



APPENDIX IV

SCENARIOS



STATUTORY BASIS

[38 M.R.S. §546-A](#) requires that the Marine Oil Spill Contingency Plan address a range of scenarios, including spills of 100,000 gallons, 1,000,000 gallons and 6,000,000 gallons and the worst-case scenario in each major port area in both favorable and adverse conditions. The worst-case scenario in each major port area is the loss of an entire vessel of the following capacities:

- A. Portland: 30,000,000 gallons;
- B. Penobscot Bay and Penobscot River: 11,000,000 gallons;
- C. Portsmouth, NH: 13,000,000 gallons;
- D. Saint John, New Brunswick: 90,000,000 gallons;
- E. Eastport: 100,000 gallons; and
- F. Elsewhere on the coast: 30,000 gallons.

RESPONSE HIERARCHY

As detailed in Section 3 of this Plan, the DEP manages responses based on national guidance, in particular the [National Oil and Hazardous Substances Pollution Contingency Plan \(40 CFR §300\)](#), commonly referred to as the “National Contingency Plan” (NCP). The NCP specifies responsibilities for response actions among federal, state and local governments and describes resources available for response.

The NCP defines several size classes of discharges as guidance for Federal On-Scene Coordinators that determine the criteria that will be used for operational response phases for oil removal, ranging from initial discovery of a spill through containment, cleanup and disposal to documentation and cost recovery. These size classes of discharges of oil for coastal waters are:

- A. Minor discharge: less than 10,000 gallons
- B. Medium discharge: 10,000 to 100,000 gallons
- C. Major discharge: more than 100,000 gallons

In addition, any oil discharge that “poses a substantial threat to public health or welfare or the environment or results in significant public concern” shall be classified as a major discharge regardless of the size classes above.



The NCP also allows for the U.S. Coast Guard Commandant to classify a spill as a “Spill of National Significance” (SONS). A SONS is “a spill that, due to its severity, size, location, actual or potential impact on the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state, local and responsible party resources to contain and clean up the discharge”.

Using these criteria, all of the scenarios mentioned above meet the definition of a major discharge, and would trigger the National Contingency Plan, with the U.S. Coast Guard in the role of Federal On-Scene Coordinator. Section [300.135](#) of the NCP lays out the basic operational steps to be taken by the OSC and Responsible Party and requires coordination with all appropriate federal, state, local and private response agencies utilizing a unified command system. Consultation with the Regional Response Team, including the representative from DEP, is required.

[Subpart D](#) of the NCP requires the incorporation of the [Regional Contingency Plan](#) (RCP) and [Area Contingency Plan](#) (ACP) and addresses these operational phases for oil removal:

- A. Discovery and Notification
- B. Preliminary Assessment and Initiation of Action
- C. Containment, countermeasures, cleanup and disposal
- D. Documentation and Cost Recovery
- E. General Pattern of Response and Response to Worst Case Discharges

Tank vessels, offshore facilities and onshore facilities that may cause substantial harm to the environment by discharging into U.S. navigable waters, adjoining shorelines or the exclusive economic zone are required to have approved emergency response plans as outlined under [§300.211](#) of the NCP. These plans must address responding, to the maximum extent practicable, to a worst-case discharge, and to a substantial threat of such a discharge, of oil or a hazardous substance.

Therefore, the response actions of the DEP and other state agencies to any of these discharge scenarios will be as an integrated part of a Unified Command, utilizing principles of the National Contingency Plan, Regional Contingency Plan, Maine and New Hampshire Contingency Plan and, where applicable, the Canada – U.S. Joint Marine Pollution Contingency Plan – Atlantic Regional Annex (CANUSLANT). The DEP will integrate into the roles and responsibilities outlined in Section 4 of the main body of this Plan for each of these scenarios as follows:



AVERAGE MOST PROBABLE DISCHARGE (Less than 1,000 Gallons)

DEP Division of Response Services responds routinely to “small” marine oil spill discharges, such as the sinking of small boats nearshore or accidental discharges at shoreside facilities. Each of the four regional DEP response offices (Portland, Augusta, Bangor and Presque Isle) maintain an inventory of marine oil spill response equipment including oil spill response vessels, booms, sorbents and skimmers. This equipment is detailed in Appendix 1 of this plan, the Equipment and Support Services Directory. Each regional DEP office has multiple Oil and Hazardous Materials Responders trained in ICS, marine oil spill response and in the deployment of Maine’s planned [Geographic Response Strategies](#). In the event of a marine spill of relatively small size, the response would follow the steps outlined in Section 5 of this Marine Oil Spill Contingency Plan, Response Operations. If there is federal involvement, DEP would act in concert with the U.S. Coast Guard in mitigating the spill. The U.S. Coast Guard response actions for an average most probable discharge along the coast of Maine and New Hampshire are outlined in the [Maine and New Hampshire Area Contingency Plan Appendices](#), Section 9407.

