NORTHWEST ARCTIC
SUBAREA CONTINGENCY PLAN

BACKGROUND
SECTION

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BACKGROUND: PART ONE - SUPPORT INFORMATION

A. SUBAREA PLAN

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, onshore or offshore facility, vehicle, or facility operating within the boundaries of the Northwest Arctic 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 Northwest Arctic region. As part of the Unified Plan, this SCP addresses this Northwest Arctic Region or, to avoid confusion with federal terms, Subarea.

This 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 the Oil Pollution Act of 1990. 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 a look at 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

As defined by Alaska regulations, the Northwest Arctic Region is the area of the State encompassed by the Northwest Arctic Borough and the Bering Straits Regional Corporation, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured. Figures E-1 and E-2 on pages E-3 and E-4 depict this area.

Portions of the region are in the arctic, transitional, and continental climatic zones. Permafrost underlies much of the region. The weather in the region is the result of the interaction between global air movements, land topography, and major weather systems that move north-south and east-west across the Bering Sea.

The larger river basins in the region include the Noatak, Kobuk, and Koyuk rivers. Marine waters associated with the region are comprised of the Chukchi and Bering Seas. Sea ice formation in the Chukchi Sea can begin in October and spreads south into the Bering. The ice pack can persist through late June, although the ice begins to melt and break up in April. The entire marine area of the region lies within the continental shelf.

There are a total of 31 towns and villages in the subarea. Deliveries of non-crude oils are made to these locales primarily by barges operating from Dutch Harbor or Cook Inlet. Deliveries are ice dependent, and do not occur as ice forms. Human activities in the Arctic and Subarctic regions revolve around the subsistence, sport, and commercial uses of fish and wildlife. Infrastructure development is minimal by national standards.

The Northwest Arctic Subarea encompasses a vast area that has relatively limited risks in some respects, but elevated risks when considering certain factors. The Northwest Arctic Subarea has a very small population spread over thousands of square miles. The number of facilities storing, handling and transferring refined products is very small. These facilities typically provide fuel for the generation of electricity and for heating homes. The fuel is also used to power vehicles and vessels, which are relatively few in number as well. Tank barges provide fuel to these facilities no more than twice each year and only during the short open-water season. The shoreline geomorphology of this region does not present a significant hazard to the integrity of a vessel. Most of the shorelines fall into some type of sand/gravel/cobble combination, peat, tidal flats, or vegetated shores.

The operating season is very short in this region because of the late ice breakup and the early freeze-up of the Chukchi and Bering Seas. Vessels have been damaged by ice, an ever present concern. The movement of ice, whether during freeze-up, breakup, or in the dead of winter can produce great stresses on vessels and structures. An improperly engineered structure could sustain damage in this harsh environment. Storm surges could pose a substantial risk to shoreline cleanup operations and personnel. Strong storms and high winds are unusual during the period when vessels are transiting the region.

As with all areas within Alaska, the Northwest Arctic region supports a wide range of wildlife. During the season when the ocean, lakes and rivers are thawed, the inland and shoreline areas become a haven for migratory waterfowl and other birds. Local communities rely on marine mammals as a traditional food source in the coastal communities, and these mammals are present in concentrated areas during certain times of the year. In the northern portion, polar bears roam the ice pack and are susceptible to oiling, as are almost all of the other mammals, birds, and fish in the region. Many residents of the Northwest Arctic Subarea engage in a subsistence lifestyle and rely heavily on the availability of the resources in the area. Any spill of significance could devastate their food harvest and seriously threaten their normal means of existence. Long-term impacts to their food resources could have a disastrous effect on their way of life. The Sensitive Areas Section provides detailed information on the specific resources vulnerable to spills and their locations in the region.

The highest probability of spills of refined products occurs during fuel transfer operations at the remote villages. Historically, the occurrence of spills from facilities during these operations is not significant. Spills of refined product that enter the water will rapidly disperse and evaporate making cleanup difficult. Crude oil will be affected by the same natural degradation factors but to a much lesser degree. Crude oil spills will be persistent and will require aggressive actions and innovative techniques in the harsh Arctic environment.

Spills in the Arctic require careful preplanning to overcome the effects imposed by the environment. Resources at risk during the summer months are much greater in species and number than those in the winter months. Summer daylight increases the available work hours to allow almost continuous operations. The extended daylight does not, however, increase the number of hours a particular individual can safely perform his task. The severe stresses imposed by operating in winter conditions in periods of darkness will seriously reduce individual efficiency over a given period. The severe weather does not always produce a negative effect, but can produce a positive one at times. Ice and snow can act effectively as barriers to impede the spread of oil and can be used successfully to hold and contain oil. Techniques for organizing spill response in arctic environments have been developed, and numerous reference documents detail these procedures.

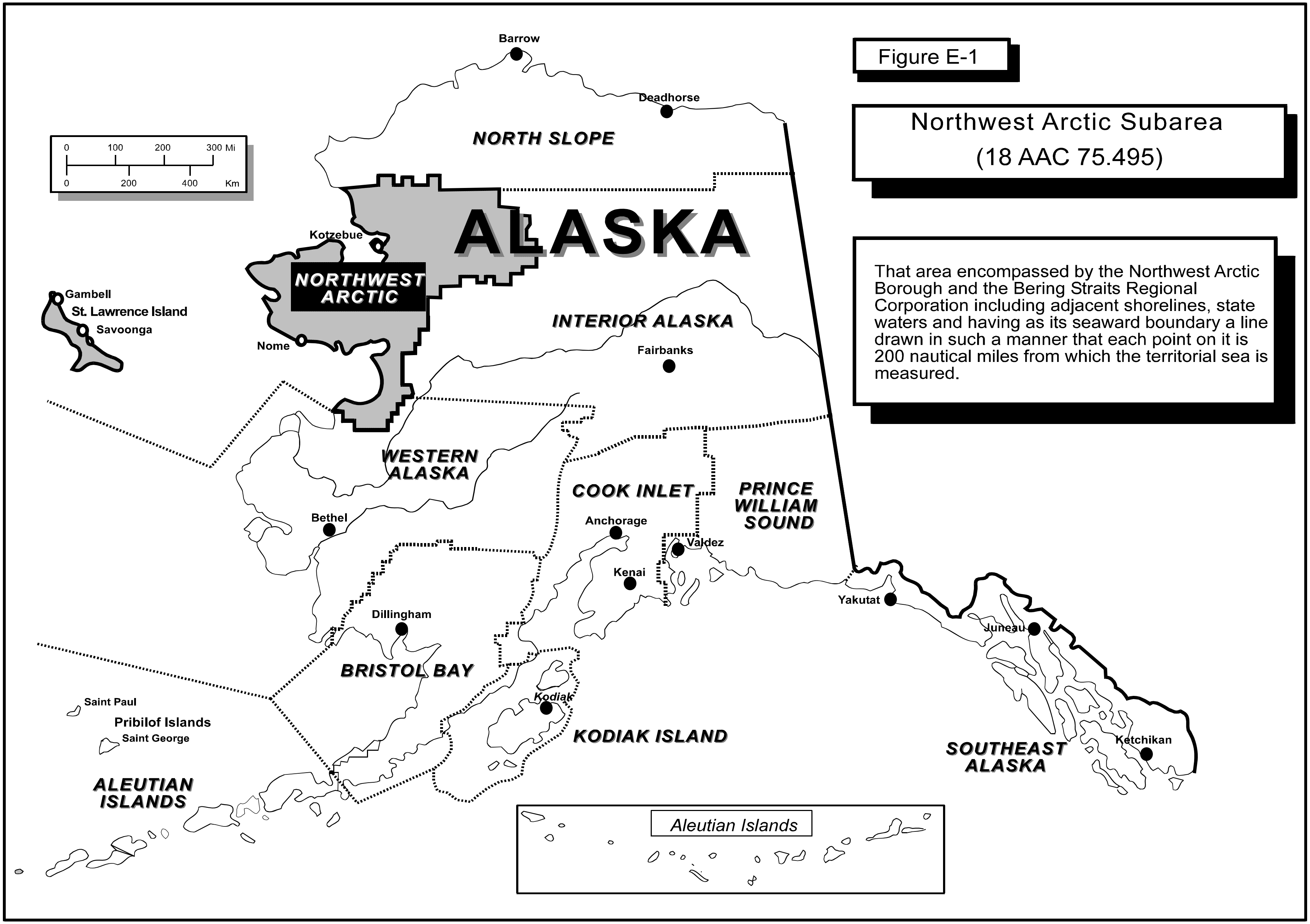
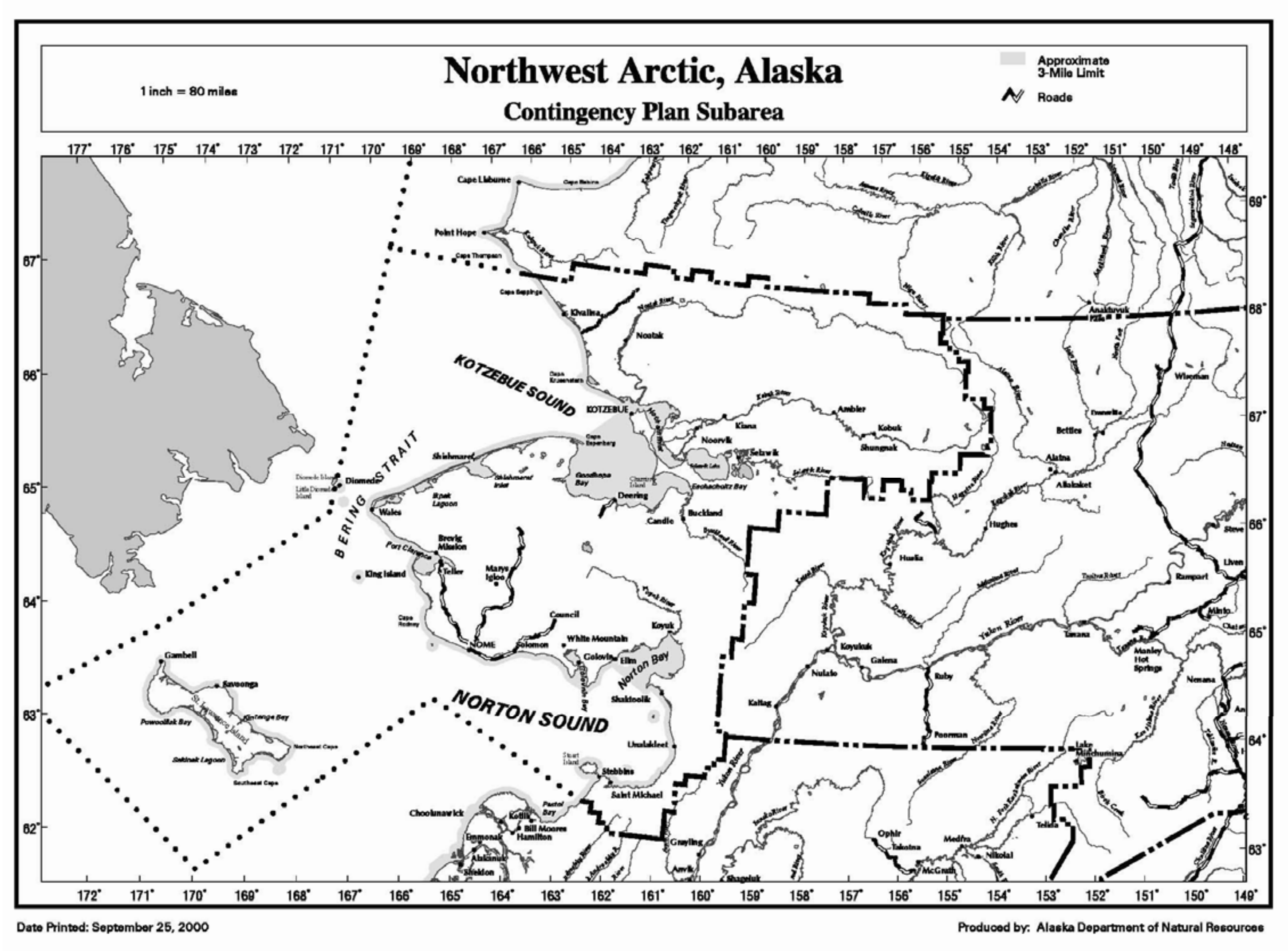


