposited higher on the mud flats, and frozen to the underlying mud. Ice floes floating toward the beach are caught on top of the higher piece of ice and as the tide recedes, the overhanging pieces break off, leaving a stack of layered ice. Estuary ice forms in estuaries and river ice in rivers: both are comprised of freshwater. River ice is much harder than sea ice and is unaffected by tidal action until spring breakup.

The primary factor for ice formation in upper Cook Inlet is air temperature, while the major influences in lower Cook Inlet are the Alaska Coastal Current temperature and inflow rate. Cook Inlet ice often first forms in October and melts before ice of a more permanent nature forms in the latter half of November. All ice generally disappears in early April, but some occasionally persists into May. Ice occasionally drifts as far south as Anchor Point. Ice concentrations have been observed in Kamishak Bay extending outward to Augustine Island. Chinitna, Tuxedni and other western Cook Inlet bays may also have occasional ice cover.

Figure E-5: Cook Inlet – Surface Currents & General Rip Zones

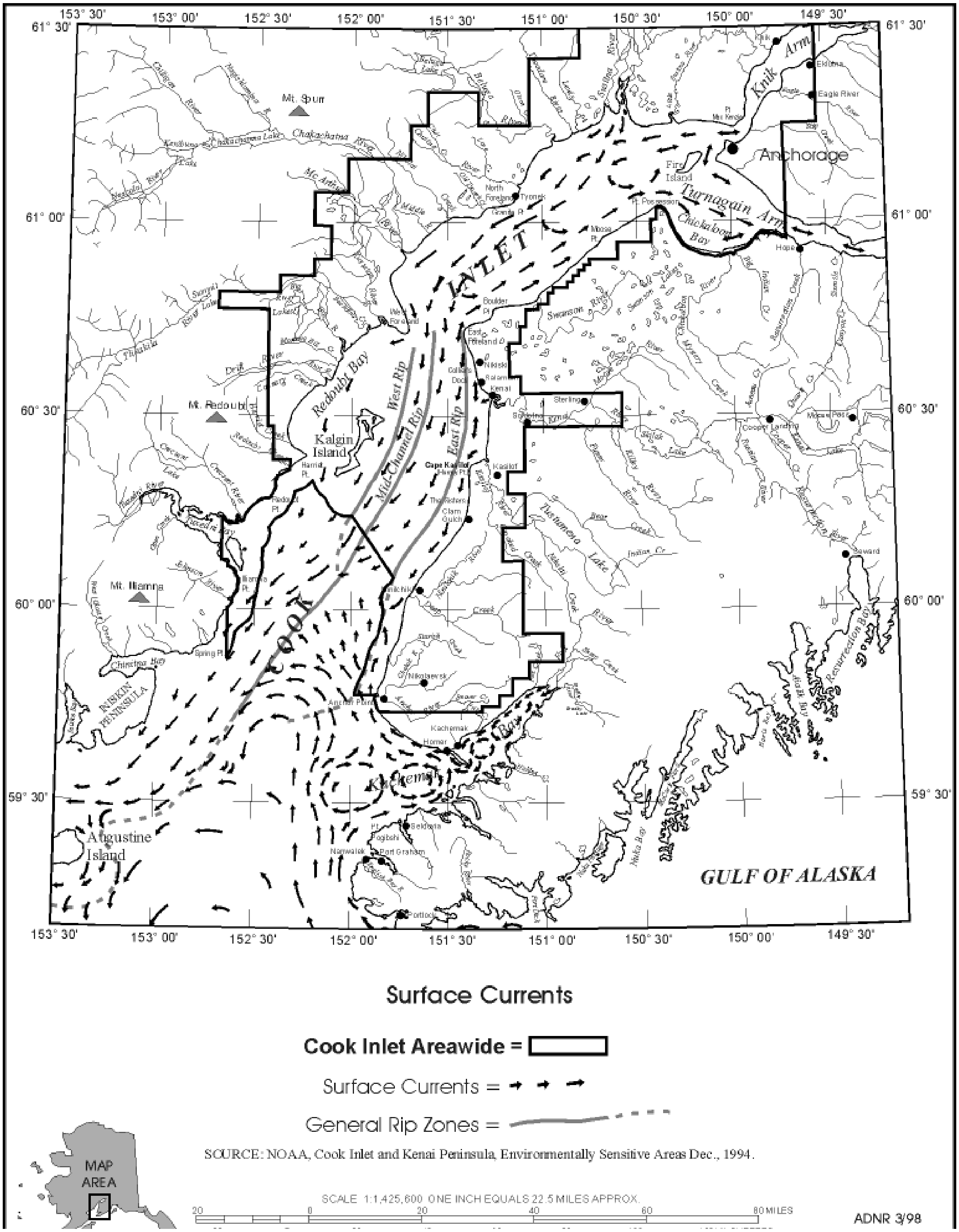


Figure E-6: Middle Cook Inlet Net Circulation & Convergence Zones
(Source: Whitney, J.W. "Proceedings: Cook Inlet Oceanography Workshop" OCS Study, Final Report, June 2000)

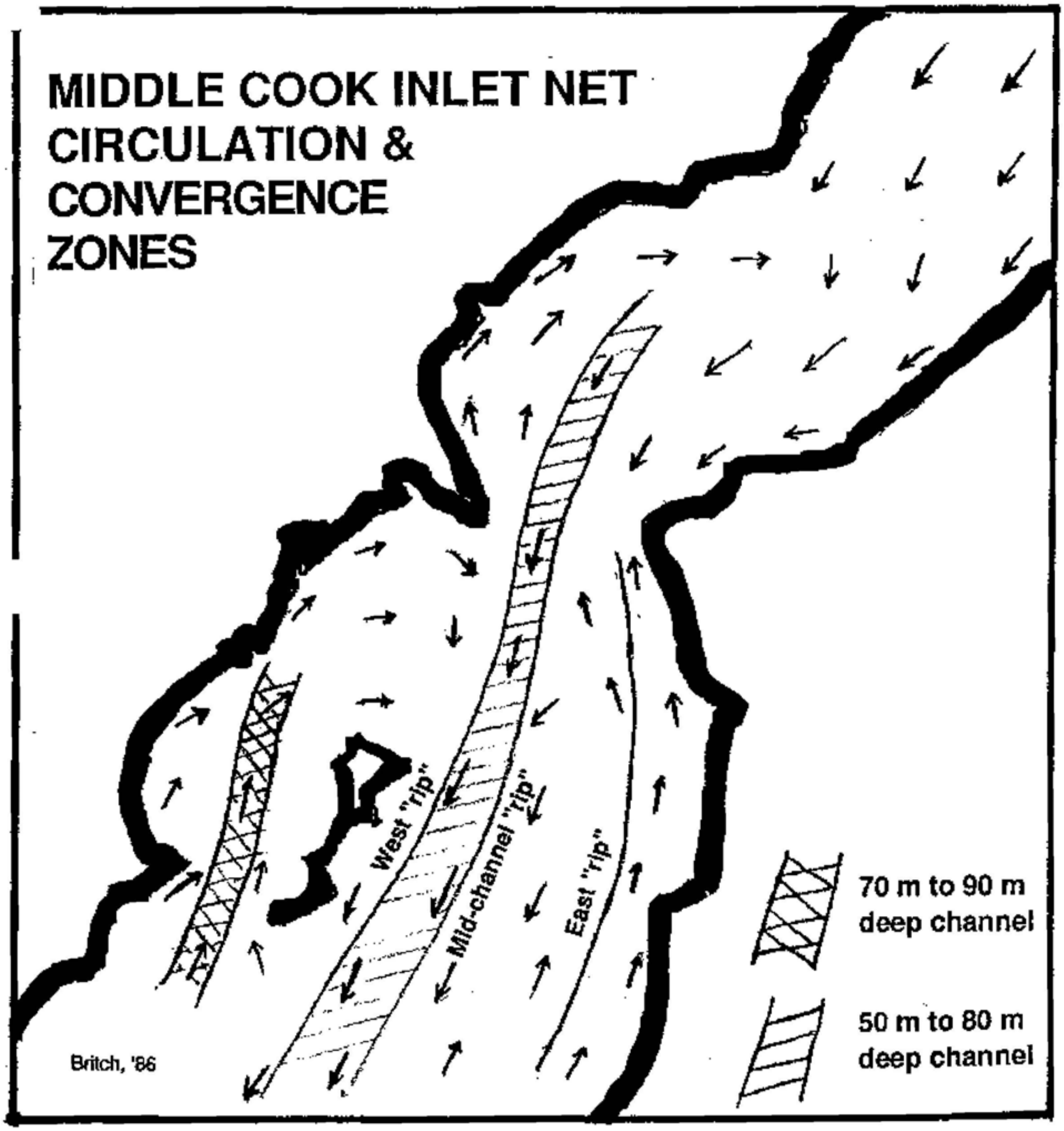


Figure E-7: Major Tide Rips (Flood and Ebb Tides) in Lower Cook Inlet

(Source: Whitney, J.W. "Proceedings: Cook Inlet Oceanography Workshop" OCS Study, Final Report, June 2000)

