

POTENTIAL PLACES OF REFUGE: PART ONE – INTRODUCTION

Purpose and Scope

This Potential Places of Refuge (PPOR) section supplements information found elsewhere in the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the North Slope Subarea Contingency Plan (SCP). Information about sensitive areas associated with PPOR may be found in the Sensitive Areas - Section D of the SCP. Information about response strategies to protect sensitive areas and areas of public concern associated with PPOR are referenced in – Section G of the SCP.

A “place of refuge” is defined as a location where a vessel needing assistance can be temporarily moved to, and where actions can then be taken to stabilize the vessel, protect human life, reduce a hazard to navigation, and/or protect sensitive natural resources and other uses of the area (e.g., subsistence harvesting, commercial fishing, recreational boating). A place of refuge may include constructed harbors, ports, natural embayments, or offshore waters. This section identifies potential docking, anchoring, and mooring locations that may be selected as Places of Refuge in the North Slope Subarea. Actual designation of a Place of Refuge will always be an incident-specific decision made by the U.S. Coast Guard Captain of the Port (COTP) for Western Alaska.

The North Slope Subarea has thousands of miles of environmentally sensitive coastline. In addition to sensitive shoreline habitats such as marshes, sheltered tidal flats, and exposed tidal flats, North Slope supports a number of sensitive biological resources including birds, fish and shellfish, and marine mammals. The local communities are heavily reliant on marine resources for their livelihood and subsistence. Because of this unique relationship with the marine environment, much of the coast is utilized for subsistence activities and is extremely sensitive to the impacts of marine commerce, especially oil spills. Additional information about identification of sensitive areas and resources may be found in Section D of the SCP. Additional information about protection of sensitive areas may be found in Section G of the SCP.

The North Slope Subarea is used for limited marine commerce. This commerce has been directed to resupplying the communities and industry during the ice-free period of the summer and fall months. With climate change precipitating the ongoing reduction in sea ice and the subsequent expansion of the operating season, it is likely that shipping and industrial activities will increase throughout the Arctic. This activity will see a corresponding rise in marine commerce utilizing a variety of different types of vessels. Fuel barges, freighters, container ships, drilling ships, tankers and cruise ships operating in, and transiting through the North Slope may become more routine.

The North Slope is a unique operating environment, with limited infrastructure, extreme weather and few protected anchorages. These considerations affect the ability to accommodate stricken vessels of any size in these waters. The protection offered in most of the sites listed is limited and available only under certain circumstances outlined in the plans. In developing this section consideration was given to historical anchorage sites near communities. These are well known areas that have access to some of the limited infrastructure in the area that may affect repairs and assist in the response.

It is widely acknowledged that there is no perfect docking, mooring or anchoring site for all vessels in all situations. A vessel’s length and draft are major determining factors when considering a site for refuge. Deep draft vessels, such as oil tankers and cruiseships, cannot be taken to certain locations. Some ports and bays may have shallow approaches and deep draft ships cannot enter these locations. Shallower draft vessels, such as fishing vessels and supply vessels may be able to utilize these ports. For the purposes of this section, vessels have been divided into four categories:

Deep Draft II Vessels are vessels with lengths up to and greater than 1000 feet and typically drafts of 40-60 feet. The predominant deep draft vessels that may operate in the North Slope are container ships and tankers that are designed to the New Panamax dimensions.

Deep Draft I Vessels are vessels with lengths up to and greater than 1000 feet and typically have drafts of 20-40 feet. The predominant deep draft vessels of this type that may operate in the North Slope are cruiseships, container ships and tankers.

Light Draft Vessels are vessels up to 450 feet in length and have drafts to 20 feet. Freighters, catcher processors, and ocean going tugs are the most common light draft vessels operating in North Slope Alaska.

Shallow Draft Vessels are less than 300 gross tons and have drafts less than 15 ft.

The information in this section may be used for a vessel of any size that has suffered an incident and requires a temporary place of safe refuge, but it is focused on deep draft and light draft size vessels. Shallow draft sites were identified as additional options for responding to PPOR incidents.

Canadian Places of Refuge

The vessels utilizing the Northwest Passage will be transiting through United States and Canadian waters. Any incident involving a vessel near the boundary waters will require the coordination between the United States and Canadian governments.

Transport Canada-Marine Safety will coordinate the Canadian response to a place of refuge request in the Canadian waters as directed by the "National Places of Refuge Contingency Plan." This plan recognizes that decisions are based on incident specific considerations and that there are no pre-identified potential places of refuge. It recognizes that pre-planning requires having relevant information and specialists available to make appropriate decisions.