Figure E-1
Northwest Arctic Subarea
(18 AAC 75.495)
That area encompassed by the Northwest Arctic Borough and the Bering Straits Regional Corporation including adjacent shorelines, state waters and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from which the territorial sea is measured.
0 100 200 300 Mi
0 200 400 Km
ALASKA
Barrow
Deadhorse
NORTH SLOPE
Kotzebue
NORTHWEST ARCTIC
Gambell
St. Lawrence Island
Savoonga
Nome
INTERIOR ALASKA
Fairbanks
WESTERN ALASKA
Bethel
COOK INLET
Anchorage
Kenai
Valdez
PRINCE WILLIAM SOUND
Yakutat
Juneau
Ketchikan
SOUTHEAST ALASKA
Dillingham
BRISTOL BAY
Kodiak
KODIAK ISLAND
Saint Paul
Pribilof Islands
Saint George
ALEUTIAN ISLANDS
Aleutian Islands

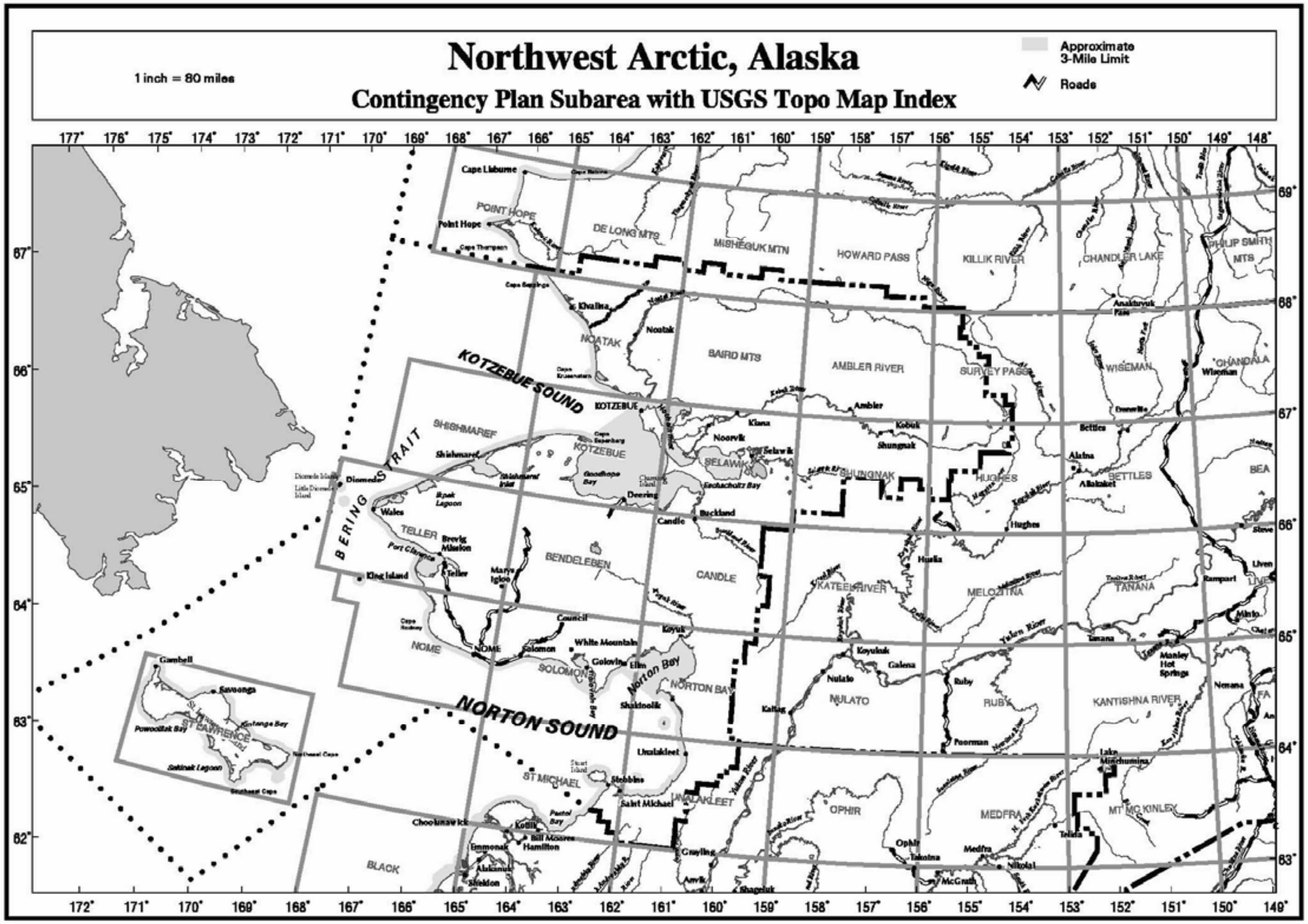
Northwest Arctic Detailed Regional Subarea Map – to acquire an electronic file of this map, please go to the DNR ***Prevention and Emergency Response Subarea Plan Maps*** website located at:

http://www.asgdc.state.ak.us/maps/cplans/subareas.html



Northwest Arctic USGS Quadrangles Map Index – to acquire an electronic file of this map, please go to the DNR ***Prevention and Emergency Response Subarea Plan Maps*** website located at:

http://www.asgdc.state.ak.us/maps/cplans/subareas.html



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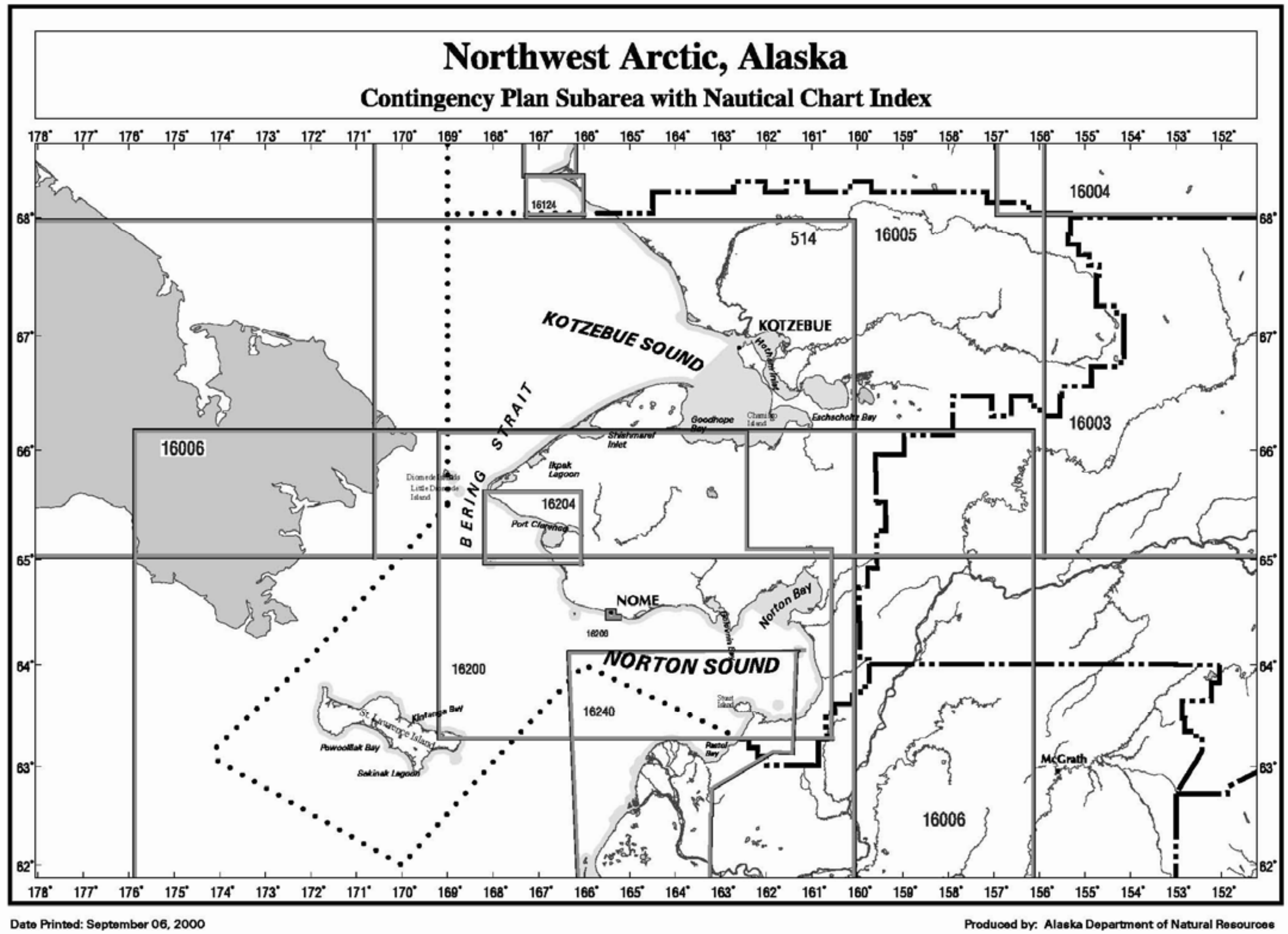
Northwest Arctic Nautical Chart Map Index – to acquire an electronic file of this map, please go to the DNR ***Prevention and Emergency Response Subarea Plan Maps*** website located at:

http://www.asgdc.state.ak.us/maps/cplans/subareas.html



C. AREA OF RESPONSIBILITY

This Subarea Contingency Plan covers the region outlined above in Subpart A. 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 (EPA) 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 Northwest Arctic Subarea under the Northern Alaska Response Team (NART) of the Alaska Department of Environmental Conservation. The SOSC for the NART is the predesignated SOSC for the entire Northwest Arctic Subarea.