SCENARIO #1: 30,000 to 100,000 GALLONS

Spills of this magnitude are rare along the Maine coast, and would be considered a major discharge for both federal and state responders. Causes for a spill of this magnitude may range from vessel spills to the loss of product from bulk storage due to hurricanes or other extreme weather events that may increase in frequency with climate change. Response by state entities would proceed as follows:

1. Discovery and Notifications

DEP is alerted to the spill by the responsible party, a member of the public or the U.S. Coast Guard / National Response Center. The responder makes an initial contact with the person reporting the spill, government officials or the responsible party as applicable. As required by notification protocols in Section 3.2 of the DEP Division of Response Services Emergency Response Plan, the responder notifies their supervisor or the supervisor on call if after hours.

The responder or supervisor ensures that the National Response Center has been notified, and one or more responders prepare to arrive on scene. The supervisor, supervisor on call or their designee proceeds with additional notifications as outlined in Section 2.4 of this Plan. Additional notifications, including the Governor’s office, may be made as outlined in Section 3.4 of the DEP Emergency Response Plan at the discretion of the supervisor and/or Division Director. Contact is established with U.S. Coast Guard Sector Northern New England.



2. Preliminary Assessment

Responder(s) begin to arrive on scene for the initial assessment to evaluate the nature and impact of the discharge on the public health, welfare and the environment. Responder(s) determine/confirm the source of the spill and whether it has been stopped or is ongoing and how it might be controlled. If controlled, responder(s) begin to consider the immediate deployment of protection strategies to mitigate further damage to environmentally sensitive areas and begin to assess the feasibility of removal of the oil and equipment needed to remove it.

The responsible party is given the opportunity to lead the response and clean up the spill. The DEP and / or U.S. Coast Guard may take over the clean-up if the actions of the responsible party are not satisfactory.

3. Development of Incident Objectives and Priorities

As outlined in Section 5.3 of this Plan, protecting human health and safety of the responders and the public must be the first and foremost priority, followed by stopping the source of the discharge. Responders can then begin to plan for containing, confining and recovering the product, protecting sensitive areas and minimizing economic impacts. Preplanned [Geographic Response Strategies](#) would be utilized as the first line of defense for sensitive area protection in the vicinity of the spill.

With a spill of this magnitude, a Command Post would be in the initial stages of set-up, either by the responsible party or the U.S. Coast Guard as outlined in the [Maine and New Hampshire Area Contingency Plan](#). The responsible party would be expected to implement its Facility Response Plan or Vessel Response Plan as required under the National Contingency Plan. The following state resources at a minimum would be en route to the Command Post to initiate actions in accordance with the Incident Command System:

- a. Director, Division of Response Services as the designated State On-Scene Coordinator within Unified Command
- b. Designee(s) of the Director of the Division of Response Services to the Operations Section
- c. Response Division support for Situation Unit / GIS mapping to the Planning Section
- d. Oil Spill Biologist / designee(s), Maine Department of Inland Fisheries and Wildlife to the Environmental and/or Operations Unit or Wildlife Rehabilitation Center
- e. Oil Spill Biologist / designee(s), Maine Department of Marine Resources to Environmental Unit



These resources work to further develop incident objectives and priorities within the ICS structure along with the Federal On-Scene Coordinator (U.S. Coast Guard) and responsible party throughout the response. The Response Division begins to assess personnel workload and schedules in order to continue to support the response over the long term. As the response ramps up over the next 24 – 48 hours, DEP Division of Resource Administration personnel begin to monitor DEP expenditures. The DEP Communications Director or designee coordinates the dissemination of information to the public with other agencies in the Joint Information Center. Other DEP personnel are consulted as needed on issues of air quality, environmental assessment, etc.