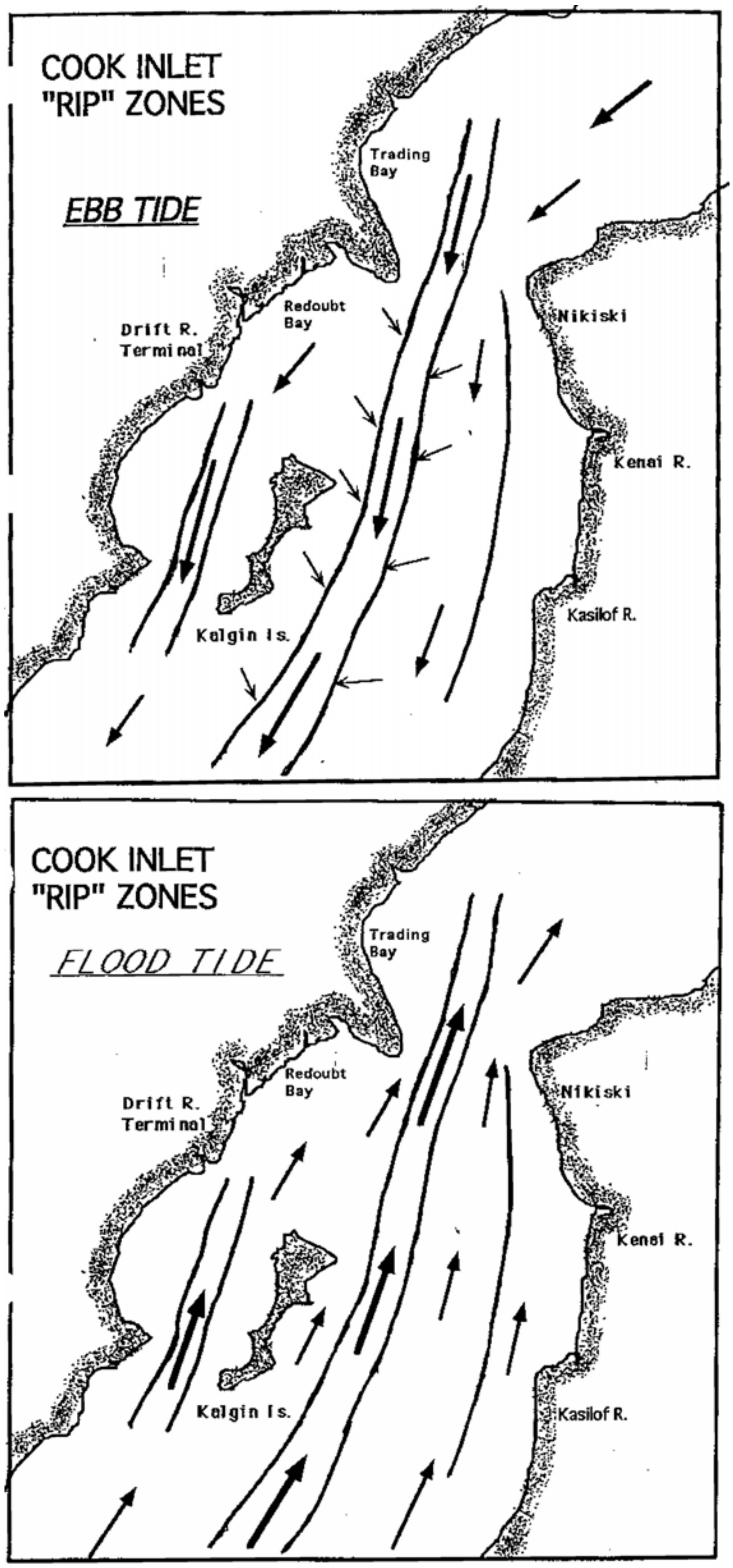
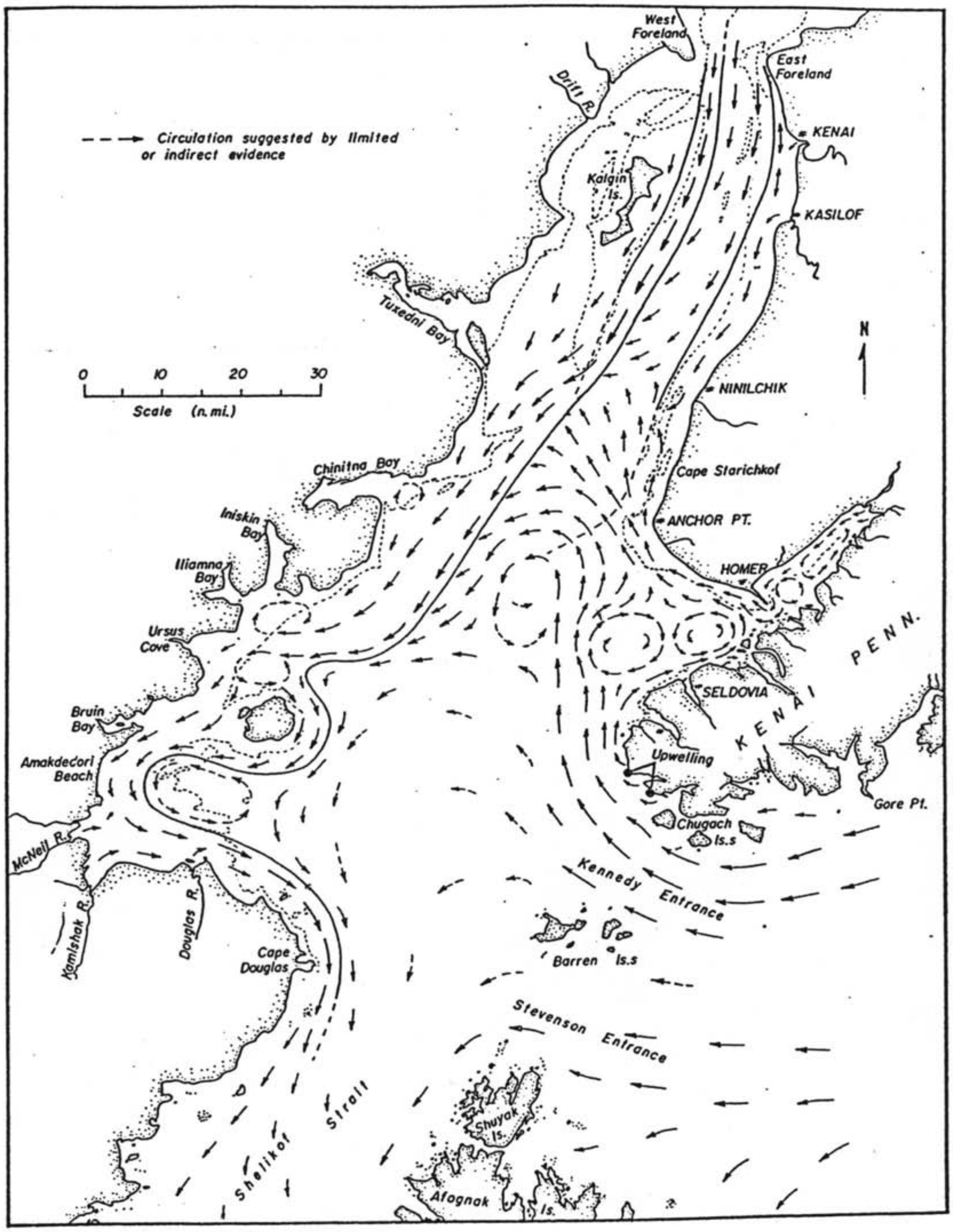


Figure E-8: Net Surface Circulation in lower Cook Inlet

(Based primarily on data collected during the spring and summer seasons. Burbank 1977)



7. Early History of the Region

It is not known exactly how long Alaska Native peoples have lived in the Cook Inlet area. It is believed they arrived with the melting of the glaciers that covered the area until about 10,000 B.C., and that by A.D. 500 to 1000, Athabascan-speaking Dena'ina arrived in the region. The earliest Dena'ina likely lived in nomadic bands and eventually developed permanent homes and communities, tracing their ancestors through their mothers and grandmothers. Like the Dena'ina, the nearby Ahtna Athabascans of Southcentral Alaska took advantage of the teeming plant and animal resources, as well as the relatively more moderate climatic conditions (when compared to interior Alaska), to develop an astonishing degree of sophistication and complexity in their culture. At the time of the Russian arrival into the region in the late 1700s, there were an estimated 3,000 to 5,000 Dena'ina living in dozens of settlements. Newly introduced illnesses and diseases cut down many Alaska Native people, and Alaska Native populations declined by more than 50 percent.

8. Economic Development in the Cook Inlet Vicinity

Though the early Russians noted oil seepages on the land at Iniskin Bay and Cold Bay on the Alaska Peninsula during their 125-year occupation of Alaska, they made no attempts to do anything about the finds. Nor was there any petroleum exploration or development in the years following the American purchase in 1867. The first oil claims in Alaska were filed in the 1890s on the Iniskin Peninsula, due west of Homer, on the west shore of Cook Inlet. In 1898 the first Alaska wells were drilled there, striking small amounts of oil, but also tapping seawater. The oil flows were not enough to support the commercial production of oil.

The discovery of the large Swanson River oil field on the Kenai Peninsula in 1957 caused great interest from potential oil investors, such as the Richfield Oil Company of California, Phillips, Marathon, and Unocal, as well as Shell, Sunray, Mobil, Chevron and Texaco. Richfield was the first to drill and struck oil with their first well. The discovery, reported on July 15, 1957, tested at 900 barrels a day, the first major, commercial discovery in Alaska .Other companies quickly began drilling programs in the area, and in 1959, Unocal discovered a major natural gas field near the Swanson River oil field.

In 1960, following the statehood of Alaska and the creation of the state natural resources agencies, oil companies bought exploration leases for work in Cook Inlet. Two years later the Middle Ground Shoal oil field was discovered off Port Nikiski, at the same latitude as the onshore Swanson River field. Production began from Middle Shoal in 1967. Since then twenty successful wells have been drilled in upper Cook Inlet. All but four are in production at this time. Nearly 1.3 billion barrels of oil have been pumped, along with 5 trillion cubic feet of natural gas. The Cook Inlet oil and gas area is classified as a moderate-sized deposit.

Most activities are concentrated in the East Forelands area, between Kenai and Nikiski, and along Trading Bay, between West Foreland and North Foreland. Offshore platforms are also located in Trading Bay and in the upper portions of Cook Inlet. Several submerged pipelines cross the inlet in this area as well. Refined products are stored in tank farms in Anchorage and other areas of upper Cook Inlet. The area includes onshore and offshore crude oil production facilities, major crude oil and non-crude oil storage, and terminal facilities in Anchorage, Nikiski, and Redoubt Bay.

The impact of the Cook Inlet development on the communities of the area, from the Native village of Tyonek on the west side to Anchorage on the east, has been significant. Kenai, the village nearest the major development, was home to about 500 people in 1957. The boom in economic development and population growth after the discovery of oil was immediate and continued for years. Most of the existing work force and many new settlers went to work for the oil companies. Commercial development followed, including shopping malls in Kenai and Soldotna in the late 1970s; today, the population of Kenai is about 7,000, and nearly 4,000 live in nearby Soldotna. The population of all of the Kenai Peninsula Borough, which includes Seward, Homer, and Tyonek, is nearly 50,000. Though the economy of the Cook Inlet region is very dependent on petroleum and gas production, both have declined over the past decade, and there are now predictions that they will probably continue to decline. This is consistent with the "boom - bust" character of Alaska, dependent on one natural resource to support modern settlement and economic development.

The waters of Cook Inlet are widely used for marine commerce. Log transport ships, fuel barges, freighters, oil industry work boats, and cruise ships make routine stops at Cook Inlet ports. Also, commercial fishing boats, sport fishing charter boats, and privately-owned vessels regularly use local harbors and docks.

The Cook Inlet Subarea also contains the southern half of the Alaska Railroad system, which transports passengers and cargo, including oil and hazardous substances, from Seward and Whittier to Anchorage and Fairbanks. The majority of the State's highway system is also located in this subarea, with major roadways linking Anchorage with communities to the south on the Kenai Peninsula and to the north in the Matanuska-Susitna Borough and beyond.

C. AREA OF RESPONSIBILITY

This subarea contingency plan covers the region outlined above in subpart B. The USCG Captain of the Port (COTP) is the predesignated FOSC for the Coastal Zone which encompasses all navigable waters seaward of the mean high tide line and an area of shoreline 1,000 yards inland of the coastline. The Environmental Protection Agency is the predesignated FOSC for the Inland Zone which encompasses all lands, rivers, streams, and drainages inland of the 1000-yard wide band that parallels the Alaskan coastline. These zones are clearly defined in the Unified Plan. It is possible that incidents may occur in locations that do not fall under federal jurisdiction, and there will be no FOSC in these instances.

The State of Alaska places jurisdiction of spill response for the Cook Inlet Subarea under the Central Alaska Response Team (CART) of the Department of Environmental Conservation. The SOSC for the CART is the predesignated SOSC for the entire Cook Inlet Subarea.

Memoranda of Understanding/Agreement (MOU/MOA) between the USCG/USEPA and the USEPA/ State of Alaska further delineate the OSC responsibilities. **Annex K of the Unified Plan** includes copies of these MOUs/MOAs.