Memoranda of Understanding/Agreement (MOU/MOA) exist between the USCG and EPA, the USCG and the Alaska Department of Environmental Conservation (ADEC), and EPA and ADEC which further delineate agency and OSC responsibilities. **Annex K of the Unified Plan** includes copies of these MOUs/MOAs.

D. REGIONAL STAKEHOLDER COMMITTEE

A Regional Stakeholder Committee (RSC) will normally be activated for significant incidents. The RSC was previously referred to as the Multi-Agency Coordination Committee (MAC). Unlike the MAC defined in the ICS of the National Incident Management System (NIMS), 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.

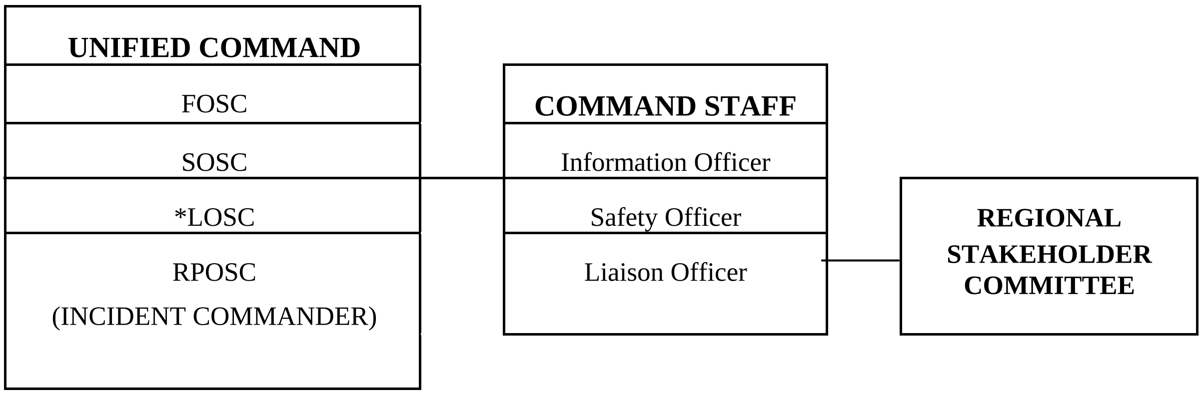
Figure E-5 provides the general location of the RSC in relation to the Unified Command organizational structure. Additionally, the suggested/potential membership of the RSC is also provided in Figure E-5. Membership on the RSC is dependent upon the location of the incident and the interests or jurisdiction of the affected communities, landowners, and special interest groups. Government agencies will not normally use the RSC to provide input to the Unified Command. Federal agency personnel will participate within the ICS structure under the leadership of the FOSC; state personnel will do so under the guidance of the SOSC. During an incident in which no FOSC is taking part, federal agencies with jurisdictional responsibilities for resources at risk could participate as a member of the RSC, thus retaining a channel for input on containment, oversight, and cleanup. The preferred approach is to include these agencies as part of the overall ICS structure.

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 reviews the Incident Action Plans developed by the Unified Command.

RSC activities will be coordinated by the Community Liaison Officer. RSC discussions will be documented, and recommendations and dissenting opinions expressed outside of the RSC meetings 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-5

Northwest Arctic Subarea
Regional Stakeholder Committee



Suggested Membership of the Regional Stakeholder Committee:

- Representatives or Community Emergency Coordinators from affected communities. These may include:

Boroughs			
Northwest Arctic Borough			
Communities			
Ambler	Gambell	Noatak	Solomon
Brevig Mission	Golovin	Nome	Stebbins
Buckland	Kiana	St. Michael	Teller
Candle	Kivalina	Savoonga	Unalakleet
Council	Kobuk	Selawik	Noorvik
Deering	Kotzebue	Shaktoolik	Wales
Diomede	Koyuk	Shishmaref	White Mountain
Elim	Mary’s Igloo	Shungnak	

- Private landowners and leaseholders
- Native corporations, organizations and communities
- Representatives from federally-recognized tribes
- Special interest groups affected by the incident

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

E. SUBAREA COMMITTEE

The primary role of the Subarea Committee is to act as a preparedness and planning body for the subarea. The pre-designated Federal On-Scene Coordinators (EPA and USCG) for the subarea and the pre-designated State On-Scene Coordinator from the ADEC compose the primary membership of the Subarea Committee. 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. The FOSC should solicit the advice of the Alaska Regional Response Team (ARRT) to determine appropriate work group representatives from federal, state and local agencies. 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 federal, state and local agency representatives.

Subarea Committee Members
The Northwest Arctic Subarea Committee is comprised of representatives from the following federal, state and local agencies:

U.S. Coast Guard, COTP Western Alaska
U.S. Environmental Protection Agency
Alaska Department of Environmental Conservation
Local community representatives, as necessary

The Northwest Arctic Subarea Committee also seeks advice and expertise concerning environmental and economic issues from federal, state and local agencies and private industries such as:

U.S. Department of the Interior
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Military and Veterans Affairs
Northwest Arctic Borough
Northwest Arctic Borough Local Emergency Planning Committee
Nome Local Emergency Planning Committee
Federally-recognized tribes

Subarea Work Groups
The Northwest Arctic Subarea Committee has formed the following work groups:

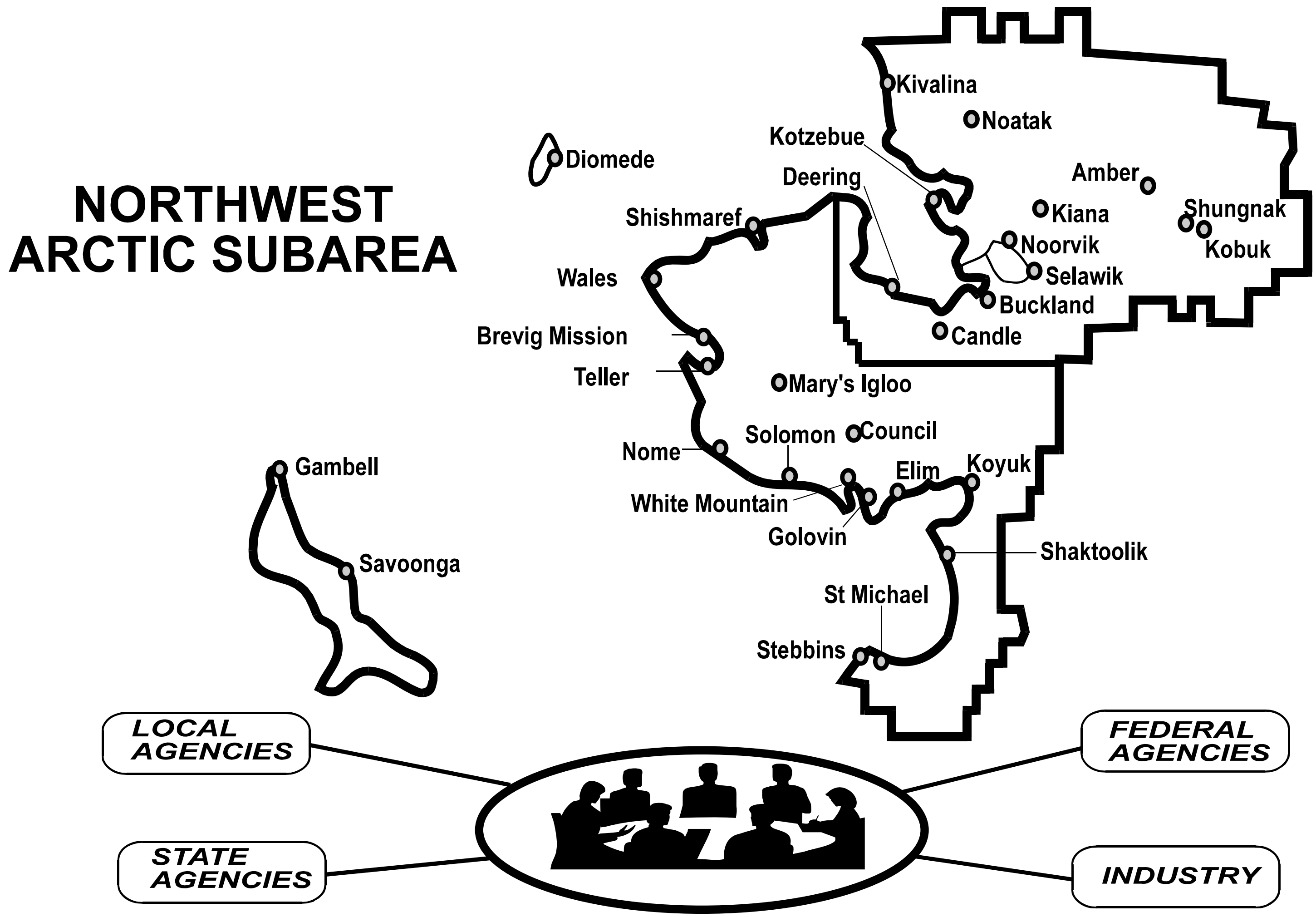
Representatives from the USCG, ADEC and the EPA co-chair the Operations Work Group. This work group is responsible for scenario development and the refinement/expansion of the Emergency Notification Lists and the Response Checklists located in the Response Section of this plan.

A representative from the U.S. Department of the Interior, Office of Environmental Policy and Compliance chairs the Sensitive Areas Work Group. This group coordinates the preparation of the necessary information for each separate subarea and ensures that the information is submitted in a common format. Participation by local community staff is vital to acquire local input and validate existing information. The Northwest Arctic subarea-specific sensitive areas information has been prepared and incorporated into the Sensitive Areas Section of this plan.

The Logistics Work Group is co-chaired by representatives from the USCG, EPA, and ADEC. This work group is responsible for preparing the Resources Section of this plan.

The Operations Work Group is co-chaired by representatives from the USCG, the ADEC and the EPA. This work group is responsible for scenario development and the refinement/expansion of the Emergency Notification Lists located in the Response Section of this plan.

Figure E-6: PLANNING ORGANIZATION
NORTHWEST ARCTIC SUBAREA CONTINGENCY PLAN



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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 OSCs; 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 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 OSC 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 OSC 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. 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 OSC at the spill. 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, mechanical removal using heavy equipment. Bioremediation is also considered as a shoreline cleaning method. Bioremediation is the application of nutrients to the shoreline to accelerate the natural biodegradation of oil. The OSC shall request the ARRT 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.

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BACKGROUND: PART THREE - SUBAREA SPILL HISTORY AND OIL FATE

The Northwest Arctic Subarea experiences a limited amount of vessel traffic, primarily resupply barges and fuel barges. A fair number of releases occur in this region due to industry and fuel resupply challenges in remote villages. With limited access by air and water, and virtually no roads, a major spill in the region would present sever logistical problems for spill responders. Response to major spills in this subarea is further compounded by the relatively short ice-free periods on the open ocean.

The information below, collected from the ADEC spills database, notes some of the more significant or indicative spills and releases. A complete list is available through ADEC.