4. Containment and Control

Clean-up actions begin as directed by Unified Command to minimize the effect on natural and economic resources. It is expected that DEP Division of Response Services Oil and Hazardous Materials Responders will play key roles in performing and directing field operations as well as in the Incident Command Post. Response actions will be taken as directed by the Operations Unit within the ICS structure and as outlined in any Incident Action Plans developed by Unified Command. DEP responders are trained in boat handling and boom deployment, and are also qualified to direct or participate on Rapid Assessment Teams or Shoreline Cleanup Assessment Teams. The overall spill response process is outlined in Figure 5.1 of this Plan.

5. Natural Resource Damage Assessment and Restoration

DEP personnel from the Bureau of Remediation and Waste Management, Division of Petroleum Management will represent the department in any natural resource damage assessment and restoration activities, along with other state and federal trustees. The Division of Petroleum Management maintains a list of prequalified contractors to assist with field services to document injury and damages and to perform natural resource damage assessments.

In any of the following scenarios involving the loss of an entire vessel in each port area, DEP actions would follow the general outline above. Major resources would be brought in from other areas of the country, and in each case the responsible party would be expected to implement its vessel response plan for a worst-case discharge. U.S. Coast Guard resources and oil spill response organizations would be involved in very large numbers and the response would be organized under a Unified Command. The National Contingency Plan, [Regional Contingency Plan](#) and [Maine and New Hampshire Area Contingency Plan](#), as well as this Maine Marine Oil Spill Contingency Plan would all be relevant in directing the response and recovery. Therefore,



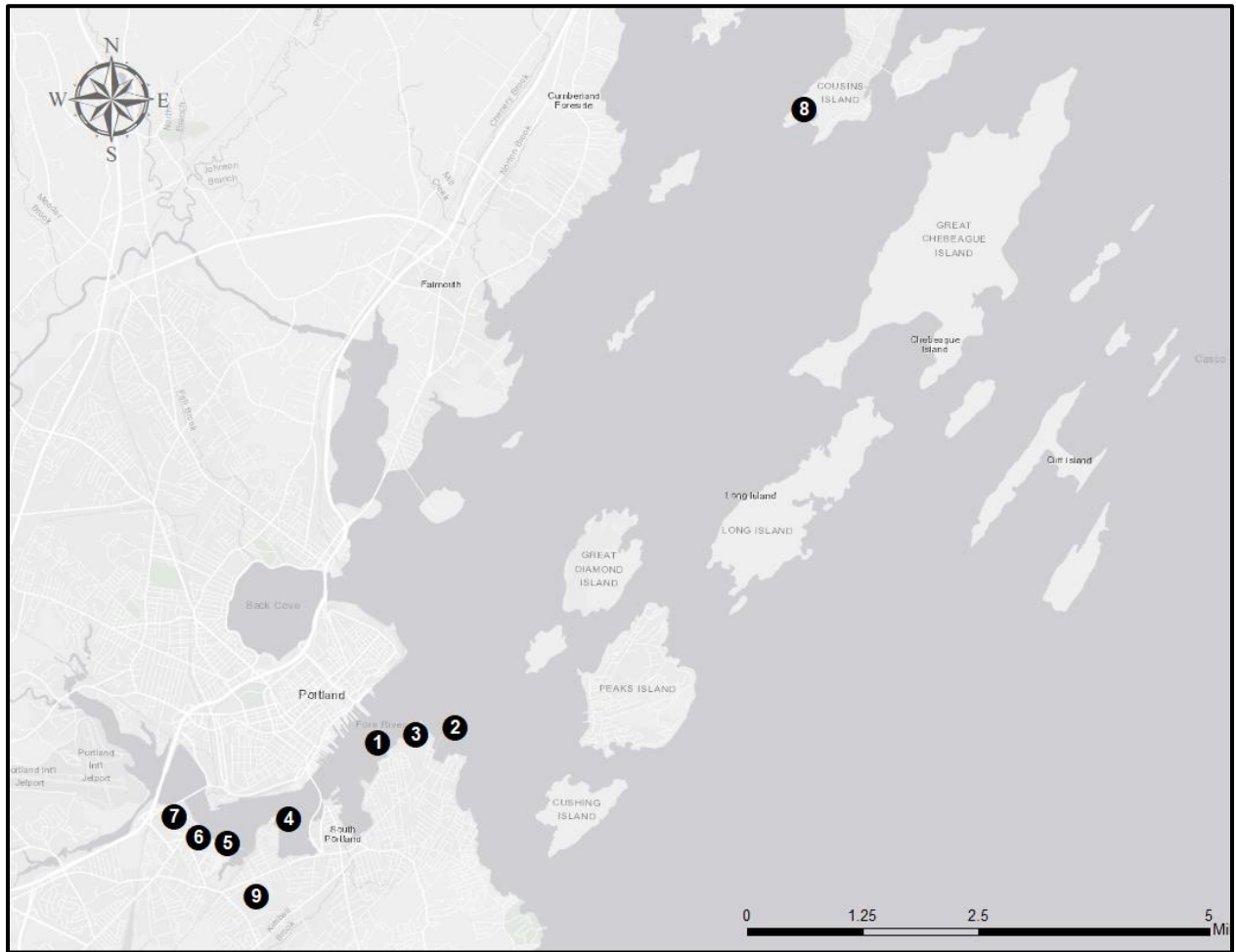
only specific differences between the major ports, participants or magnitude of the response effort are addressed here.