D. <u>REGIONAL STAKEHOLDER COMMITTEE</u>

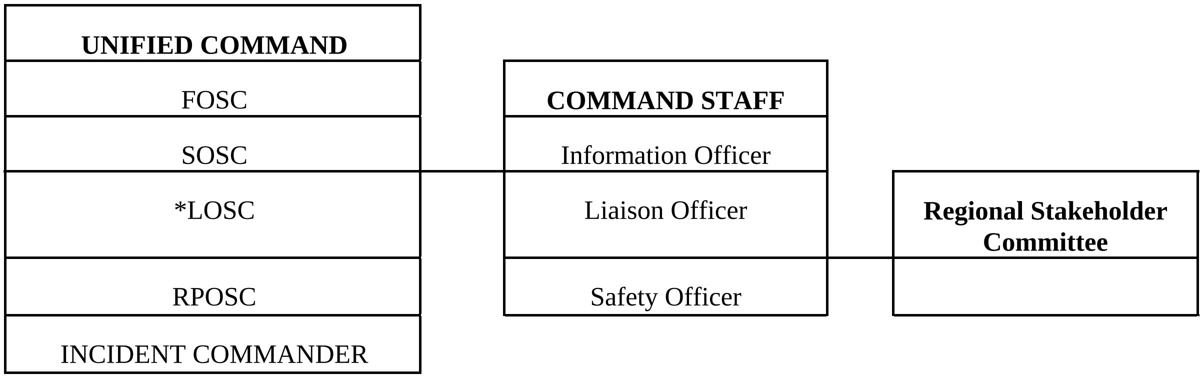
A Regional Stakeholder Committee (RSC) will normally be activated for significant incidents that involve resources under the jurisdiction of several agencies. The RSC was previously referred to as the Multi-Agency Coordination Committee (MAC). Unlike the MAC defined in the ICS of the National Interagency Incident Management System, the RSC for a spill response does not play a direct role in setting incident priorities or allocating resources. The RSC can advise the Unified Command (under the guidance of the Community Liaison Officer) and provide comments and recommendations on incident priorities, objectives and action plans.

Figure 3 provides the general location of the regional RSC in relation to the Unified Command organizational structure. Additionally, the suggested/potential membership of the RSC is provided in Figure 3. Membership on the RSC is dependent upon the location of the incident and the interests or jurisdiction of the affected communities, landowners, and special interest groups. During incidents where there is no FOSC, federal agencies with jurisdictional responsibilities for resources at risk could participate as a member of the RSC, thus retaining their input on containment, oversight, and cleanup.

As indicated above, the RSC is not directly involved in tactical operations, though some of its members may be. The RSC's role is to convey to the Unified Command information relating to the authority, concerns and expertise of its members. RSC members recommend to the Unified Command overall objectives and priorities and review the Incident Action Plans.

RSC activities will be coordinated by the Community Liaison Officer. RSC discussions will be documented and recommendations and dissenting opinions occurring outside of RSC meeting with the Unified Command will be communicated to the Unified Command through the Liaison Officer. The RSC will be chaired initially by the Community Liaison Officer. After convening, the RSC will then elect its own chair.

Figure E-9: Cook Inlet Regional Stakeholder Committee ICS Organizational Position and Membership



Suggested Membership:

- Cook Inlet Regional Citizens Advisory Council
- Representatives or Community Emergency Coordinators from affected communities. These may include:
  - Alexander Creek
  - Anchorage
  - Big Lake
  - Butte
  - Chase
  - Chickaloon
  - Clam Gulch
  - Cohoe
  - Cooper Landing
  - Crown Point
  - Fox River
  - Fritz Creek
  - Funny River
  - Girdwood
  - Halibut Cove
  - Happy Valley
  - Homer
  - Hope
  - Houston
  - Jakolof Bay
  - Kachemak
  - Kalifonsky
  - Kasilof
  - Kenai Peninsula Borough
  - Kenai
  - Knik/Fairview
  - Lazy Mountain
  - Matanuska-Susitna Borough
  - Meadow Lakes
  - Moose Pass
  - Nanwalek
  - Nikiski
  - Nikolaevsk
  - Ninilchik
  - Palmer
  - Port Graham
  - Primrose
  - Ridgeway
  - Salamatof
  - Seldovia
  - Seward
  - Skwentna
  - Soldotna
  - Sterling
  - Sutton
  - Talkeetna
  - Trapper Creek
  - Tyonek
  - Wasilla
  - Willow
- Federal/state/local or private landowners and leaseholders (e.g., National Parks Service, Alaska Dept of Natural Resources)
- Federally-recognized tribes, Native corporations, organizations and communities
- Special interest groups affected by the incident

* The Local On-Scene Coordinator is part of the Unified Command and serves as the Incident Commander during an incident as long as there is an immediate threat to life, health and safety.

E. REGIONAL CITIZENS ADVISORY COUNCIL

The Cook Inlet Regional Citizens Advisory Council (RCAC) is a local citizens group with an Oil Pollution Act of 1990-mandated role in Cook Inlet spill response activities. In this role, the RCAC participates with the incident management team at the emergency operations center and monitors on-water activities during a spill. The RCAC has four primary tasks to perform during a spill: observe, verify, inform, and advise.

By observing and verifying emergency spill response and cleanup efforts, the RCAC is able to properly inform local residents, communities and concerned groups. The RCAC also provides information on local knowledge and concerns to incident commanders that can prove valuable to operational decisions. The RCAC is a resource for the Unified Command and participates in the Regional Stakeholder Committee when it is established and functioning for a spill response.

Specific responsibilities of the RCAC include:

- Providing a voice for local communities and citizens in the policies and decisions that affect them.

- Advising the oil industry and the public on oil spill prevention and response, and ways to mitigate the environmental impact of terminal, offshore oil facilities, and tanker operations.

- Monitoring terminal, tanker, and offshore oil facilities operations and implementation of spill prevention and response plans.

- Increasing public awareness of private oil industry's current capabilities in spill prevention and response, and the environmental impacts of oil transportation.

- Fostering long term partnership between industry, government and local communities.

- Conducting independent research.

- Participating in, monitoring, and critiquing actual spill responses, spill drills, deployment exercises, and spill simulations conducted by industry. The RCACs also assist industry and regulatory agencies in drill planning and post-drill evaluations.

- Participating in the Regional Stakeholder Committee.

- Preparing and maintaining an RCAC Emergency Response Plan outlining the Council's role and operating procedures in the event of a major spill.

F. SUBAREA COMMITTEE

The primary role of the Subarea Committee is to act as a preparedness and planning body for the subarea. The Subarea Committee consists of the predesignated FOSCs and SOSC for the subarea and, depending upon the event or the issues to be addressed, local government representatives. Each member is empowered by their own agency to make decisions on behalf of the agency and to commit the agency to carrying out roles and responsibilities as described in this plan and the Unified Plan.

The Subarea Committee is encouraged to solicit advice, guidance or expertise from all appropriate sources and establish work groups as necessary to accomplish the preparedness and planning tasks. Work group participants may include facility owners/operators, shipping company representatives, cleanup contractors, emergency response officials, marine pilot associations, academia, environmental groups, consultants, response organizations and representatives from regional citizens' advisory councils.

Subarea Committee Members

The Cook Inlet Subarea Committee is comprised of the following:

Alaska Department of Environmental Conservation
U.S. Coast Guard, COTP Western Alaska
U.S. Environmental Protection Agency
Kenai Peninsula Borough
Matanuska-Susitna Borough
Municipality of Anchorage

The Cook Inlet Subarea Committee also seeks advice and expertise concerning environmental and economic issues from local agencies and private industries such as:

Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Military and Veteran Affairs
Alaska Railroad Corporation
Alaska Chadux Corporation
Cook Inlet Spill Prevention and Response, Inc.
Cook Inlet Regional Citizens Advisory Council
Local Emergency Planning Committees
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Tesoro Alaska Petroleum Co.
U.S. Department of the Interior
U.S. Forest Service

Subarea Workgroups

The Cook Inlet Subarea Committee relies on the input from the three workgroups listed below. The Subarea Committee welcomes interested participants to serve on work groups in accordance with each individual's area of expertise and the particular needs of the work groups.

The Sensitive Areas Work Group is chaired by a representative from the Department of the Interior. The primary purpose of the Sensitive Areas Work Group is to develop and maintain the Sensitive Areas Section of the plan.

The Logistics Work Group is chaired by a representative from the ADEC. The primary purpose of the Logistics Work Group is to develop and maintain the Resources Section of the plan.

The Operations Work Group is chaired by representatives from the U.S. Coast Guard and EPA. The primary purpose of the Operations Work Group is to develop and maintain the Response Section, the Hazmat Section, and the Scenarios Section of the plan.

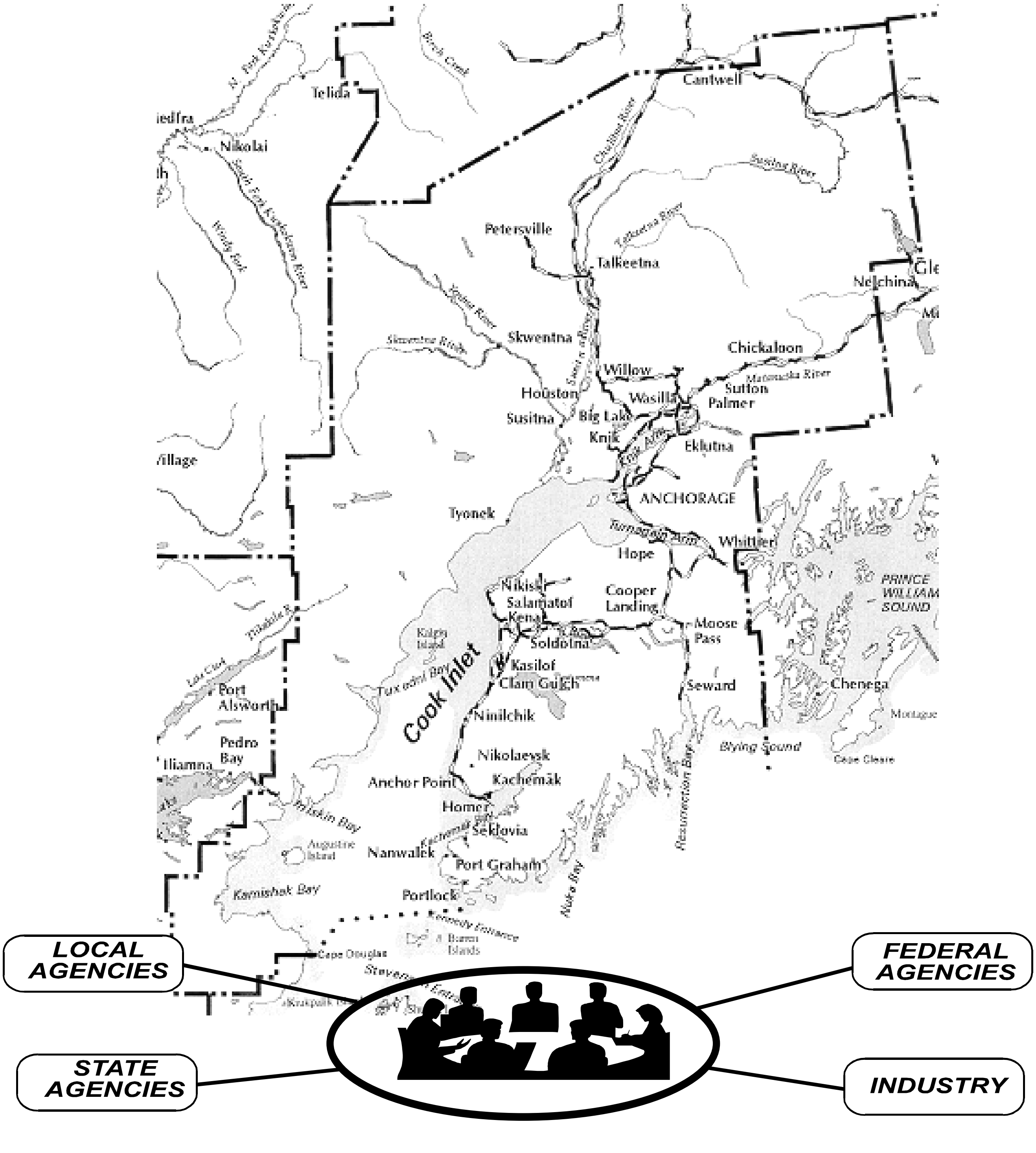
Each of the above work groups are also involved in reviewing and providing comments on the other sections of the plan (including the Geographic Response Strategies Section and the Potential Places Refuge Section.)