A. NAVIGABLE WATERS SPILL HISTORY

Date	Location - Incident	Substance	Quantity
08/10/94	Cape Nome (Barge) - grounding	Diesel	20,000 gallons
06/26/97	Gambell (Barge) – leak	Diesel	100 gallons
06/24/98	Savoonga (Barge) – puncture	Diesel	450 gallons
05/13/02	Teller/Port Clarence - valve failure	Diesel	106 gallons
06/07/04	Kobuk River Lodge (Barge) – line failure	Diesel	140 gallons

B. INLAND SPILL HISTORY

Date	Location - Incident	Substance	Quantity
07/29/93	Cominco Red Dog mine port site, pit #2	Diesel	36,000 gallons
09/13/95	Elim – Tank Farm	Gasoline	7,000 gallons
11/15/96	Wales – Arctic Sub Lab – External Factors	Diesel	26,000 gallons
01/23/97	Savoonga tank farm – nozzle failure	Diesel	5,000 gallons
06/26/97	Gambell tank farm – leak	Diesel	8,000 gallons
05/03/98	Shungnak Tank Farm – line ruptured	Diesel	3,000 gallons
11/02/98	Nome, downtown, vehicle – faulty valve	Diesel	1,000 gallons
05/27/99	Little Diomede Island Tank Farm – Puncture	Diesel	2,000 gallons
03/24/00	Unalakleet – Aviation Tank Farm	Gasoline	84,360 gallons
08/29/00	Nome – Drums at Lee's camp – Puncture	Diesel	1,500 gallons
01/20/01	Elim City – Water/Power Plan – Overfill	Diesel	1,500 gallons
12/10/01	Deering, Tank Other – Cargo not secured	Diesel	1,000 gallons
02/01/02	Teller School Tank Farm – Overfill	Diesel	3,300 gallons
02/15/03	Gambell Tank Farm – Overfill	Diesel	4,600 gallons
08/11/04	Kotzebue, Red Dog Port – Rollover/Accident	Diesel	2,700 gallons
10/02/04	Kotzebue- Red Dog Port – Human Error	Diesel	4,075 gallons
01/06/08	Nome Airport Terminal – Overfill	Diesel	1,050 gallons
01/23/08	Selawik Tank Farm – Overfill	Diesel	5,385 gallons
04/05/08	Buckland Tank Farm – Crack	Diesel	7,750 gallons
04/08/08	Shishmaref Tank Farm – Human Error	Diesel	2,000 gallons

C. HAZMAT RELEASE HISTORY

Date	Location	Substance	Quantity
08/05/96	Cominco Red Dog Mine Haul Road Cause: Rollover/Accident	Other	70,000 pounds
01/02/97	Red Dog Mine Port Road Cause: Rollover/Accident	Zinc Concentrate	40,000 pounds
08/19/97	Cominco Red Dog Mine Haul Road Cause: Rollover/Accident	Zinc Concentrate	70,000 pounds
08/21/97	Cominco Red Dog Mine Haul Road Cause: Rollover/Accident	Zinc Concentrate	70,000 pounds
02/07/98	Kotzebue City, Cominco Port	Other	140,000 pounds
05/31/98	Cominco Red Dog Mine	Zinc Slurry	200,000 gallons
07/27/98	Kotzebue – cause unknown	unidentified hazardous substance	1000 gal.
08/01/98	Red Dog Mine Port Site Cause: Rollover/Accident	Other	76,000 pounds
11/21/98	Cominco Red Dog Mine Haul Road Cause: Rollover/Accident	Zinc Concentrate	70,000 pounds
01/06/99	Red Dog Mine Haul Road Cause: Rollover/Accident	Zinc Concentrate	60,000 pounds
01/21/99	Red Dog Mine Port Road Cause: Rollover/Accident	Other	50,000 pounds
03/02/99	Cominco Red Dog Mine Cause: Containment Overflow	Zinc Slurry	100,000 gallons
05/27/99	Little Diomede – puncture	unidentified hazardous substance	2000 gal.
07/19/99	Cominco Red Dog Mine Cause: Rollover/Accident	Other	160,000 pounds
10/09/00	Red Dog Mine Port Road Cause: Rollover/Accident	Lead	60,000 pounds
12/28/00	Red Dog Mine Haul Road Cause: Rollover/Accident	Zinc Concentrate	80,000 pounds

11/24/03	Cominco Red Dog Mine Cause: Equipment Failure	Zinc Slurry	158,398 gallons
09/21/05	Red Dog Mine Port Road Cause: Rollover/Accident	Zinc Concentrate	60,000 pounds
05/07/06	Cominco Red Dog Mine Cause: Line Failure	Process Water	114,000 gallons
11/22/06	Cominco Red Dog Mine Cause: Containment Overflow	Process Water	150,000 gallons
07/21/07	Cominco Red Dog Mine Cause: Line Failure	Process Water	78,300 gallons
09/29/08	Cominco Red Dog Mine Cause: Line Failure	Process Water	114,000 gallons

Northwest Arctic Subarea

Total Spills: 1,483
Total Volume: 1,105,220
Average Spill Size: 745
Average Spills/Year: 148
Average Volume/Year: 110,522

Top 5 Causes

Cause	Spills	Gallons
Other	88	313,832
Equipment Failure	181	169,662
Rollover/Capsize	20	155,812
Tank Failure	5	84,422
Line Failure	332	64,102

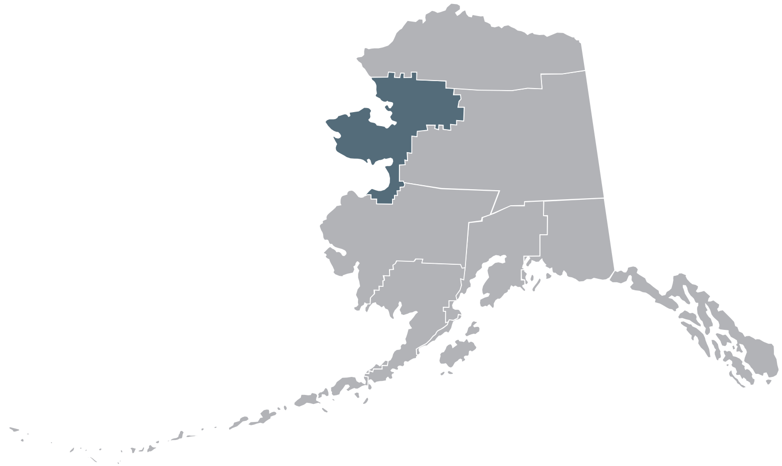
Top 5 Products

Product	Spills	Gallons
Other	198	468,361
Magnesium Oxide (Slurry)	11	206,137
Gasoline	23	92,395
Diesel	431	87,132
Zinc Concentrate	11	81,070

Top 5 Facility Types

Facility Type	Spills	Gallons
Mining Operation	1,205	901,843
Noncrude Terminal	48	112,092
Other	74	71,466
School	31	6,084
Residence	23	4,169

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



Shoreline: 3,500 miles
Land Area: 38,100,000 acres or 59,500 square miles

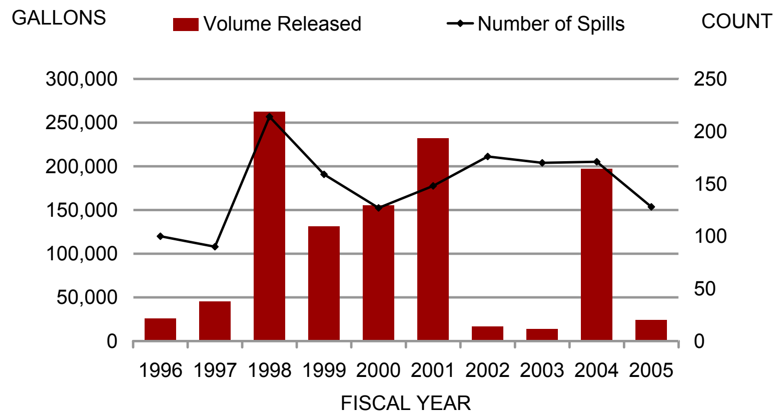
There are a total of 31 towns and villages in the subarea. Deliveries of noncrude oil are made to these locales primarily by barges operating from Dutch Harbor or Cook Inlet. Deliveries are ice dependent, and do not occur as ice forms.

The number of facilities storing, handling and transferring noncrude products is very small. These facilities typically provide fuel for the generation of electricity and for heating homes. The fuel is also used to power vehicles and vessels, which are relatively few in number as well. Tank barges provide fuel to these facilities no more than twice each year and only during the short open-water season.

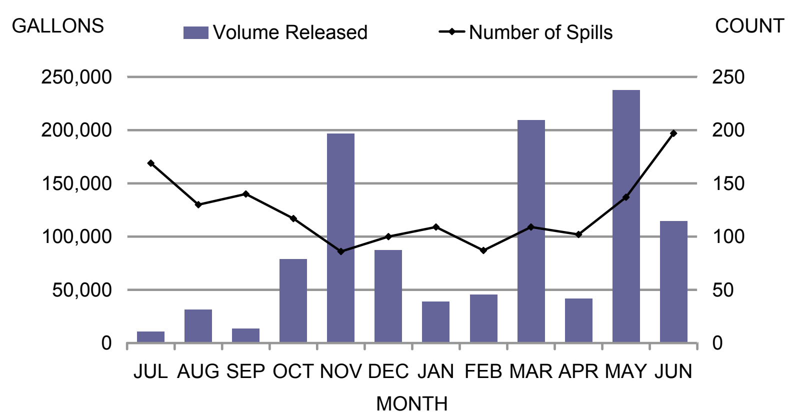
Discernible Trends

- There was no discernible trends in the average number of spills per year and the total volume released.
- There appears to be a similar seasonal trend in the average number of spills for the Northwest Arctic subarea. There is a noticeable decrease in the number of spills from October thru April. Again, this may be attributed to the onset of the winter season and the inability to detect spills due to ice and snow cover, plus the extreme cold temperatures. During Spring breakup, a large number of spills appear and are subsequently reported to DEC.
- Storage facilities accounted for 90% of the total number of spills, and 93% of the total volume spilled in the Northwest Arctic subarea during the ten-year period.
- Structural/Mechanical causes were the primary cause in 67% of the reported spills and also accounted for 46% of the total volume released.
- Noncrude oil (70%) was the product most often spilled in the Northwest Arctic subarea. Hazardous Substances made up 72% of the total volume released.
- Red Dog Mine, near Kotzebue, is the largest zinc producing mine in the world. The mine is a mainstay in the Northwest Arctic economy, employing over 400 people and profiting over one billion dollars in 2006. Red Dog is a traditional open pit mine, with some adaptations to accommodate the arctic climate. The mine was responsible for 1,190 of the 1,483 spills and 901,843 of the 1,105,220 gallons spilled in the Northwest Arctic subarea for the reporting period.