The Site Assessment Matrix (Table H-2) provides a limited listing of Canadian assets that are within 200 nm of the United States and Canadian border. Areas listed represent historically used areas for staging and mooring vessels and do not represent preferred places of refuge.

How the Document Was Developed

This section was developed in 2011 by a Work Group of interested and knowledgeable stakeholders in keeping with the Alaska Regional Response Team's "Guidelines for Places of Refuge Decision-Making," (Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Annex O). The Work Group arrived at a consensus on the potential places of refuge and submitted this document to the Subarea Committee for approval and inclusion in the North Slope Subarea Contingency Plan. The Work Group participants represented the following organizations:

- Alaska Department of Environmental Conservation
- Alaska Department of Natural Resources
- Alaska Department of Fish and Game
- Alaska Marine Pilots Association
- U.S. Coast Guard
- U.S. Department of the Interior – Offices of Environmental Policy and Compliance,
Fish and Wildlife Service, and National Park Service
- U.S. Environmental Protection Agency

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U.S. Department of Commerce-
NOAA
National Marine Fisheries Administration
North Slope Borough
City of Barrow
City of Point Lay
North Slope Borough Planning Commission
Transport Canada
Canadian Coast Guard

The first step of the PPOR process was to identify candidate sites (anchorages, moorings, docks/piers) within the North Slope Subarea. The Workgroup began by researching available information to determine major risk factors in the North Slope Subarea. Maps were developed, depicting the following risk and logistical information:

Locations of bulk fuel facilities and pipelines (Figure H-1);
Locations of communities with spill response agreements, spill response hubs and equipment depots (Figure H-2);
Locations of airports and docks (Figure H-3);
Locations of previous coastal oil spills (Figure H-4).

Figure H-5 is a composite map of all risk factors combined.

The second step led to the identification of 18 PPOR sites within the North Slope Subarea. A site assessment matrix (Table H-2) and key (Table H-1) were developed. The matrix consists of identified sites in each row with information about risk factors and site selection criteria in the columns. The information presented for each site includes:

PPOR identification;
Response Zone #;
Type of Berth;
Location Name;
Latitude;
Longitude;
Maximum Vessel Depth;
Anchoring Swing Room or Dock Face in feet;
Depth at dock face;
Depth at anchorage;
Bottom Type;
Exposure to;
Conflicting uses;
Ability to boom;
GRS in the area;
Sensitive Resources;
Distance to population centers; and
Distance to alternate PPOR.

The PPOR identification method begins with a “DII”, “DI” “L” or “S” which indicates the appropriate size vessel for the site. Following the letter is a number which indicates the response zone in which the site is located. This is then followed by a number which is a unique site identifier with no importance attached to the magnitude of the number.

The site assessment matrix contains potentially suitable emergency anchorage, docking and moorage locations based on operational factors such as water depth, swing room, exposure/protection, and

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navigational approach. Sites are grouped by the individual response zones and then by the maximum vessel size category suitable for the site.

Step 3 was to identify specific factors that should be considered as part of the site assessment process. These factors include:

- Distance from population and logistics centers;
- Proximity to environmentally sensitive areas, wildlife resources, threatened or endangered species or habitats, and/or historic properties;
- Uses, such as fisheries, subsistence use, tourism and recreational use, and the location of public or private facilities;
- Response factors such as booming feasibility and the proximity to existing Geographic Response Strategy (GRS) sites; and
- The distance from the closest alternative PPOR.

Step 4 afforded the work group and stakeholders in the area the opportunity to review and comment on the draft documents. In this review, the workgroup ensured that information critical to their area of expertise is included.

How to Use the Potential Places of Refuge Section

The "Guidelines for Places of Refuge Decision-Making" (Annex O of the Unified Plan) will be used for places of refuge decision-making in the North Slope Subarea.

[http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20\(Jan%2010\).pdf](http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20(Jan%2010).pdf)

Part Two of this document contains site-specific information for the PPOR in the North Slope Subarea. An index map (Figure H-6) at the beginning of this section shows the location of the PPOR maps. Each PPOR map consists of two parts: 1) a map page showing a locator map, and detailed nautical charts; and 2) a table page providing site information and local site conditions. All geographic data was collected using Mercator Projection, North American Datum 1983.

Who to Contact for Input

Comments and recommendations on these PPOR are welcomed. Please send your comments to either of the following agencies:

Alaska Department of Environmental Conservation
Prevention and Emergency Response Program
555 Cordova Street
Anchorage, AK 99501

United States Coast Guard
Captain of the Port for Western Alaska
510 L Street-Suite 100
Anchorage, Alaska 99501-1946

POTENTIAL PLACES OF REFUGE: PART TWO – PPOR MAPS

Index of PPOR Maps

The Workgroup developed three PPOR Maps within the North Slope Subarea. These maps aid in the site assessment process. These maps are larger in scale, showing a small portion of the Subarea in more detail than the maps in Part One. Figure H-6 provides an overview of the Subarea, identifying the location of each PPOR Map. Each PPOR Map has been assigned an identifying number, which has no relevance other than as a map identifier.