Membership on the work groups can vary and fluctuate; the list below provides some of the regular participants over the years:

Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Military and Veterans Affairs
Alaska Railroad Corporation
Alaska Chadux Corporation
Cook Inlet Spill Prevention and Response, Inc.
Cook Inlet Regional Citizens Advisory Council
Kenai Peninsula Borough
Matanuska-Susitna Borough
Municipality of Anchorage
Representatives from LEPCs and other local governments
National Marine Fisheries Service
NOAA Scientific Support Coordinator
U.S. Coast Guard, COTP Western Alaska
USCG 17th District
U.S. Coast Guard Marine Safety Detachment Kenai
U.S. Department of Defense
U.S. Department of Interior
U.S. Environmental Protection Agency
U.S. Forest Service
Agrium U.S. Inc.
Crowley Maritime
Forty-Niner Remediation and Oilspill Group
Tesoro Corporation
Unocal Corporation
Representatives from other industry and commercial concerns

Figure E-10:

PLANNING ORGANIZATION
COOK INLET SUBAREA CONTINGENCY PLAN



BACKGROUND: PART TWO – RESPONSE POLICY AND STRATEGIES

The strategy for responding to a specific spill or hazmat incident depends upon numerous factors. The strategy can change as the situation changes. As a general rule, the strategies listed below should be used as a guide in developing an effective response. Consider all factors that may affect the particular situation and revise/modify/expand these priorities as the situation dictates. The strategies are further delineated in the procedures contained in the Response Section. Additional information can be found in the **Unified Plan**.

A. FEDERAL RESPONSE ACTION PRIORITIES/STRATEGIES

The following priorities are general guidelines for response to a pollution incident within the COTP Western Alaska zone. They are based on the premise that the safety of life is of paramount importance in any pollution incident, with the protection of property and the environment, although important, being secondary. Nothing in this part is meant to indicate that higher priority items must be completed before performing a lower priority task. They may be carried out simultaneously or in the most logical sequence for each individual incident.

Priority One - Safety of Life - for all incidents which may occur, the safety of personnel, including response personnel, must be given absolute priority. No personnel are to be sent into an affected area without first determining the hazards involved and that adequate precautions have been taken to protect personnel.

Priority Two - Safety of Vessel/Facility and Cargo - the facility and/or vessel and its cargo shall become the second priority.

Priority Three - Protection of the Environment by elimination of the pollution source - containment and recovery of oil in the open water must be effected expeditiously to preclude involvement of the beaches and shorelines. Due to remote locations and restricted accessibility, it is extremely difficult to protect the majority of the coastline by diversion or exclusion methods. Therefore, securing the source and open water containment and recovery is especially critical and should normally be the first line of defense to protect the environment. Likewise, spills which occur on land or in upland water courses will be dammed, boomed, diked, etc., as feasible to prevent the spread of the pollutant downstream. NOTE: *In situ* burning (Unified Plan, Annex F for checklist) of a vessel and its pollutant may be an alternative considered by the FOSCs; this strategy places environmental protection priorities above saving the vessel and its cargo.

Priority Four - Protection of the Environment by diversion/exclusion, dispersion, or in-situ burning. In the event that the location of a spill or the weather conditions do not permit open-water recovery, protection of the shoreline becomes paramount, especially those areas of greatest sensitivity. It is not possible to protect some areas entirely or even in part. It may be necessary to sacrifice some areas in order to achieve the best overall protection of the environment. The FOSC may consider *in situ* burning as a response option. Refer to the **Unified Plan** for an *in situ* burning checklist. The use of dispersants must be considered early in the response phase while the oil is in the open water. Subpart J of the NCP and the **Unified Plan (Annex F)** address in detail the responsibilities of the FOSC in the use of chemicals.

Priority Five - Protection of the Environment by beach cleanup and the use of Sacrificial Areas. It may not be possible to protect the entire shoreline from oil. In fact, it may be allowed purposely to come ashore in some areas as an alternative to damaging others. Selection of the proper shoreline cleanup technique depends on many different factors including the following:

- Type of substrate
- Amount of oil on the shoreline
- Depth of oil in the sediment

- Type of oil (tar balls, pooled oil, viscous coating, etc.)
- Trafficability of equipment on the shoreline
- Environmental or cultural sensitivity of the oil shoreline
- Prevailing oceanographic and meteorological conditions

The best way to minimize debate over the most appropriate response is to involve all interested government and private agencies. The shoreline assessment groups shall attempt to agree on the amount and character of the oil that is on the shorelines, anticipate interactions between the stranded oil and the environment, and the geological and ecological environment of the involved shorelines. Once a consensus is met, a process is necessary to determine the proper treatment required.

Shoreline cleanup options may include the use of physical and/or chemical processes. Physical shoreline cleaning methods include techniques such as natural recovery, manual sorbent application, manual removal of oiled materials, low pressure flushing (ambient temperature), vacuum trucks, warm water washing, high pressure flushing, manual scraping, and mechanical removal using heavy equipment. Chemical shoreline cleanup products may increase the efficiency of water-washing during the cleanup of contaminated shorelines. However, the product must be listed on the EPA National Contingency Plan Product Schedule and authorization must be obtained from the ARRT and the government on-scene coordinators at the spill. Bioremediation, which is the application of nutrients to the shoreline to accelerate the natural biodegradation of oil, can be considered as a shoreline cleaning method. The FOSC shall request the RRT to provide site-specific guidelines for source protection measures required during shoreline cleanup operations.

B. STATE OF ALASKA RESPONSE PRIORITIES

1. **Safety:** Ensure the safety of persons involved, responding, or exposed to the immediate effects of the incident.

2. **Public Health:** Ensure protection of public health and welfare from the direct or indirect effects of contamination of drinking water, air, and food.

3. **Environment:** Ensure protection of the environment, natural and cultural resources, and biota from the direct or indirect effects of contamination.

4. **Cleanup:** Ensure adequate containment, control, cleanup and disposal by the responsible party or supplement or take over when cleanup is inadequate.

5. **Restoration:** Ensure assessment of contamination and damage and restoration of property, natural resources and the environment.

6. **Cost Recovery:** Ensure recovery of costs and penalties to the Response Fund for response, containment, removal, remedial actions, or damage.

BACKGROUND: PART THREE – OIL FATE & RISK ASSESSMENT

A. FATE OF SPILLED OIL

Natural processes that may act to reduce the severity of an oil spill or accelerate the decomposition of spilled oil are always at work in the aquatic environment. These natural processes include weathering, evaporation, oxidation, biodegradation, and emulsification.

- Weathering is a series of chemical and physical changes that cause spilled oil to break down and become heavier than water. Winds, waves, and currents may result in natural *dispersion*, breaking a slick into droplets which are then distributed throughout the water. These droplets may also result in the creation of a secondary slick or thin film on the surface of the water.
- Evaporation occurs when the lighter substances within the oil mixture become vapors and leave the surface of the water. This process leaves behind the heavier components of the oil, which may undergo further weathering or may sink to the ocean floor. For example, spills of lighter refined petroleum-based products such as kerosene and gasoline contain a high proportion of flammable components known as *light ends*. These may evaporate completely within a few hours, thereby reducing the toxic effects to the environment. Heavier oils leave a thicker, more viscous residue, which may have serious physical and chemical impacts on the environment. Wind, waves, and currents increase both evaporation and natural dispersion.
- Oxidation occurs when oil contacts the water and oxygen combines with the oil to produce water-soluble compounds. This process affects oil slicks mostly around their edges. Thick slicks may only partially oxidize, forming *tar balls*. These dense, sticky, black spheres may linger in the environment, and can collect in the sediments of slow moving streams or lakes or wash up on shorelines long after a spill.
- Biodegradation occurs when micro-organisms such as bacteria feed on oil. A wide range of micro-organisms is required for a significant reduction of the oil. To sustain biodegradation, nutrients such as nitrogen and phosphorus are sometimes added to the water to encourage the micro-organisms to grow and reproduce. Biodegradation tends to work best in warm water environments.
- Emulsification is a process that forms *emulsions* consisting of a mixture of small droplets of oil and water. Emulsions are formed by wave action and greatly hamper weathering and cleanup processes. Two types of emulsions exist: water-in-oil and oil-in-water. Water-in-oil emulsions are frequently called "chocolate mousse," and they are formed when strong currents or wave action causes water to become trapped inside viscous oil. Mousse emulsions may linger in the environment for months or even years. Oil and water emulsions may cause oil to sink and disappear from the surface, thus giving the false impression that it is gone and the threat to the environment has ended.

B. GENERAL RISK ASSESSMENT

Each of the shoreside communities and remote settlements in the Cook Inlet Subarea faces the risk of oil or hazardous materials pollution from local shoreside facilities and/or vessel traffic. Considerable vessel traffic transits the waters of the Cook Inlet Subarea, ranging from small fishing and recreational vessels to large oil tankers and freight vessels. Both crude and refined oil products are shipped into Cook Inlet.

Most oil exploration and production activities are concentrated in the East Forelands area, between Kenai and Nikiski, and along Trading Bay, between West Foreland and North Foreland. Offshore platforms are also located in Trading Bay and in the upper portions of Cook Inlet.

Several submerged pipelines cross the inlet in this area. Noncrude products are stored in tank farms in Anchorage and other areas of upper Cook Inlet. The subarea includes onshore and offshore crude oil production facilities, major crude oil and non-crude oil storage, and terminal facilities in Anchorage, Nikiski, and Redoubt Bay.

The region also contains the southern half of the Alaska Railroad system, which transports passengers and cargo including oil and hazardous substances, from Seward and Whittier to Anchorage and Fairbanks.

The majority of the state's highway system is also located in this region with major roadways linking Anchorage with communities to the south on the Kenai Peninsula and to the north in the Matanuska-Susitna Borough and beyond.

In remote towns or villages, where refined products are stored in tank farms, the highest probability of spills occurs during fuel transfer of refined products to the tank farm from another source, such as the fuel barge, or from feeder lines from the tank farm onto users. Another threat for spills or chemical releases exists in the loading/unloading activities with vessels at port. This is not to say that these spills are common, but that precautions should be observed.

The various types of petroleum products respond quite differently when released into the environment. Spills of refined product that enter the water generally will disperse and experience significant evaporation and spreading, making recovery difficult (See above: *A. Fate of Spilled Oil*). Crude oil and Intermediate Fuel Oils (bunker fuel) will be affected by the same natural degradation factors but to a much lesser degree; these oil spills are "persistent" in nature and will require aggressive actions and innovative techniques to successfully mitigate harm.

Spills in this subarctic-maritime climatic zone require careful preplanning to overcome the effects imposed by the moist, cold-weather environment. Machinery and people face significant challenges when operating in acute cold. The severe stresses imposed by winter conditions, with extreme temperatures and the extended darkness, can seriously reduce individual efficiency over a given period.