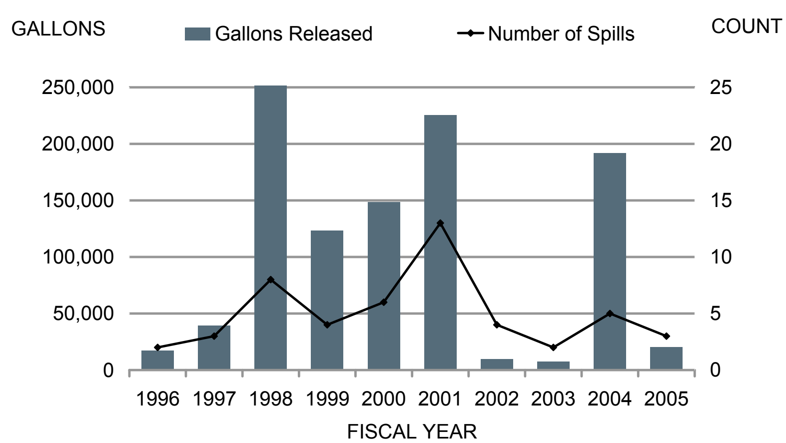
All Spills by Fiscal Year



All Spills by Month



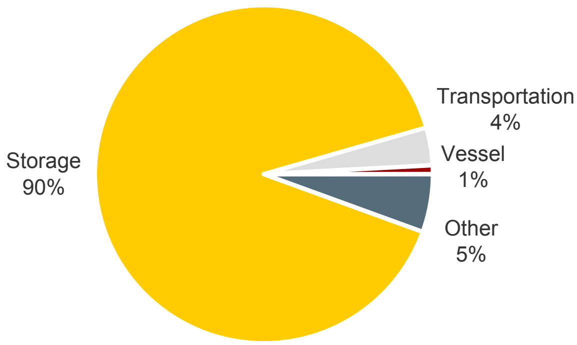
Spills >1,000 gallons



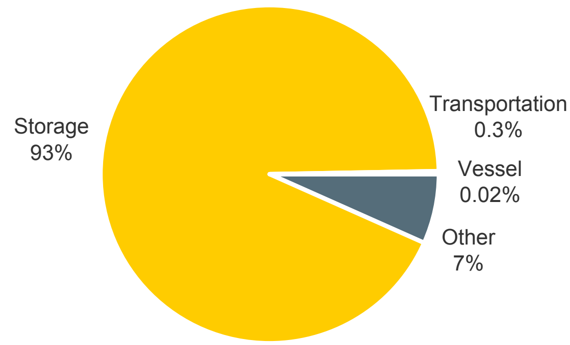
NOTE: Graphs do not include spills reported in pounds or potential spills.

Northwest Arctic Subarea Spills by Facility Type

Number of Spills

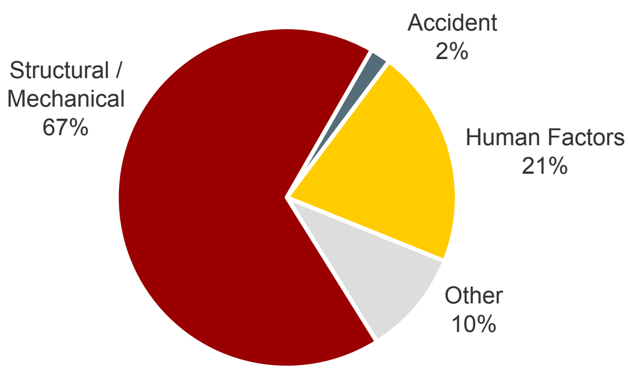


Gallons Released

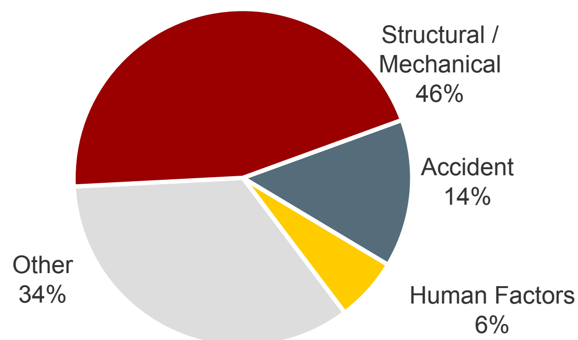


Northwest Arctic Subarea Spills by Cause

Number of Spills

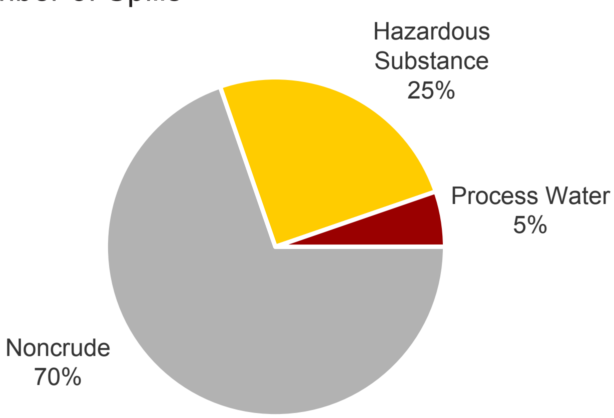


Gallons Released

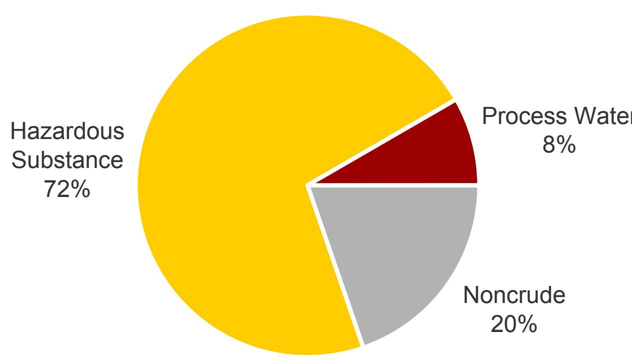


Northwest Arctic Subarea Spills by Product

Number of Spills



Gallons Released

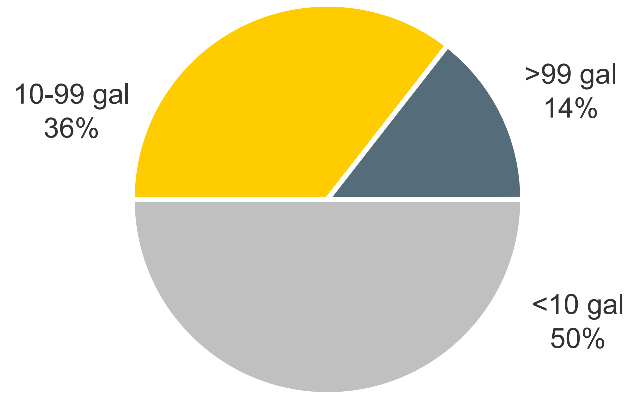


NOTE: Graphs do not include spills reported in pounds or potential spills.

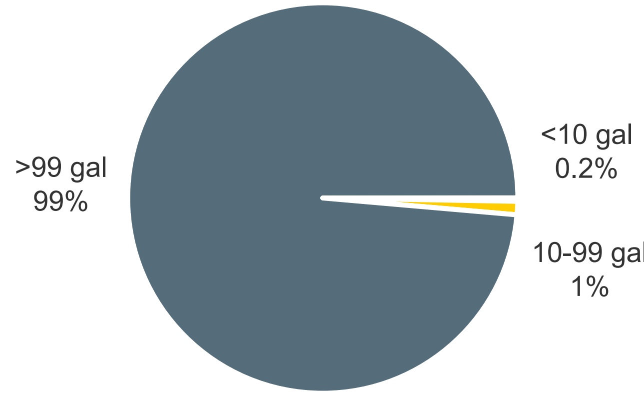
Northwest Arctic Subarea Spills by Size Class

- About half of the spills during the 10-year period were under 10 gallons.
- Virtually all 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.

Northwest Arctic 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.

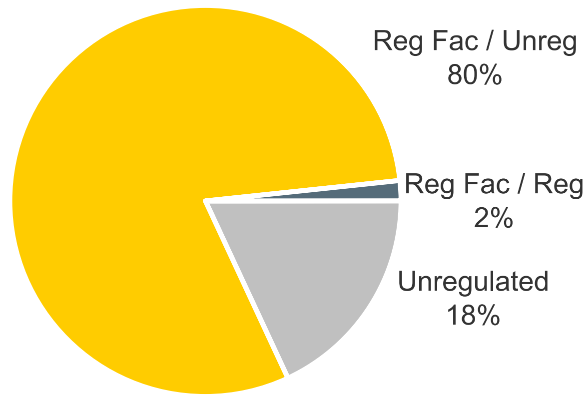
Spills from underground storage tanks are not included in this analysis.

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:

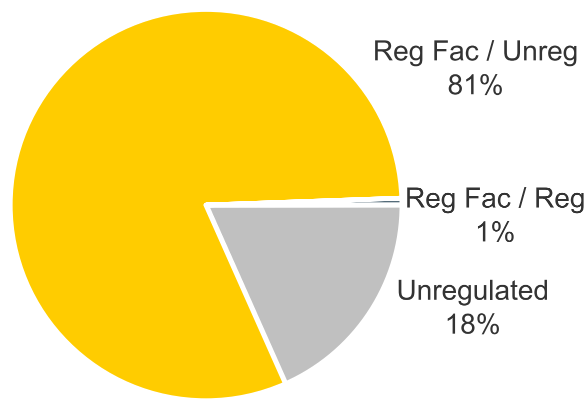
- a spill from a vehicle at a regulated facility;
- a spill from a fuel tank (below the regulatory threshold of 10,000 barrels) at a regulated facility

- Mining Operations were responsible for the majority of spills for the Northwest Arctic subarea. Most spills are from unregulated components of the mining operation which are not subject to contingency planning requirements.