SCENARIO #2: LOSS OF ENTIRE VESSEL - 30,000,000 GALLONS, PORT OF PORTLAND

1. Roles and Responsibilities: Spills of this magnitude will be considered a major discharge as defined by the National Contingency Plan. The responsible party / destination terminal (if in Maine) would be required to take the lead and invoke their vessel and facility emergency response plans. Likely to be classified as a Spill of National Significance (SONS) by the U.S. Coast Guard Commandant. A National Incident Commander would direct response and federal, state and local resources at the national level. One or more Area Commands may be formed at the regional level. Tactical operations would continue to be directed at the on-scene Incident Command level. Adjacent states would monitor the spill for possible deployment should they be affected. Strategic coordination would involve the National Response Team, Regional Response Team, Governor(s) and chief executives of local governments. Maine State personnel would respond as outlined in Scenario #1.
2. Port Considerations: The Port of Portland is the largest on the coast of Maine and has a collection of terminals capable of accepting all forms of cargo including project, containerized, bulk and petroleum. There are six marine oil terminals located in the Fore River, where current velocities are +/- 1 knot. One power plant using #6 oil is located on Cousin's Island. An International Marine Terminal handles containers. A rail system connects the port to a national network. The federal navigation channel is maintained at a depth of 35 feet mean low water (MLW), and the mean tidal range is 10 feet. Tug service is available. The harbor is generally ice-free. Casco Bay Ferries services islands in Casco Bay. Monthly average ocean temperatures range from 62° F in summer to 33° F in winter.
3. Sensitive Areas and Initial Protection Strategies:
Upper Fore River: [B-03-1](#), [B-03-2](#)
Back Cove: [B-04-1](#)
Broad Cove: Open water recovery
Scarborough Marsh / River: [B-01-1](#)
Cousins Island: [B-08-1](#), [B-09-1](#)



Portland Harbor / Casco Bay



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|-----------------------------|-------------------------|
| ① Portland Pipe Line Pier 1 | ⑤ Global Oil |
| ② Portland Pipe Line Pier 2 | ⑥ Buckeye Partners |
| ③ Gulf Oil | ⑦ Sprague Oil |
| ④ Citgo Oil | ⑧ NextEra Wyman Station |

- 4 **Favorable Conditions:** Late spring through fall conditions are generally favorable for boom deployment and on-water skimming. Tidal currents in Casco Bay are not particularly strong compared to other areas of the coast. Several boat ramps provide access to the bay (see Geographic Response Strategies for details). The Portland metro area provides many options for hotels and restaurants and other support services. Local oil spill response organizations are based nearby. Marine terminals on the river have Facility Response Plans and in Maine are also liable for carriers in state waters destined for or leaving their facilities.



- 5 Adverse Conditions: Although the bay is for the most part ice-free, winter conditions, including storms and the presence of some ice in protected areas and coves may hamper efforts for booming and on water collection. Hotels for large numbers of responders may be limited during the busy tourist months in summer. Many vessels use the bay in favorable weather, and many piers line the waterfront, complicating cleanup if oiled.