Cold weather conditions can prove beneficial, at times: ice and snow can act effectively as natural barriers, impeding the spread of oil, and can be used effectively to create berms for spill containment. Techniques for organizing and responding to spills in arctic environments have been developed and applicable supporting information should be consulted during an event.

The summer months expose many more species, both in diversity and numbers, to the negative effects of an oil spills. Whereas in winter, most species have left the regions and the snow and ice conditions may buffer the soil from the affect of released oil, during the warmer months the land, flora and fauna are all quite vulnerable to an oil spill. Though summer daylight increases the available work hours to allow almost continuous operations, the extended light does not increase the number of hours response personnel can safely perform tasks.

BACKGROUND: PART FOUR – AREA SPILL HISTORY

A. COOK INLET SUBAREA OIL SPILL DATA 1995-2005

In 2007, ADEC staff completed and published the report "Ten Year Statewide Summary of Oil and Hazardous Substance Spill Data." This spill data analysis report provides findings related to spills reported to ADEC for the 10-year period extending from July 1, 1995 to June 30, 2005 [State Fiscal Year (FY) 1996-2005]. A 'static' data set was established, which allowed staff to carefully review and QA/QC data. The report covered the entire State and outlined the results for each of the ten subareas.

The data for the Cook Inlet Subarea presented some discernible trends:

- The total number of spills for the Cook Inlet Subarea appear to be on a decline after FY 2003. With the exception of FYs 1998 and 2000, there is no apparent trend to the overall spill volume. A series of Alaska Railroad train derailments in FY 2000 reflects the large increase in the spill volume for this FY.
- There also appears to be a seasonal trend in terms of when spills occur in the Cook Inlet Subarea. Spills appear to reflect the fishing season (May thru September), with a lesser number of spills during the October thru April timeframe.
- Within the Cook Inlet Subarea, Transportation and storage facilities combined to account for 81% of the total number of spills. Transportations facilities alone accounted for 74% of the total volume spilled.
- 53% of the total number of spills were directly attributed to Structural/Mechanical causes, followed by Human Factors at 30%. With regard to total volume, Structural/Mechanical causes produced 49% of the total spill volume, followed by Accidents at (26%), Other causes (13%), and Human Factors (12%).
- Noncrude oil was the most common product spilled at 85% of the total number of spills and 76% of the total volume released.

TOTALS FOR 1995-2005

Total Spills: 5,819 **Total Volume: 622,231**

Average Spill Size: 107 **Average Spills/Year: 582** **Average Volume/Year: 62,223**

TOP 5 CAUSES

Cause	***Spills***	***Gallons***
Derailment	9	132,946
Line Failure	531	129,493
Leak	842	69,523
Unknown	562	52,893
Overfill	910	32,061

TOP 5 PRODUCTS

Product	*Spills*	*Gallons*
Diesel	1,535	257,030
Aviation Fuel	460	133,885
Other	310	56,450
Produced Water	106	36,533
Ammonia	16	24,831

TOP 5 FACILITY TYPES

Facility Type	*Spills*	*Gallons*
Railroad Operation	127	160,760
Pipeline	51	134,511
Oil Production	606	66,654
Other	643	43,070
Vehicle	888	38,306

NOTE: The data summary above excludes spills reported in pounds and potential spills.

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Presented on the following five pages are selected tables, pie charts, and graphs from the Cook Inlet Subarea section of the above-referenced report.
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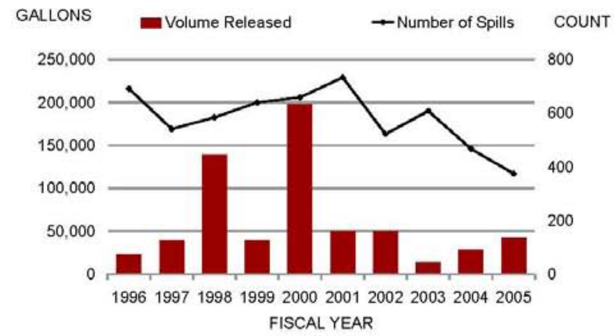
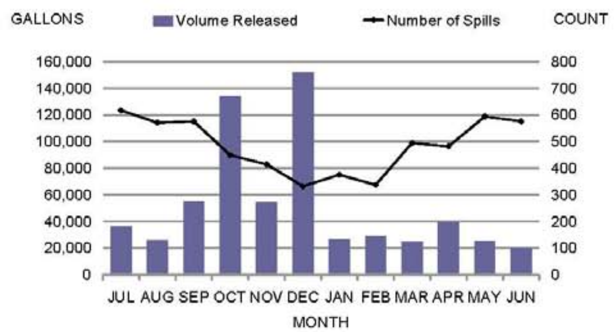
Summary Oil and Hazardous Substance Spills by Subarea, July 1, 1995-June 30, 2005

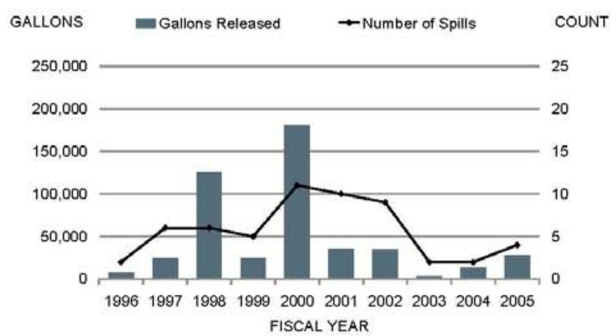
All Spills by Fiscal Year



All Spills by Month



Spills >1,000 gallons

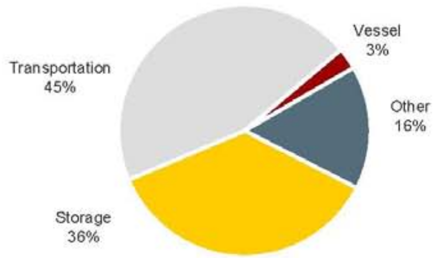


NOTE: Graphs do not include spills reported in pounds or potential spills.

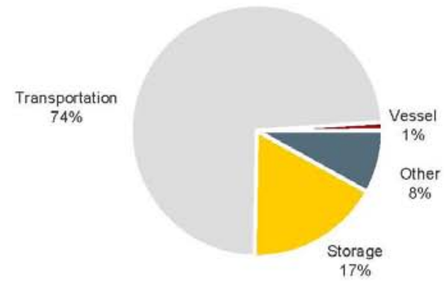
Summary Oil and Hazardous Substance Spills by Subarea, July 1, 1995-June 30, 2005

Cook Inlet Subarea Spills by Facility Type

Number of Spills

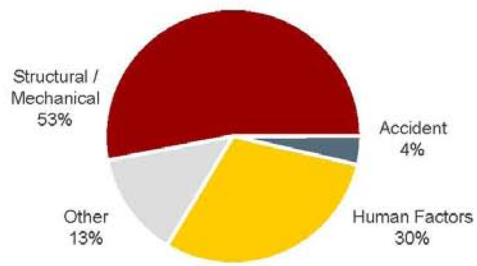


Gallons Released

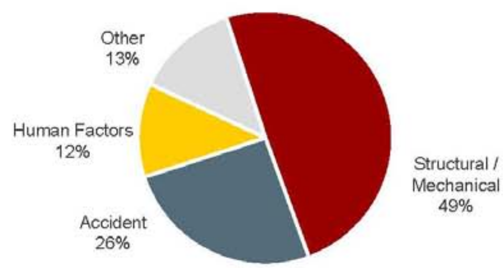


Cook Inlet Subarea Spills by Cause

Number of Spills

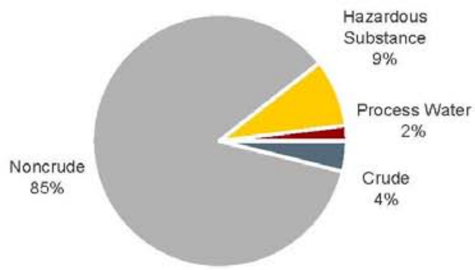


Gallons Released

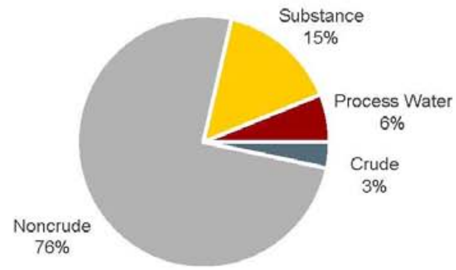


Cook Inlet Subarea Spills by Product

Number of Spills



Gallons Released



NOTE: Graphs do not include spills reported in pounds or potential spills.

Summary Oil and Hazardous Substance Spills by Subarea, July 1, 1995-June 30, 2005

Cook Inlet Subarea Spills by Size Class

- Approximately two-thirds of the spills during the report period were less than 10 gallons in volume.
- More than 90% of the total volume released resulted from spills larger than 99 gallons.

Number of Spills

Gallons Released

NOTE: Graphs do not include spills reported in pounds or potential spills.

Cook Inlet Subarea Spills at Regulated vs. Unregulated Facilities

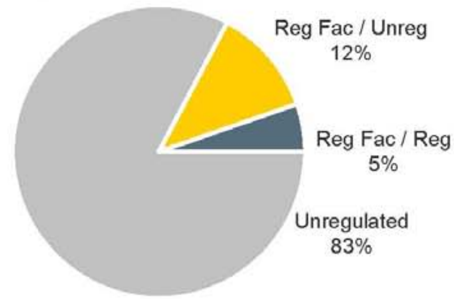
Numerous oil facilities and vessels operating in Alaska are subject to Alaska's spill response planning and financial responsibility statutes. This section summarizes spills from:

- facilities and vessels required by statute to have an approved oil discharge prevention and contingency plan; and,
- non-tank vessels which are required to have an approved certificate of financial responsibility are also included.
- Spills from underground storage tanks are not included in this analysis.

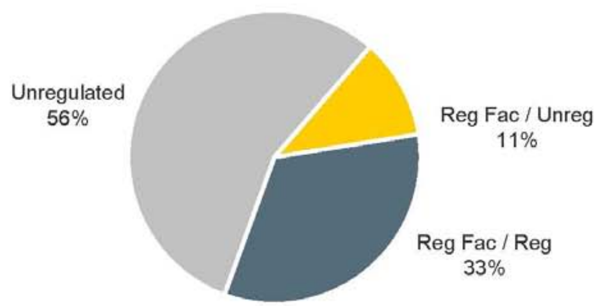
Alaska's contingency planning requirements apply to specific aspects (components) of a facility's or vessel's operations. The analysis in this report distinguishes between spills from regulated versus unregulated components. Examples of spills from unregulated components include:

- a spill from a vehicle at a regulated facility;
- a spill from a fuel tank (below the regulatory threshold of 10,000 barrels) at a regulated facility
- certain piping at oil production facilities

Number of Spills



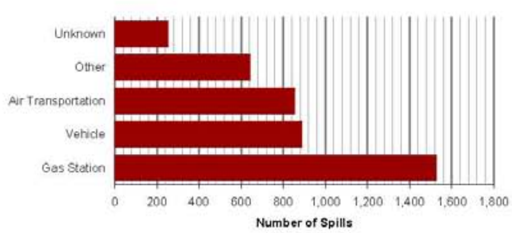
Gallons Released



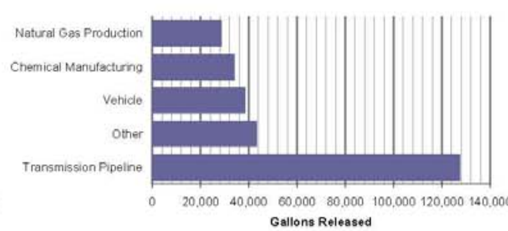
- More than 80% of the spills and more than 50% of the total volume released during the 10-year period were from unregulated facilities.
- Gas Stations were the top unregulated facility type in terms of number of releases.
- Transmission pipelines carrying non-crude product were the leading unregulated facility type in terms of total volume released.