Number of Spills

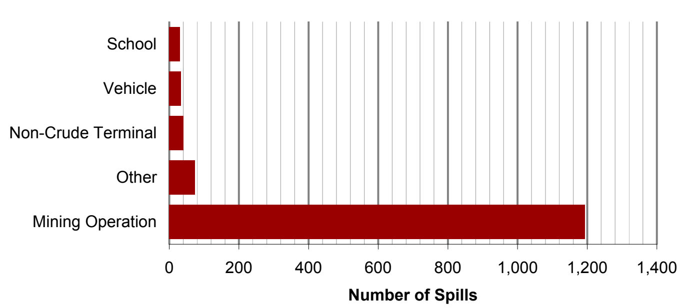


Gallons Released

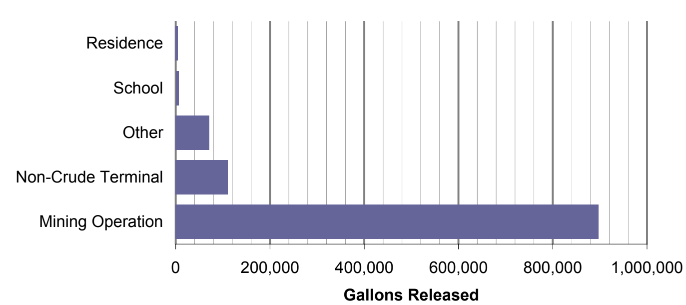


Top Unregulated Facilities

Number of Spills



Gallons Released



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

Major Spills in the Northwest Arctic Subarea

Date	Spill Name	Product	Gallons
5/31/1998	Red Dog Mine	Magnesium Oxide (Slurry)	200,000
11/24/2003	Red Dog Mine	Tailings	158,398
3/2/1999	Red Dog Mine	Gray Water	100,000
3/24/2000	West Coast Aviation Tank Farm Spill	Gasoline	84,360
12/28/2000	Red Dog Mine Port Road	Zinc Concentrate	80,000
10/9/2000	Red Dog Mine Port Road	Lead	60,000
7/29/93	Cominco Red Dog mine port site, pit #2	Diesel	36,000
4/13/1998	Red Dog Mine	Process Water	36,000
6/2/2001	Red Dog Mine	Reclaim Water	29,000
6/15/2000	Nome Airport Drums of Tar	Other	27,500
11/15/1996	Arctic Sub Lab	Diesel	26,000
1/24/2004	Red Dog Mine	Process Water	21,000
8/10/94	Nome Grounding	Diesel	20,000
2/13/1999	Red Dog Mine	Reclaim Water	20,000
3/6/2000	Red Dog Mine	Produced Water	20,000
8/3/2000	Red Dog Mine	Process Water	20,000
5/4/2005	Red Dog Mine	Process Water	13,500
2/16/2001	Red Dog Mine Port Road	Zinc Concentrate	12,000
6/3/1996	Red Dog Mine	Tailings	10,000
6/6/2001	Red Dog Mine	Reclaim Water	10,000
6/11/2004	Red Dog Mine	Process Water	10,000
9/13/1995	Elim Native Store	Gasoline	7,000
11/8/1999	Red Dog Mine	Process Water	6,500
1/23/1997	Savoonga Tank Farm	Diesel	5,000
1/29/2000	Red Dog Mine	Produced Water	5,000
5/14/2000	Red Dog Mine	WTP Sludge	5,000
2/15/2003	Gambell Tank Farm	Diesel	4,600
6/11/2001	Kotzebue Airport	Other	4,125
10/2/2004	Red Dog Mine Port Site Tanker Diesel Spill	Diesel	4,075
6/9/1998	Red Dog Mine	Magnesium Oxide (Slurry)	3,500
2/1/2002	Teller School DayTank Overfill	Diesel	3,300
5/3/1998	Shungnak Tank Farm	Diesel	3,000
10/24/1997	Red Dog Mine	Produced Water	3,000
12/2/2001	Red Dog Mine	Zinc	3,000
8/29/2002	Red Dog Mine	Process Water	3,000
8/11/2004	Red Dog Mine	Diesel	2,700
5/31/2001	Red Dog Mine	Other	2,204
5/27/1999	Little Diomede	Diesel	2,000
6/7/1998	Red Dog Mine	Process Water	2,000
5/11/1998	Red Dog Mine	Magnesium Oxide (Slurry)	2,000
7/26/2000	Red Dog Mine	Process Water	2,000
5/20/2002	Red Dog Mine	Process Water	2,000
1/20/2001	Elim Water Power Plant	Diesel	1,500
8/29/2000	Nome, Lee's Camp	Diesel	1,500
10/16/2000	Red Dog Mine	Produced Water	1,500

Major Spills in the Northwest Arctic Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
6/22/2001	Red Dog Mine	Tailings	1,500
2/25/2002	Red Dog Mine	Propylene Glycol	1,500
1/24/2004	Red Dog Mine	Propylene Glycol	1,200
11/2/1998	Nome	Diesel	1,118
7/7/2003	Stebbins Landfill	Waste Oil (all types)	1,100

Data Sources:
Department of Environmental Conservation
Northwest Arctic Subarea Contingency Plan for Oil and Hazardous Substance Discharges/Releases, June 2001

Contingency Plan Facilities in the Northwest Arctic Subarea

Facility Name	Facility Type
Island Tug and Barge, Ltd. Barges (1)	Barge
Crowley Barges (1)	Barge
Sea Coast Transportation Barges (1)	Barge
Sirius Maritime Barges	Barge
Sause Brothers, Inc. - Klamath	Barge
Crowley Tanker Vessel	Tank Vessel
Chembulk New Orleans	Tank Vessel
Renda	Tank Vessel
TeckCominco Alaska Red Dog Mine	Noncrude Terminal
Nome Joint Utility System Bulk Fuel Fac	Noncrude Terminal
Crowley Marine Services - Nome Tank Farm	Noncrude Terminal
Kotzebue Electric Association	Noncrude Terminal
Crowley Marine Kotzebue - Pac. AK Fuel S	Noncrude Terminal
USCG LORAN Station Port Clarence	Noncrude Terminal
Bonanza Fuel, Inc. Nome Fuel Terminal	Noncrude Terminal

NOTES:

(1) Authorized to operate statewide

Active Contaminated Sites in the Northwest Arctic Subarea

This table summarizes the number of active contaminated site cleanup projects in the Northwest Arctic subarea as of August 20, 2007.

Primary Contaminant	Sites	%
Petroleum	127	81%
Hazardous Substances	30	19%
Total	157	

Northwest Arctic Subarea Spill Preparedness and Response Initiatives

Response Corps and Equipment Depots

Community	CRSA	Conex	Nearshore	Other Equipment
Kotzebue	■	●		
Nome		●		
Unalakleet		●		

Northwest Arctic Contingency Plan for Oil and Hazardous Substance Spills and Releases

The current plan is dated June 2001. and a revision is planned for the 2008/2009 timeframe. The plan can be accessed at the following website: http://www.dec.state.ak.us/spar/perp/plans/scp_nw.htm

D. OIL FATE AND GENERAL RISK ASSESSMENT

1. 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. Chocolate mousse emulsions may linger in the environment for months or even years. Oil and water emulsions cause oil to sink and disappear from the surface, which give the false impression that it is gone and the threat to the environment has ended.

E. ICE, WIND AND CURRENTS

The following is an overview of wind, tide, ice and current conditions from the Bering Sea to the Chukchi Sea; including the Bering Strait, Norton Sound, and Kotzebue Sound. Much of the available data is general in nature and should be supplemented by area-specific updates and any information available from local residents. Included herein are wind data, tidal ranges, data on a variety of ice conditions and maps of net surface currents. Using the current edition of the U.S. Department of Commerce National Oceanic and Atmospheric Administration tide current tables for the Pacific coast of North America, it is possible to predict the times of ebb and flood tides for points within this region.

1. Sea Ice Conditions

Bering Sea: The sea ice generally begins as fast ice formation along the shores of the Seward and Chukotsk peninsulas in October. As the season progresses and waters in the more open portions of the Bering Sea cool off, the pack ice generally begins its seasonal southward formation in November. An estimated 97% of the ice in the Bering Sea is formed within the Bering Sea; very little is transported south through the Bering Strait. During periods of increasing ice and prevailing northerly winds, the ice apparently is generated along the south-facing coasts of the Bering Sea and moves southward with the wind at as much as 1 knot before melting at its southern limit. During periods of southerly winds, ice coverage generally decreases in the Bering, causing a wide variation in ice cover from month to month and year to year.

A wind-induced polynya (a recurring area of open water in ice-covered regions) immediately south of St. Lawrence Island is a frequent but undependable feature. Northerly winds cause the polynya to form in the lee of the island as sea ice is advected to the south. The polynya can extend more than 160 km and is frequently covered with thin ice. However, the feature is temporal, and a wind shift to southerly flow can close this area rapidly. At such times, a corresponding polynya to the north of the island is sometimes observed, but it is generally much smaller and occurs less frequently.

Norton Sound: Most of the sea ice in the northern Bering Sea and Norton Sound is first year ice that forms in situ. Most of Norton Sound is covered by sea ice in November through May and into part of June. Relatively persistent, large polynyas form south of St. Lawrence Island, along the south coast of the Seward Peninsula between Cape Prince of Wales and Cape Nome, and in the northeastern part of Norton Sound.

Chukchi Sea: Sea ice within the Chukchi Sea is mostly first-year ice, with multi-year ice occurring most commonly in northward and westward areas. Ice forms between October and early December. Around mid-May the seasonal disintegration of the ice cover begins as shorefast ice and thin ice decay and loosen along the northwest coast and in the interior of Kotzebue Sound. It is not until the beginning of July that there is a significant reduction in the probability of ice cover in the southern Chukchi Sea.

Average Arctic Marine and River Breakup and Freezeup Dates

LOCATION	AVERAGE BREAKUP DATE	AVERAGE FREEZEUP DATE	AVERAGE YEARS RECORD
Kotzebue	May 31	Oct. 23	14
Nome	May 29	Nov. 12	50
Gambell, St.Lawrence Island	May 26	Nov. 21	10
Savoonga, St.Lawrence Island	May 26	Nov. 19	10
Golovin	May 23	Nov. 2	6
Kivalina	May 31	Oct. 23	14
Noorvik	May 29	Oct. 11	17
Kiana	May 18	Oct. 17	6
Deering	May 27	Oct. 16	3
Candle/Kiwalik River	May 18	Oct. 17	8
Selawik	May 28	Oct. 17	12
St. Michael	June 9	Nov. 10	53
Teller	June 7	Nov. 10	16

Source: AEIDC. 1983. AEIDC. 1975. ADF&G 1986a.

2. Current Data

Tides in the Bering Sea are considered to be the result of cooscilation with large oceans. Once inside the Bering Sea, each tidal constituent propagates as a free wave subject to Coriolis effect and bottom friction. The tide wave propagates rapidly across the deep western basin. Part of it then propagates onto the southeast Bering shelf where large amplitudes are found along the Alaska Peninsula and in Kvichak and Kuskokwim Bays. Another part propagates northeastward past St. Lawrence Island and into Norton Sound. Over most of the Eastern Bering Shelf region the tide is mainly semi-diurnal, but in Norton Sound diurnal tides predominate. Over the remainder of the Bering tides tend to be mixed. The attached table provides tide data for the Bering Strait, Norton Sound, Kotzebue Sound, and the Chukchi Sea.

Norton Sound: As indicated in the following figures, the currents in Norton Sound are dominated by regional wind and surface pressure patterns. The highest observed flow was measured at about 50 cm/s; flow decreased with increasing depth. Oceanographic data from the mouth of Norton Sound indicate a net northward water transport, with strong seasonal differences in movement rates. Currents between the mouth of the sound and St. Lawrence Island to the west are characterized by pulsive north-south flow events having speeds of 50-100 cm/s. A typical feature is westerly flow of water mass, varying in extent and intensity over time, along the northern coastline. The tidal component in the sound is on the order of 50 cm/s and reverses either diurnally or semi-diurnally. Reversals are roughly north-southeast/southwest within Norton Sound. The upper- and lower-layer circulation is decoupled in the eastern sound, but less so in the western sound, where there is a monotonic decrease in speed along with a slight rotation of flow as depth increases. In summer, easterly flow enters the sound along its southern shore, curves cyclonically to the north, and is deflected west at the north coast, roughly following the bathymetry.