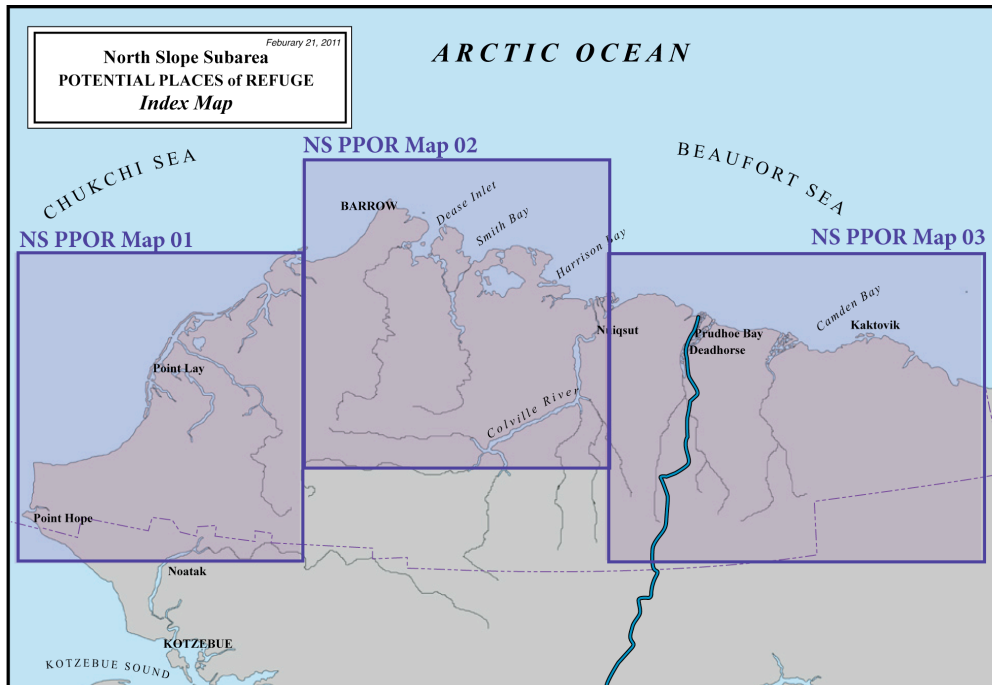


Figure H-6. North Slope Index Map for Potential Places of Refuge.

PPOR Maps

Each PPOR Map consists of two parts: 1) a graphic showing a locator map, and detailed nautical charts showing the location of anchorages, docks, and moorings and other information critical to the selection of a place of refuge; and 2) a series of tables providing site information regarding local site conditions, environmental sensitivities and other considerations.

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POTENTIAL PLACES OF REFUGE: PART THREE – REFERENCES

Alaska Regional Response Team. October 2004. Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Annex O, Guidelines for Places of Refuge Decision-Making.

Dept of Commerce - National Oceanic & Atmospheric Administration (NOAA), National Ocean Survey can provide detailed hydrographic charts of PPOR locations upon request. Contact Dave Neander, Dave.Neander@noaa.gov, (206) 526-6949, NOAA/ORR, 7600 Sand Point Way, NE, Seattle, WA 98115.

Useful Websites

The "Guidelines for Places of Refuge Decision-Making" Annex O of the Unified Plan
[http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20\(Jan%2010\).pdf](http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20(Jan%2010).pdf)

Alaska Dept. of Environmental Conservation, North Slope GRS Information
<http://www.dec.state.ak.us/spar/perp/grs/nwa/home.htm>

Alaska Dept. of Environmental Conservation, North Slope Subarea Contingency Plan.
http://www.dec.state.ak.us/spar/perp/plans/scp_nw.htm

Alaska Dept. of Natural Resources. North Slope Public Access Atlas.
<http://www.dnr.state.ak.us/mlw/planning/easmtatlas/>

Alaska Dept. of Natural Resources, North Slope Subarea maps including, general maps, land use and management maps, biologically sensitive area maps, most environmentally sensitive area maps, environmentally sensitive index maps, and geographic response strategies.
<http://www.asgdc.state.ak.us/maps/cplans/subareas.html#northwest>

U.S Bureau of Land Management. Alaska Land Information System.
<http://www.ak.blm.gov/alis/>

Transport Canada-Marine Safety
<http://www.tc.gc.ca/eng/marinesafety/menu.htm>