Top Unregulated Facilities

Number of Spills



Gallons Released



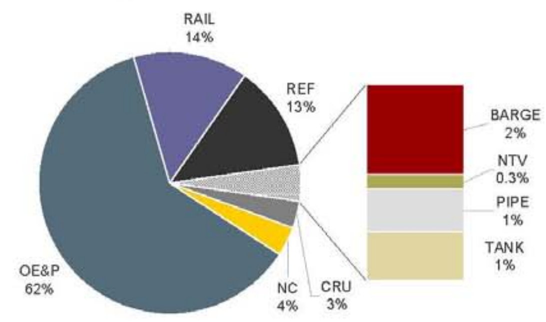
NOTE: Graphs do not include spills reported in pounds or potential spills.

Summary Oil and Hazardous Substance Spills by Subarea, July 1, 1995-June 30, 2005

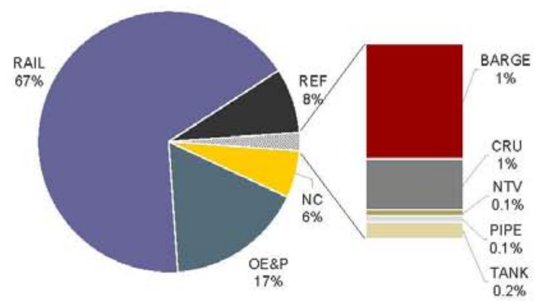
Cook Inlet Subarea Spills by Regulated Facility Type

- Nearly two-thirds of the spills during the 10-year period were from Oil Exploration and Production (OE&P) facilities.
- More than two-thirds of the total volume was from Railroad Transportation facilities. *(NOTE: The 120,000 gallon Gold Creek Derailment spill in December 1999 was responsible for nearly 75% of the total volume released by Railroad facilities. This release occurred prior to legislation subjecting railroad operations to contingency planning requirements. For purposes of this report, railroads are considered a regulated facility.)*

Number of Spills



Gallons Released



NOTE: Graphs do not include process water spills, spills reported in pounds, or potential spills.

B. NAVIGABLE WATERS OIL SPILL HISTORY

Cook Inlet supports a wide variety of vessel traffic ranging from the smallest fishing vessel to crude oil tankers. Refined products and crude oil are routinely shipped in and out of the inlet. In addition, Liquefied Natural Gas (LNG) tankers call at the Kenai Pipeline dock facility. Many crude oil development and production platforms operate in the area. Crude oil pipelines and natural gas pipelines cross Cook Inlet and Turnagain Arm in several locations.

Numerous probabilities exist for spills to occur due to the volume of petroleum products transported in the region. Listed below is a brief synopsis of significant or notable spills in the region from 1987 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	**Incident**
02 July 87	T/V Glacier Bay, Kenai Up to 210,000 gallons of ANS crude oil released.
22 June 88	Mystery spill, Pickworth Dock, Anchorage Approximately 300 gallons of refined product released.
05 Aug 88	Mystery spill, Upper Cook Inlet Approximately 100 gallons of heavy product released.
02 Nov 88	M/V Alaska Constructor, Trading Bay, Upper Cook Inlet An explosion aboard the vessel, resulting in the loss of approximately 10,000 gallons gasoline and 30,000 gallons of diesel fuel; heavy sheening observed.
14 Nov 88	Marathon Spark Platform, Upper Cook Inlet Approximately 23,000 to 46,000 gallons of Cook Inlet crude oil released.
12 Dec 88	T/V Oriental Crane, Nikiski Approximately 7,600 gallons of Bunker C fuel oil spilled.
31 Jan 89	Amoco Platform Anna, Upper Cook Inlet Approximately 4,600 gallons of crude oil released.
19 Aug 89	M/V Lorna B, Upper Cook Inlet Vessel sank with 80,000 gallons diesel fuel on board; no recovery.
17 Dec 90	T/V Coast Range, Cook Inlet Approximately 700 gallons of crude oil released.
01 Aug 91	Port Graham fuel facility, Cook Inlet Unknown quantity of diesel fuel.
13 Aug 91	M/V Atlantic Seahorse, Cook Inlet Approximately 4000 gallons diesel released.

26 Apr 92	ARCO King Salmon Platform, Upper Cook Inlet. Approximately 336 - 420 gallons crude oil released.
28 Aug 92	F/V Loon, Outer Kenai Coast Approximately 1,500 gallons diesel fuel released.
05 Dec 95	Tesoro Tank Farm (Nikiski). Approximately 2,500-2,900 gallons of crude oil released due to a mechanical failure. Some of the product escaped secondary containment and entered Cook Inlet.
06 Mar 97	Structural Mechanical leak at Cook Inlet Steelhead Platform (Trading Bay). Approximately 9,000 gallons of diesel released.
06 Feb 99	T/V Chesapeake Trader, between Nikiski and Homer. 420 gallons of crude oil spilled.
01 Oct 02	Trading Bay facility. Tube failure; crude oil release of 525 gallons.
15 Jan 09	M/V Monarch sinking, upper Cook Inlet. 22,000 gallons of diesel fuel and other petroleum products.

C. INLAND OIL SPILL HISTORY

The Cook Inlet planning region supports a well-developed road and rail system that connects many of the region's communities. Major communities include the Municipality of Anchorage and surrounding communities, the cities of Kenai and Soldotna on the Kenai Peninsula, and Wasilla and Palmer in the Matanuska-Susitna Borough. The region hosts the majority of industrial activity in the state as well as the majority of the state's population. With access by water, rail and road, the Port of Anchorage is a major trans-shipment point. The Kenai Peninsula supports much of the Cook Inlet oil production activity as well as refinery and urea production facilities. Many spills occur in this region due to the industrial/commercial nature of the area. Listed below is a brief synopsis of significant petroleum product spills in the subarea from 1990 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	Incident
01 Mar 90	Cook Inlet Pipeline, Drift River Terminal. Approximately 2,000 barrels of crude oil spilled within a containment dike. No oil was released to the water and no injuries were sustained as a result of this incident.
16 Aug 91	Shell Western ENP (onshore, Nikiski). Approximately 2,000 barrels of crude oil spilled on the ground. Report did not specify details of spill.
22 Feb 95	Whittier, Defense Fuels Supply Center. 113,000 gallons of JP-5 (jet fuel) released, but contained within the lined, diked containment area. Cause of the release was a severed pressure relief line (the line was severed by a chunk of falling ice).
28 Jul 95	East Kenai, Unocal Swanson River Field. Approximately 840 gallons of crude released from a ruptured line.
02 May 97	Anchorage International Airport. Over 3000 gallons of Jet A fuel released after a backhoe struck a buried 2" valve.
17 Jul 97	Elmendorf Air Force Base. 13,600 gallons of jet fuel (JP-8) released from a ruptured six-inch buried pipeline.
04 Sep 97	Elmendorv AFB Flightline. Pipeline ruptured; 6,300 gallons of aviation fuel released.
27 Oct 97	Elmendorf AFB. Unknown cause of release from pipeline; 100,000 gallons of aviation fuel released.
02 Aug 98	Mat-Su Palmer Correctional Facility. Leak in underground feeder line to day tank; 10,000 gallons of diesel released.
22 Jun 99	Glenn Hwy MP 84/85 on Long Lake side of Road. Truck rollover; 4,500 gallons of Jet B fuel released.

31 Oct 99	Alaska Railroad MP 268.5 (Canyon Creek). Train derailment; 15,000 gallons of Jet A diesel fuel released.
21 Nov 99	Kenai Swanson River Field. Pipeline leak; 10,500 gallons of produced water released.
22 Dec 99	Alaska Railroad MP 262 (near Gold Creek). Train derailment; 120,000 gallons of jet fuel spilled.
06 Jan 99	Swanson River Field. Tank pipeline release; loss of 2520 gallons of crude oil.
13 Apr 00	Port of Anchorage Tesoro Pipeline Terminal. Leak in pipeline; 5082 gallons of diesel released.
29 Jun 01	Junction of the Seward Highway and the Sterling Highway. Truck rollover; 4000 gallons of asphalt spilled.
29 Oct 01	Mile 52 Sterling Hwy near Gwin's Lodge. Truck rollover; loss of 7000 gallons of gasoline.
18 Jul 08	Milepost 49.5 of the Parks Hwy, Wasilla. Illegal dumping of over 1000 gallons of various used oil products.

D. HAZMAT RELEASE HISTORY

Numerous releases occur in this region due to the industrial/commercial nature of the area. Listed below is a brief synopsis of significant releases of hazardous substances in the region from 1986 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	**Incident**
27 Feb 86	Alaska Railroad, Crown Point transfer station near Moose Pass. A tank car of urea formaldehyde was accidentally heated twice in Anchorage before its trip south to Crown Point. The manufacturer of the chemical was contacted and expressed no alarm at the situation. However, the chemical went through an exothermic reaction and began venting the product shortly after arrival at Crown Point. The area was evacuated and, over the course of approximately two days, 50 tons of urea formaldehyde was released. Several people reported ill effects and one dog died.
13 Mar 89	Tesoro Alaska Petroleum Company. Spill of approximately 2 tons SO_2 due to a false indication from a high level shutdown mechanism, which caused a shutdown of hydrocracker unit.
14 Mar 89	Tesoro Alaska Petroleum Company. Release of nearly one ton ammonia to the air; shutdown of the sulphur recovery unit caused release.
25 May 89	Unocal, Chemical plant. Pressure release of 6,500 pounds of ammonia vapor. Specific cause not listed.
21 Jun 89	Unocal, Chemical plant. Release of 600 pounds of ammonia to the air. Ammonia dissipated to air. Cause: Unocal was tearing down the system and replacing indicator. By the end of June 1989, Unocal's ammonia releases were being addressed under RCRA compliance agreement. Further releases regulated under this agreement.
15 Nov 89	ARCO, Swanson River 41-33. Three barrels of 15% hydrochloric acid spilled during acidizing job. The acid ate a hole in the line. Soda was spread on gravel to neutralize the acid; the contaminated gravel was taken to a solid waste facility (location not specified).
03 Dec 89	Unocal, Chemical plant. Approximately 100 pounds of ammonia released to the air and onto ground; cause attributed to a lost gasket.
29 Jan 90	VECO, at Swanson facility. While filling a truck-mounted tank, 21 gallons of xylene tinted with crude and water spilled. The xylene burped out of vent pipe onto ground. Contaminated soil and snow collected and transported to a waste pit.
20 Mar 90	Unocal, Chemical plant, on the wharf. An unknown amount of sulfuric acid (estimated at 65 gallons) spilled due to leak in off-loading line.
30 Jun 90	Unocal, Chemical plant. 500 gallons of sulfuric acid spilled while off-loading an acid line. The hose became loose while clearing an improperly blocked-off line.
14 Sep 90	Tesoro, North Kenai Plant. Just under one ton of sulfur released into the atmosphere as a result of a power shutdown.
07 Sep 91	Unocal, Chemical plant. 2,670 pounds of hot ammonia released during transfer to a