Bering Strait: Near St. Lawrence Island, the Bering Sea narrows into two straits, the Shpanberg and Anadyr. North of the island the two straits merge to form the Bering Strait. Circulation here is dominated by a northward mean flow ranging from 4 to 15 cm/s, with very small tidal influences. Flow in both the Anadyr and Shpanberg is to the north, approximately parallel to the bathymetry. The flow appears to come from around both ends of St. Lawrence Island. Frequent reversals are coincidental with meteorological events. The presence of ice appears to dampen the impact of wind stress forcing. The major driving force for the northward flow through the Bering Strait is the sea surface sloping down to the north. The normal condition is, thus, one in which sea level in the southern Chukchi Sea (in summer) is about 0.5 m lower than in the northern Bering Sea. South flow events are driven by strong north winds, strong atmospheric pressure cells, and a change in sea-level slope to the south. These conditions apparently require about one day to develop. Northward transport stands in contrast to the southerly transport events. Periods of northerly flow tend to be more persistent and not so great in magnitude.

Chukchi Sea/Kotzebue Sound: As indicated in the following figures, a warm current enters the Chukchi Sea via Bering Strait. In the Chukchi, this current concentrates near the surface and overlies dense, relict bottom water trapped by the shallow depths. It has a fairly uniform velocity which averages 45 centimeter per second (cm/s) in the summer and 10 cm/s in winter. This flow has many meanders and eddies and is slowed somewhat by dominant northeasterly winds. To the east, in deeper waters, the warm water mass descends to mid-depths. Maximum temperatures are observed in 30- to 50-m depths. Water movement from the Bering Strait to Cape Lisburne takes 10-15 days in the summer. Tidal currents are rotary and very weak in the Chukchi. They vary from .3 to .9 cm/s depending on the location and tidal stage. Nearshore, the tidal currents appear to be small, on the order of 1 cm/s. Kotzebue Sound currents are mostly tide- and wind-induced. Velocities through and within the sound are very slow, averaging less than 0.1 cm/s.

3. Winds

In many cases, spill trajectory is determined primarily by winds, especially when currents are weak. Throughout the Bering the wind is fairly strong year-round but blows the hardest in winter.

Prevailing summer winds blow from the south or southwest at 7 to 10 knots. Winter winds generally come from the east or northeast at 10 to 15 knots, and can persist in one direction for weeks at a time causing a wide variety of water and ice movement. Winds are usually stronger at St. Lawrence Island (averaging 15.5 knots) than along the mainland. Maximum recorded sustained wind speed at Nome is 78 knots and 92 knots at Unalakleet. Even strong winds offshore may reach speeds of 100 knots and create large waves in Norton Sound.

4. Spill Trajectory Modeling

The behavior of spilled oil on water is the result of the complex interaction of the forces described above. Accordingly, trajectory modeling can be difficult. The National Oceanic and Atmospheric Administration is capable of generating computerized spill trajectory forecasts. Requests for this service should be directed to:

John Whitney
Scientific Support Coordinator
National Oceanic and Atmospheric Administration
510 L Street, Suite 100
Anchorage, AK 99501

working hours: 271-3593; fax: 271-3139
after hours: 346-1634
pager: 275-3134

5. Data Sources

Hood and Zimmerman (eds). Gulf of Alaska: Physical Environment and Biological Resource. (Gulf of Alaska net surface currents)

LaBelle, J.C. and J.L. Wise. 1983. Alaska Marine Ice Atlas.

Minerals Management Service. 1985. Final Environmental Impact Statement, Proposed Norton Basin Lease Sale 100. Volume 1. OCS EIS/EA MMS 85-0085. USDI:MMS. Anchorage.

National Climatic Data Center and Arctic Environmental Information and Data Center (AEIDC). 1988. Climatic Atlas, Volume II: Bering Sea. (wind roses, tidal range data and map)

National Climatic Data Center and Arctic Environmental Information and Data Center (AEIDC). 1988. Climatic Atlas, Volume III: Beaufort Sea. (wind roses, tidal range data and map)

NANA. 1985. NANA Coastal Resource Service Area Coastal Management Plan. Volume 2, Background Report.

Northern Resource Management and Yeti Map Studio. October, 1984. Bering Straits Coastal Management Program: Volume One-Resource Inventory. (wind information)

U.S. Department of Commerce National Oceanic And Atmospheric Administration. 1989. Tide Current Tables 1990: Pacific Coast of North America and Asia. (tidal current data and information)

Legend

Bering Sea surface currents. Numbers indicate mean speed in cm/s. Arrows depict flow as follows:

⟵ Prevailing current direction

⟵ – – Variable current direction

Bering Sea surface currents synthesized from Arsen'er 1967; Goodman et al. 1942; Kinder and Schumacher 1981; LaBelle 1983; Marine Advisory Program, University of Alaska; Notorov 1963; Pelto 1981; Takenouti and Ohtahi 1974; and U.S. Navy 1977.

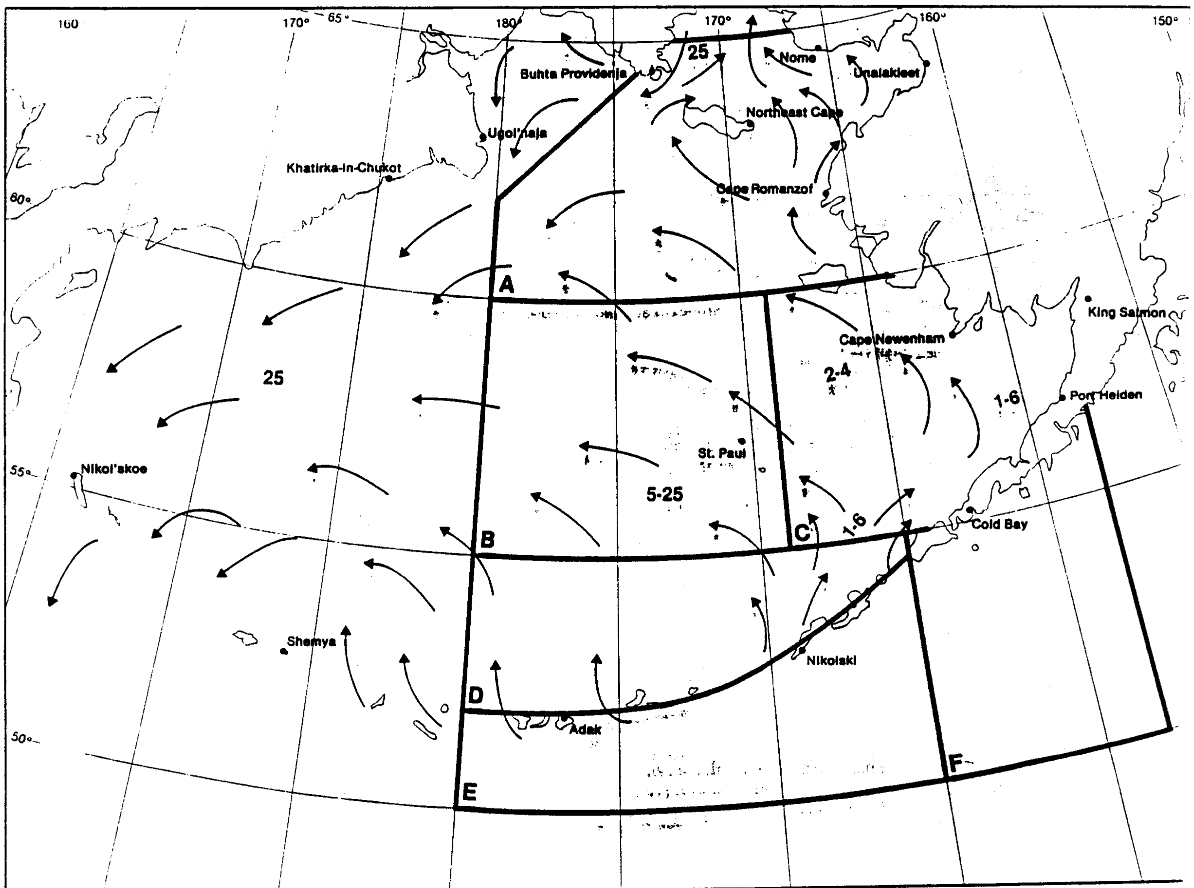
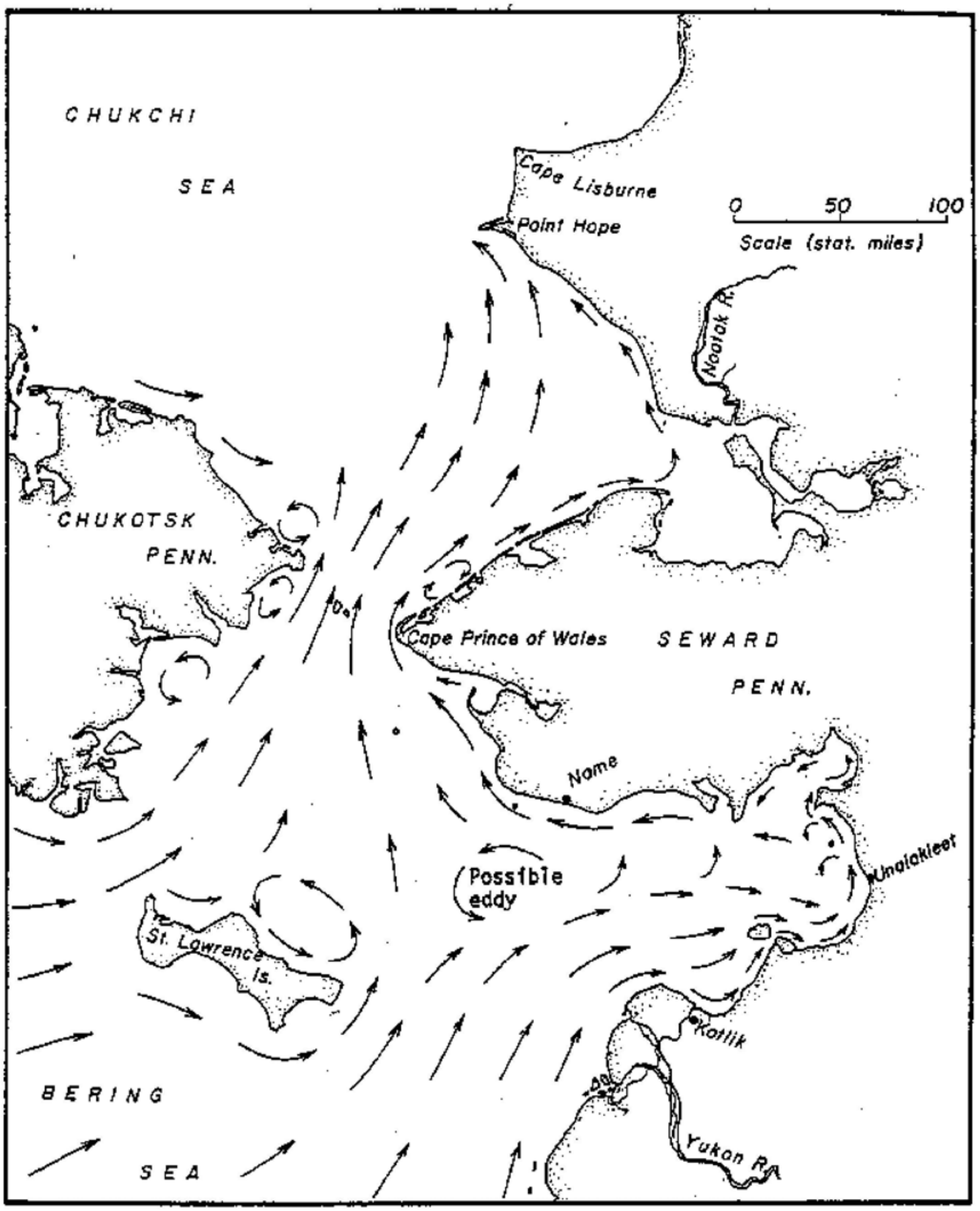
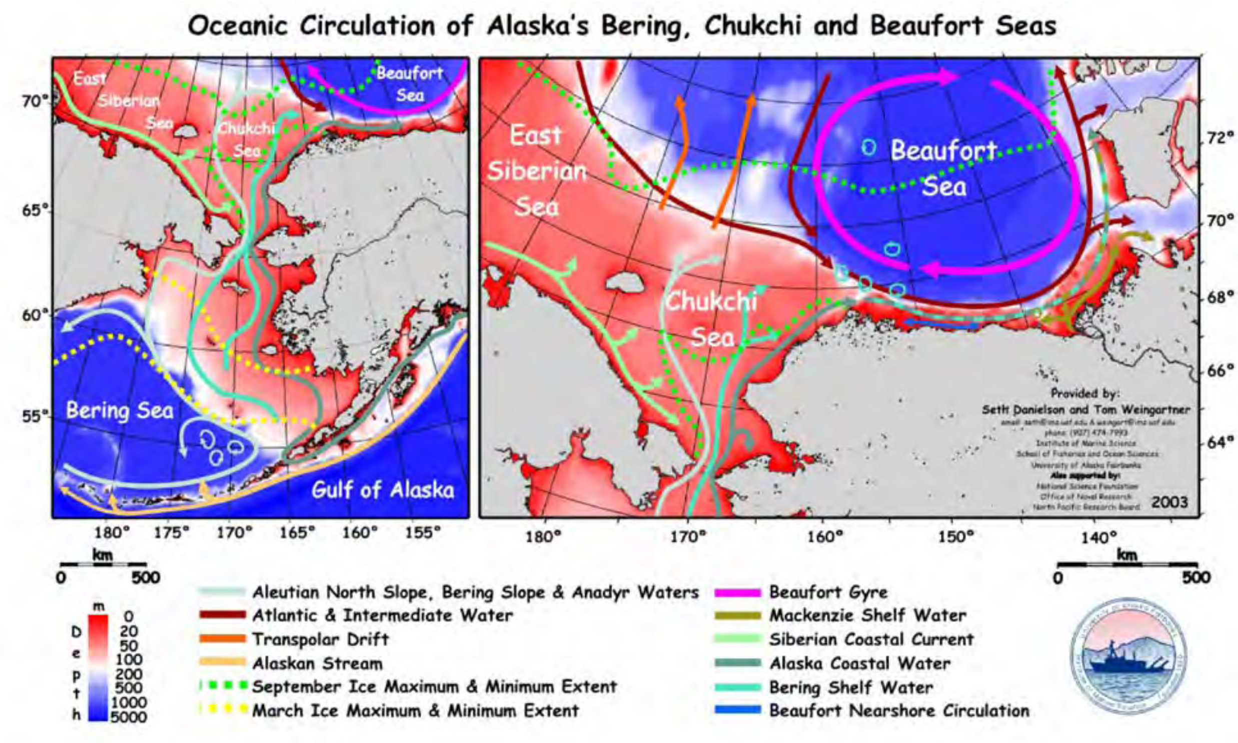