	storage tank as a result of a pressure overload and subsequent venting for a duration of 15 minutes.
11 Sep 91	OSI/Great Western Chemical. 100 gallons of sodium hypochlorite (12.5% NaOCl by volume, pH 11.4) released while off-loading from truck. The 250 gallon plastic chemical tote fell off forklift, which caused the container to split. The incident occurred 100 feet from the water.
27 Nov 91	Dowell-Schlumberger. Approximately 70-80 gallons of 15% hydrochloric acid (HCl) released at the shop yard. Specific details were not listed.
10 Jul 92	Union, Chemical plant. Approximately 5,400 pounds of ammonia were released for 40 minutes due to operator error/mechanical failure at No. 5 plant.
03 Aug 93	Unocal, Chemical plant. 1500 pounds of anhydrous ammonia released due to malfunctioning valve in area plant.
17 Sept 93	Unocal, Kenai plant. 100 gallons of sodium hydroxide (unspecified concentration) released from a pinhole leak.
08 Jun 96	Kenai Unocal Chemical Plant. 8943 pounds of anhydrous ammonia released. Cause unknown.
18 Jun 96	Kenai Unocal Chemical Plant. 6006 pounds of anhydrous ammonia released. Cause unknown.
25 Jan 97	Crowley Barge Oregon capsized six miles offshore of Ninilchik. The barge was struck by a tug, became unbalanced after taking on water, and overturned. The entire cargo of urea (approximately 12,500 tons) was lost.
16 Sep 97	Ninilchik River. Truck accident. 34,000 pounds of solid sulfur spilled.
31 Oct 97	Kenai Unocal Chemical Plant. Valve left open. 20,000 pounds of anhydrous ammonia released.
21 Apr 98	Kenai Unocal Chemical Plant. Faulty valve. 49,605 pounds of anhydrous ammonia released.
01 Jul 98	Homer Icicle Seafood Plant. Explosion. 35,000 pounds of ammonia released.
21 Sep 98	Kenai Unocal Chemical Plant. Unknown cause. 6,500 gallons of methydiethanolamine released.
20 Aug 99	Kenai Unocal Chemical Plant. Explosion. 9,000 gallons of methydiethanolamine released.
23 Dec 99	Between Tacoma, WA and Anchorage. Faulty valve on ISO Tank. 44,000 pounds of methanol meruptan released.
05 Nov 00	Ben Boeke Ice Arena, Anchorage. Release of 4000 gallons of Freon (Dichlorodifluoromethane).
27 Sep 02	Alaska Pacific University swimming pool, Anchorage. A release of chlorine (approximately 3 gallons) forced the evacuation of the pool and sent more than 30 children and adults to local hospitals, including a critically-injured pool worker.

16 Jul 07	Agrium Plant in Nikiski. Due to human error, a 2,100 gallon release of undetermined hazardous chemicals.
05 Nov 07	Samson Tug & Barge at Cape Decision. Release of 17,800 lbs of propane (LPG) and 1,100 gallons of kerosene.
23 May 08	HR Trucking, Sterling Hwy, Cooper Landing. Truck rollover spilled 48,300 lbs of urea.
25 Jun 08	Agrium Plant in Nikiski. Due to human factors, release of 4,500 lbs anhydrous ammonia.
10 Jul 08	Tesoro Refinery, Nikiski. Human factors led to the release of 10,226 lbs of sulfur dioxide.
17-20 Jul 08	Agrium Plant in Nikiski. Intentional release of approximately 52,000 lbs of anhydrous ammonia over a period of four days.
18 Aug 08	Milepost 179 Parks Highway. TG Service tanker-truck rollover. 5,000 gallons of compressed methane and 150 gallons of diesel fuel.
28 Sep 08	Aurora Gas Moquawkie #4 Well Blow-out, upper Cook Inlet near Tyonek.
	Spill of 11,000 gallons of drilling mud.
13-28 May 09	Tesoro Refinery, Nikiski. Over the course of two weeks, approximately 78,000 lbs of sulfur dioxide released due to undetermined causes.
15 Nov 10	Univar Co., Anchorage. Spill of 2640 gallons of corrosion inhibitor due to human error.

E. CLOSER LOOK AT SOME NOTEWORTHY SPILLS OR INCIDENTS

January 21, 1984 T/V Cepheus

Location: Cairn Pt, 1½ miles northwest of the Port of Anchorage

Product: 188,000 gallons of aviation fuel

A 535' Greek tanker grounded across Knik Arm from Anchorage. A tug pulled the loaded tanker (209,000bbls) to the Anchorage dock where it continued to leak. The waters were 90% ice-infested. A large percentage of the product evaporated. The rest quickly mixed in with the ice-laden waters, making recovery of fuel an unlikely proposition, so on-water recovery was not attempted. Within days evidence of the spill had disappeared, mostly due to evaporation and grinding/dispersion action of the strong currents and ice-infested waters. Low-tide sediment samples from surrounding shoreline turned up negative.

July 2, 1987 T/V Glacier Bay

Location: East side of Cook Inlet, just south of Kenai River mouth

Product: 130,200 gallons of Alaska North Slope crude oil

The tanker, carrying more than 16 million gallons of crude, ran aground and then moved off to deeper water, increasing the bottom tear in the vessel and releasing more product. Initial low estimates of product loss of 4000 gallons were later revised upwards, and by July 9 the FOSC had declared the spill to be "major." Due to the strong currents of 4 to 6 knots, recovery operations were extremely difficult. The oil tended to accumulate in rip currents and carried along and/or down with the flotsam and jetsam. Several times response crews contained oil within floating booms, only to have it "disappear" before collection was possible, and then reappear hundreds of meters away, a result of the intense currents and tide rips. The spill was eventually "federalized" due to the poor efforts by the responsible party: cleanup personnel did not arrive on-scene until two days after the grounding, and their operations were neither adequate nor effective.

March 24, 1989 T/V Exxon Valdez

Location: Off Bligh I. in Prince William Sound, affecting shores from there to Cook Inlet and Kodiak

Product: Over 11 million gallons of ANS crude oil

Just after midnight, the supertanker Exxon Valdez, containing more than 53 million gallons of oil, ran aground on the charted rocks of Bligh Reef after exiting the prescribed tanker navigation lanes in an effort to avoid icebergs from nearby Columbia Glacier. The impact ruptured eight of the eleven cargo tanks. Oil spewed out of the tanker in such quantities that, for a while, the slick stood at over two feet thick in places. Within 36 hours after the grounding, and with the weather holding calm, air reconnaissance reported the oil slick to be 10 miles long and 3 to 7 mile wide. Despite calm weather for the first three days, spill response efforts were stymied by confusion, lack of equipment, and misunderstandings over proper response and control. A major storm, boasting winds up to 73mph, blasted through the Sound on Sunday night, March 26, spreading oil in all directions and coating the first of many miles of shoreline. Eventually, over 1200 miles of coastline would be impacted by oil, including the outer Kenai coast and islands, reaching the mouth of Kachemak Bay within cook Inlet, and out to Kodiak Island and the Alaskan Peninsula. Exxon mounted a major shoreline cleanup effort during the summer of 1989 and similar but much reduced cleanup activities during the summers of 1990 and 1991. Recent studies report various parts of the coastal ecosystem still exhibiting negative effects from the oil spill.

August 23 1993 M/V Sun Tide

Location: between the North Forelands and Possession Point, Cook Inlet

Product: 6000 gallons of diesel fuel

The spill response vessel Sun Tide ran into an ARCO drilling rig, rupturing its fuel tank, leading to a one-by-two mile sheen. The diesel evaporated far more rapidly than predicted, and response efforts were in effectual.

September 9, 1994 **Tug Barge Annahootz**
Location: Port of Anchorage
Product: 500 gallons of diesel fuel
While unloading fuel at the Port, oil overflowed through an expansion tube. Containment booms and sorbents were deployed, and approximately 100 gallons of oil/water mix were recovered. The diesel sheen rapidly evaporated and dispersed in the high-energy environment of the Cook Inlet waters. Interestingly, the sheen moved north along the coast from the Port during an ebb tide, apparently in response to a large back eddy.

December 22, 1999 **Alaska Railroad**
Location: Alaska Railroad Milepost 262, near Gold Creek, 36 miles north of Talkeetna
Product: 120,000 gallons of jet fuel (JP 8)
A southbound freight train with 4 locomotives and 53 tank cars suffered a partial derailment north of Talkeetna on its route from Fairbanks to Anchorage. Three locomotives and 15 loaded tank cars derailed. Heavy snow on the rail tracks had built up under the locomotives, and this hardened snow lifted one of the locomotives completely off the tracks, leading to the derailment. Deep snow hampered response efforts. Industry responders mistakenly assumed that the frozen ground would prevent spilled product from seeping through the earth and contaminating the water table. Test wells revealed an expansive spread of the product to groundwater, which raised fears that the nearby Susitna River might see contamination. Recovery efforts collected 16,570 gallons of spilled product. A Soil Vapor Extraction system was placed in operation the last week of October, 2000, but proved effective for only a few months. In December, 2000, a University of Alaska technical review team reported there was no longer an appreciable human health risk through the consumption of contaminated groundwater, and that contamination of the Susitna River would be mitigated by the large flow volumes of the river. Long-term monitoring of the groundwater and contaminate continues; no significant changes have occurred since December, 2000.

June 25, 2002 **F/V American Eagle**
Location: Port Graham in Cook Inlet
Product: 400 gallons of diesel fuel
The *F/V American Eagle* capsized near Russian Point at the entrance to Port Graham. The vessel carried 400 gallons of diesel at the time, as well as lube and hydraulic oils. As a precautionary measure, ADF&G announced the emergency closure of commercial set-gillnet and subsistence fisheries in the Port Graham subdistrict. ADEC hired the Seldovia Oil Spill Response (SOS) Team to contain and control the discharge of fuel from the stricken vessel. Spill response equipment, including 500 feet of harbor boom, from ADEC's newly deployed response connex in Seldovia played a key role in the response.

August/September 2002 **BP Pipeline Abandonment Project**
Location: Northern Cook Inlet
Product: undetermined amount; recovery of 113 bbls of crude oil and 1142 bbls of total fluids (oil and water)
In 2202, BP acquired a subsea pipeline, abandoned since 1974, which was determined to be the source of several sheens in the summer of 2001. The pipeline spans nearly 19 miles in northern Cook Inlet, from the Anna Platform to the former Unocal on-shore facility in Nikiski. An Incident Management Team comprised of ADEC, U.S. Coast Guard, CISPRI, and CIRCAC assembled at the CISPRI Command Post to address any oil spillage from an operation to clear the pipeline. BP pumped compressed air into the pipeline to identify leaks and determine whether or not they could be repaired sufficiently to allow pigging with a train of gel and foam pigs. When sheens were observed very shortly after the line was pressured up, it was quickly de-pressurized and a spill response ensued using the CISPRI response vessels and support fishing boats that were pre-positioned. Concluding that the pipeline lacked the structural integrity needed for pigging, the IMT

developed an alternative plan to remove as much oil as possible by using a dive team to tap high spots in the pipeline and drawing off the liquids with vacuum trucks positioned on a landing craft. This procedure was successfully completed on September 10, with a total of 113 barrels of crude oil and 1142 barrels of total fluids (oil plus water) removed directly from the pipeline.