Figure 5. Bering Sea Currents—Wint



Surface circulation in the NE Bering Sea and SE Chukchi Sea during the summer and fall (open water) season.

Burbank, D.C., 1979, Drift Bottle Trajectories and Circulation in the NE Bering Sea and Se Chukchi Sea,Ó Habitat Section, ADFG, 52p.


Oceanic Circulation of Alaska's Bering, Chukchi and Beaufort Seas
East Siberian Sea
Chukchi Sea
Beaufort Sea
Bering Sea
Gulf of Alaska
Provided by:
Seth Danielson and Tom Weingartner
Institute of Marine Science
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
Also supported by:
National Science Foundation
Office of Naval Research
North Pacific Research Board
2003
km
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Depth m
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20
50
100
200
500
1000
5000
Aleutian North Slope, Bering Slope & Anadyr Waters
Atlantic & Intermediate Water
Transpolar Drift
Alaskan Stream
September Ice Maximum & Minimum Extent
March Ice Maximum & Minimum Extent
Beaufort Gyre
Mackenzie Shelf Water
Siberian Coastal Current
Alaska Coastal Water
Bering Shelf Water
Beaufort Nearshore Circulation

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BACKGROUND: PART FOUR – ABBREVIATIONS & ACRONYMS

AAC	Alaska Administrative Code
ACFT	Aircraft
ACP	Area Contingency Plan
ACS	Alaska Clean Seas (North Slope industry cooperative)
ADCED	Alaska Department of Community and Economic Development
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game, also as ADFG
ADMVA	Alaska Department of Military and Veterans Affairs
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities, also as ADOTPF
AFB	Air Force Base
AIR	Air Operations
AK ANG	Alaska Army National Guard
ALCOM	Alaska Command
ANSC	Alaska North Slope Crude oil
ANWR	Arctic National Wildlife Refuge
ARRT	Alaska Regional Response Team
AS	Alaska Statute, also Air Station (USAF)
ASAP	As soon as possible
BBLS	Barrels
BLM	Bureau of Land Management
BOA	Basic Ordering Agreement
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CAMEO	Computer-Aided Management of Emergency Operations
CCGD 17	Commander, Coast Guard District 17
CEMP	Comprehensive Emergency Management Plan
CFR	Code of Federal Regulations
COM	Communications equipment/capabilities
COMDTINST	Commandant Instruction (USCG)
COTP	Captain of the Port (USCG)
CP	Command Post
C-Plan	Contingency Plan
CTAG	Cultural Technical Advisory Group
DAA	Documentation/Administrative Assistance
DHSEM	Division of Homeland Security and Emergency Management (ADMVA)
DOD	Department of Defense
DOI	Department of the Interior
DOI-FWS	Department of the Interior – Fish and Wildlife Service
DRAT	District Response Advisory Team
DRG	District Response Group
EMS	Emergency Medical Services
ENV	Environmental Unit Support
EOC	Emergency Operations Center
EPA	Environmental Protection Agency, also as USEPA
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986

ESI	(Alaskan) Environmental Sensitivity Index
FDA	Food and Drug Administration
FIN	Finance
FIR	Fire Protection/fire fighting
F/V	Fishing Vessel
FAA	Federal Aviation Administration
FLIP	Flight Information Publication
FOG	Field Operations Guide
FPN	Federal Pollution Number
FOSC	Federal On-Scene Coordinator
FWPCA	Federal Water Pollution Control Act
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 (a training program)
HQ	Headquarters
IC	Incident Commander
ICS	Incident Command System
IDLH	Immediately Dangerous to Life and Health
INMARSAT	International Maritime Satellite Organization
JPO	Joint Pipeline Office (gov t agencies involved with managing/regulating TAPS)
LAT	Latitude
LEG	Legal
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LERP	Local Emergency Response Plan
LNG	Liquefied Natural Gas
LO	Liaison Officer
LONG	Longitude
LOSC	Local On-Scene Coordinator
LRRS	Long Range Radar Station
MAC	Multi-Agency Committee
MAP	Mapping
MAR CH	Marine Channel
MED	Medical Support/Health Care
MESA	Most Environmentally Sensitive Area
M/V	Motor Vessel
MLC	Maintenance and Logistics Command (USCG Pacific Area)
MLT	Municipal Lands Trustee Program
MOA	Memoranda of Agreement, also Municipality of Anchorage
MOU	Memoranda of Understanding
MSD	Marine Safety Detachment (USCG)
MSO	Marine Safety Office (USCG)
MSRC	Marine Spill Response Corp. (national industry cooperative)
NART	Northern Alaska Response Team
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NIMS	National Incident Management System

NIIMS	National Interagency Incident Management System
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	Natural Resource Damage Assessment (Federal/State)
NSF	National Strike Force
NSFCC	National Strike Force Coordinating Center
NWA	Northwest Arctic
NWR	NOAA Weather Radio
OHMSETT	Oil and Hazardous Material Simulated Environment Test Tank
OOD	Duty Officer or Officer On Duty
OPA 90	Oil Pollution Act of 1990
OPCEN	Operations Center
OPS	General Response Operations, also Office of Pipeline Safety (U.S. DOT)
OSC	On-Scene Coordinator
OSHA	Occupational Health and Safety Administration
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Response Organization
O/S	On-Scene
PIAT	Public Information Assist Team
PIO	Public Information Officer
PL	Private Line
PLN	General Planning Operations
POLREP	Pollution Report (USCG)
PPE	Personal Protective Equipment
RAC	Response Action Contractor
RCC	Rescue Coordination Center
RCRA	Resource Conservation and Recovery Act of 1978
RMAC	Regional Multi-Agency Coordination Committee
RP	Responsible Party
RPOSC	Responsible Party On-Scene Coordinator
RPD	Recovery, Protection and Decontamination
RQ	Reportable Quantity
RRT	Regional Response Team
RV	Recreational Vehicle
SAR	Search and Rescue
SCBA	Self-Contained Breathing Apparatus
SCP	Subarea Contingency Plan
SEC	Security
SHPO	State Historic Preservation Officer (ADNR)
SITREP	Situation Report (ADEC)
SONS	Spill of National Significance
SOSC	State On-Scene Coordinator

SS	Technical Expertise/Scientific Support
SSC	Scientific Support Coordinator (NOAA)
STORMS	Standard Oil Spill Response Management System
SUPSALV	U.S. Navy Supervisor of Salvage, also as NAVSUPSALV
TA	Trajectory Analysis
TAPS	Trans Alaska Pipeline System
TPO	Tribal Police Officer
T/V	Tank Vessel
USAF	United States Air Force
USCG	United States Coast Guard
VOSS	Vessel of Opportunity Skimming System
VPO	Village Police Officer
VPSO	Village Public Safety Officer
VTS	Vessel Traffic System
WRR	Wildlife Protection/Care/Rehabilitation/Recovery
WX	Weather