July 2004 **Port Graham Chlorine Cylinders**

Location: Port Graham Village

Product: twelve 150 lb. chlorine cylinders

In response to a request from the Port Graham Village Council, the ADEC SOSC activated the Anchorage Fire Department Hazardous Materials Response Team (AFD HMRT) to evaluate a cache of old and potentially dangerous chemical cylinders in a village shed. Two AFD HMRT members and an ADEC responder inspected the storage shed and found twelve 150 lb. chlorine cylinders. Air monitoring equipment confirmed that two of the cylinders had slow leaks; the protective caps on many of the cylinders were rusted and difficult to remove, and most of them appeared to be full. ADEC made the necessary arrangements to have the cylinders removed from the village, which included bringing in an emergency response team from the Air Liquide Corporation to properly secure them for transportation to Anchorage.

November 2004 **Marathon Beaver Creek Pad 1-A Spill and Fire**

Location: Kenai

Product: 10,500 gallons of process water

On November 11, Marathon Oil reported that approximately 10,500 gallons of process water spilled at Pad 1-A within the Beaver Creek Field near Kenai. A frozen check valve caused a 1½ inch line to split between a skim tank and gas processing equipment. Two days later, notification came of a fire at the Beaver Creek Pad 1-A facility; two 12,600 gallon storage tanks were destroyed in a fire, which also caused an uncontrolled release of natural gas from the well. Marathon recruited a well-control expert from Wild Well Control, Inc. (Houston TX) to lead the effort to cap the well and stop the release.

February 2, 2006 **T/V Seabulk Pride Grounding**

Location: Upper Cook Inlet

Product: Heavy vacuum gas oil and gasoline

In the early hours of February 2, during extremely heavy icing conditions, the 574-foot double-hulled/double-bottomed tanker *Seabulk Pride* broke away from its mooring at the Kenai Pipeline Company Dock while loading heavy vacuum gas oil (HVGO) and gasoline using two HVGO hoses and one gasoline hose oil. All motor-operated valves were closed prior to the hoses parting minimizing the spillage of oil; approximately 2 barrels (84 gallons) of gasoline spilled into the waters of Cook Inlet, approximately 2 barrels (bbl) of HVGO spilled to the KPL Dock, and approximately 3 bbl (126 gallons) of HVGO spilled to the deck of the *T/V Seabulk Pride.* The vessel, loaded with 94,951 bbl of vacuum tower bottom blend (VTBB), 5,346 bbl of bunker oil, 1,135 bbl of gasoline, 295 bbl of HVGO, and 2,393 bbl of #2 diesel fuel, drifted for a short time , then ran aground 200 yards north of the dock. Initial soundings indicated that the cargo tanks were intact. After removing ballast water, tugs pulled the tanker free of the grounding location the next morning. No additional oil was released while the vessel was aground, though cracks were found in the #5 port ballast wing tank during an inspection while the vessel was temporarily moored in Kachemak Bay; a cement patch was installed as a temporary repair before the tanker departed Kachemak Bay on February 8.

May 23, 2008 **HR Trucking – Kenai River Urea Spill**

Location: Sterling Highway, south of Cooper Landing

Product: 50,000 lbs of urea fertilizer

A tractor trailer hauling approximately 50,000 lbs of urea fertilizer from Nikiski to Anchorage overturned and lost its entire cargo into a slough adjoining the Kenai River. The driver suffered minor injuries and was transported to Soldotna for medical care and released. For the next 12 hours, ADEC responders assisted HR Trucking of Anchorage with containing the spill and mitigating the impacts from the vehicle's fuel, lubricants, hydraulic fluid, and coolant. Cleanup continued throughout the following weeks with debris recovery, water quality monitoring, and site visits to ensure sorbents remained in place to collect any potential contamination from the vehicle fluids. Initial water quality sampling collected within 24 hours showed no significant effects to pH or dissolved oxygen content from the urea spill and no lasting adverse effects were expected.

August 18, 2008 TG Service Tanker Rollover

Location: Milepost 179 Parks Highway

Product: Approximately 5,000 gallons of compressed methane and 150 gallons of diesel fuel

ADEC staff, the Alaska State Troopers, the Central Mat-Su Fire Department, and the National Guard's 103rd Civil Support Team responded to a tanker-trailer rollover on the Parks Highway at Milepost 179. The tanker-trailer contained 9,000 gallons of compressed methane and 300 gallons of diesel fuel. The accident resulted in the closure of the Parks Highway to all traffic for five miles on both sides for approximately 18 hours. Response crews were able to recover approximately 4,000 gallons of methane from the tanker and 150 gallons of diesel fuel from the vehicle's saddle tanks.

September 28, 2008 Aurora Gas Moquawkie # 4 Well Blow-Out

Location: Well Site near Tyonek

Product: 8,500 gallons of drilling mud

A blow-out occurred at the Moquawkie development gas well site on the west side of Cook Inlet just west of Tyonek. An estimated 11,000 gallons of drilling mud were displaced when an unexpected shallow gas pocket was encountered during drilling. The mud was forced back up the well through a diverter line, which directed the fluids to the edge of the pad to prevent damage to the drilling rig. Approximately 2,500 gallons of drilling mud were contained in the well cellar and around the rig; the remaining 8,500 gallons were spilled off the pad. The responders used a vacuum truck to recover the drilling mud from on and off the pad.

M/V Monarch capsized.

January 15, 2009 M/V *Monarch* Sinking

Location: Granite Point Platform in central Cook Inlet

Product: approximately 22,000 gallons of diesel fuel and other petroleum products

As the 166-foot offshore supply vessel *Monarch* made an approach to deliver cargo to the Granite Point Platform, heavy sea ice hampered the vessel's approach and it allided with the platform. The sea ice held the vessel fast against the platform causing the vessel to begin taking on water. The crew of seven was able to safely evacuate the vessel to the platform. The vessel sank with over 35,000 gallons of diesel fuels and other petroleum products on board. When sea ice conditions diminished in the spring of 2009, a dive team conducted an assessment of the vessel for damage and fuel recovery options. Fuel recovery began in June, 2009, but due to the difficulty of operating in central Cook Inlet currents, the operation continued into August; response crews ultimately recovered a total of 12,500 gallons of fuel and lube oils. The vessel remains under 85 feet of water in Cook Inlet.

March/April 2009 Drift River Terminal Coordination

Location: *Drift River Terminal, West side of Cook Inlet*

Product: *potential release of crude oil*

Beginning March 22, 2009, Mount Redoubt Volcano produced a series of five explosive eruptions that each lasted from 4 to 30 minutes. These were followed by several other eruptions, the most significant occurring on April 4, 2009. The resultant lahars (or volcanic mudflows) caused extensive flooding at the Drift River Oil Terminal (DROT), which contained 6.2 million gallons of crude oil in two above-ground tanks. Tough the protective tertiary dike system was slightly breached in places, no oil or hazardous substance releases occurred during these significant lahar flooding events. On April 6, after a two-day delay due to volcanic eruptions, the T/V Seabulk Arctic completed the transfer of approximately 60% of the crude oil from the two tanks in service at the DROT facility; both operational tanks were ballasted with seawater as a precaution to keep the tanks from floating should a significant flood occur at the facility as a result of more eruptions. That same evening, all facility crew were safely evacuated from the oil terminal and the Christy Lee loading platform. Subsequent recovery operations removed all petroleum products from the tanks. A modified procedure allows the transport of oil from the Granite Point and Trading Bay facilities to bypass the tanks at the DROT and have direct delivery to tankers berthed at the Christy Lee platform, located offshore from the DROT. Crude oil storage operations at the terminal remain suspended.

Aerial photo showing the lahars from the Mount Redoubt Volcano flowing from the west to the east and entering Cook Inlet. The Drift River Oil Terminal Facilities can be seen as a small rectangle in the right half of the photo. (USGS 2009)

BACKGROUND: PART FIVE – ABBREVIATIONS and ACRONYMS

ACP	Area Contingency Plan
ACS	Alaska Clean Seas (North Slope industry spill response cooperative)
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game, also as ADFG
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities; also as ADOTPF
AFB	Air Force Base
ANS or ANSC	Alaska North Slope crude oil
ARRT	Alaska Regional Response Team; also as AKRRT
BBLS	Barrels; also as bbl
BLM	US Bureau of Land Management
BOA	Basic Ordering Agreement (for federal contractors)
CART	Central Alaska Response Team (ADEC)
CCGD 17	Commander, Coast Guard District 17
CISPRI	Cook Inlet Spill Prevention and Response Inc. (industry cooperative)
COTP	Captain of the Port (USCG)
CTAG	Cultural Technical Advisory Group
DOA	US Department of Agriculture
DOC	US Department of Commerce
DOD	US Department of Defense
DOI	US Department of the Interior
DRAT	District Response Advisory Team (USCG)
DRG	District Response Group (USCG)
EPA	Environmental Protection Agency; also as USEPA
ESI	(Alaskan) Environmental Sensitivity Index
F/V	Fishing Vessel
FAA	Federal Aviation Administration
FOSC	Federal On-Scene Coordinator
GIS	Geographic Information System
GRS	Geographic Response Strategies
GSA	General Services Administration
HAZMAT	Hazardous Materials; also as hazmat
HAZWOPER	Hazardous Waste Operations and Emergency Response
ICS	Incident Command System
IDLH	Immediate Danger to Life and Health
INMARSAT	International Maritime Satellite Organization
JPO	Joint Pipeline Office (gov't agencies involved with managing/regulating TAPS)
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LNG	Liquefied Natural Gas
M/V	Motor Vessel
MLT	Municipal Lands Trustee Program
MOA	Memoranda of Agreement, or Municipality of Anchorage
MOU	Memoranda of Understanding
MSO	Marine Safety Office (USCG)

MSRC	Marine Spill Response Corp. (national industry cooperative)
NART	Northern Alaska Response Team (ADEC)
NCP	National Contingency Plan
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOTAMS	Notice to All Mariners; also, Notice to Airmen
NPDES	National Pollution Discharge Elimination System
NPFC	National Pollution Fund Center
NRC	National Response Center
NRT	National Response Team
NRDA	(Federal/State) Natural Resource Damage Assessment
NSF	National Strike Force
NSFCC	National Strike Force Coordinating Center
NWR	NOAA Weather Radio
OHMSETT	Oil and Hazardous Material Simulated Environment Test Tank
OPA 90	Oil Pollution Act of 1990
OPCEN	Operations Center
OSC	On-Scene Coordinator
OSRO	Oil Spill Response Office
PIAT	Public Information Assist Team
PIO	Public Information Officer
POLREP	Pollution Report (USCG)
PWS	Prince William Sound
RCAC	Regional Citizens Advisory Council
RCRA	Resource Conservation and Recovery Act of 1978
RP	Responsible Party
RRT	Regional Response Team
RSC	Regional Stakeholder Committee
RV	Recreational Vehicle
SART	Southeast Alaska Response Team (ADEC)
SCBA	Self-Contained Breathing Apparatus
SCP	Subarea Contingency Plan
SERVS	Ship Escort Response Vessel Service (for Alyeska terminal in Valdez)
SHPO	State Historic Preservation Officer (ADNR)
SITREP	Situation Report (ADEC)
SONS	Spill of National Significance
SOSC	State-On Scene Coordinator
SSC	Scientific Support Coordinator (NOAA)
SUPSALV	U.S. Navy Superintendent of Salvage, also as NAVSUPSALV
TAPS	Trans Alaska Pipeline System
T/V	Tank Vessel
USCG	United States Coast Guard
VIRS	Visual Information Response System
VTS	Vessel Traffic Separation System/Scheme