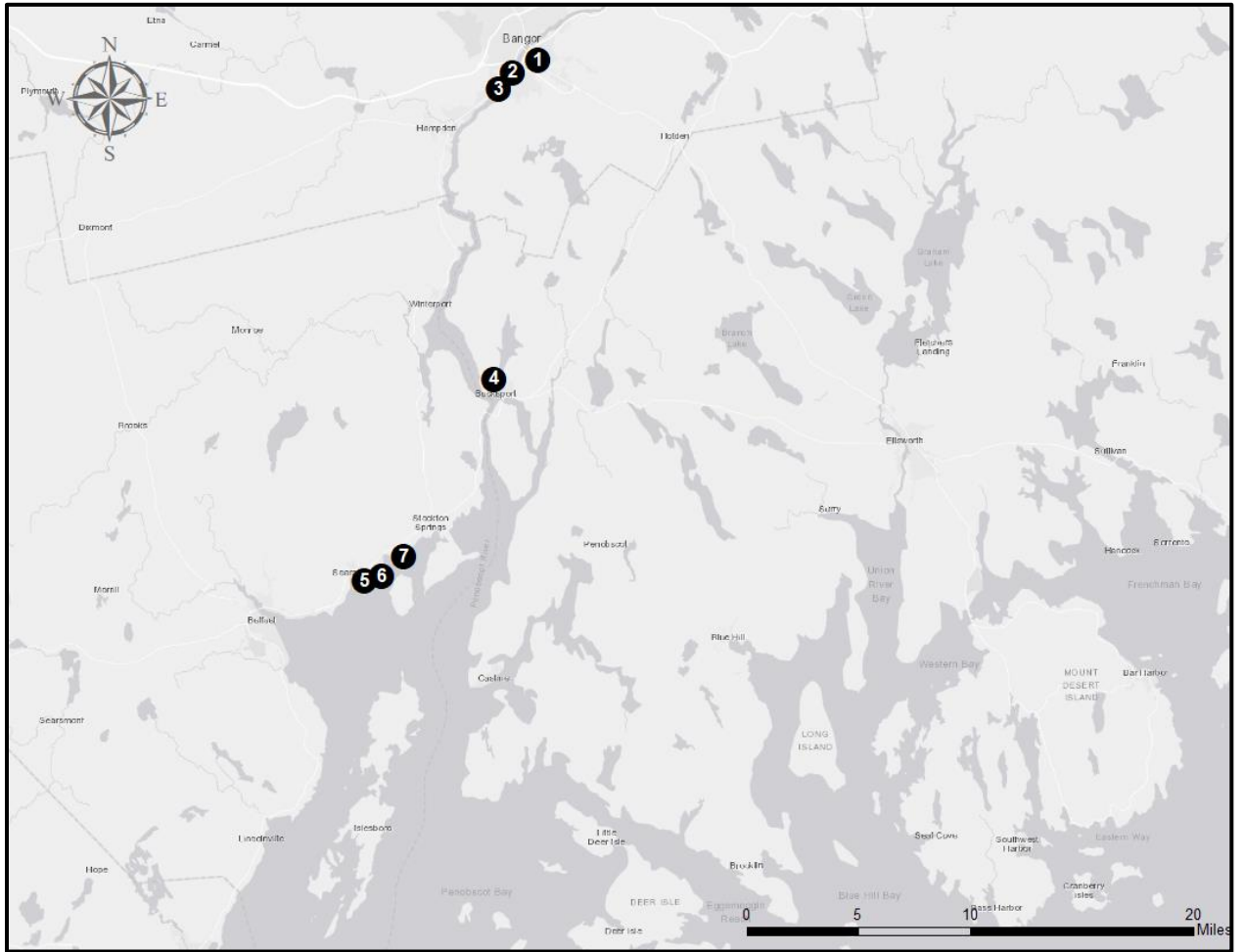


SCENARIO #3: LOSS OF ENTIRE VESSEL – 11,000,000 GALLONS, PENOBSCOT BAY AND PENOBSCOT RIVER

1. Roles and Responsibilities: As described in Scenario #2, this would classify as a major discharge under the National Contingency Plan and likely a Spill of National Significance. The responsible party / destination terminal (if in Maine) would be required to take the lead and invoke their vessel and facility response plans. National, private and government resources would be deployed as outlined in the NCP, RCP and ACP.
2. Port Considerations: Large vessels transit Penobscot Bay and River to reach the Port of Searsport, where two large marine oil terminals are located. The Port of Searsport is the second largest deep-water port in Maine. The tidal range is 10 feet. The channel and turning basin are maintained at 35 feet MLW. There are two piers located at Mack Point, at the northern end of the bay that accommodate a wide variety of liquid and dry cargoes. Tug service is available, as well as intermodal truck to rail service. Monthly average ocean temperature ranges from around 60° F in summer to 33° F in winter. Tankers also occasionally transit to Bucksport to service an oil terminal there. Facilities upriver get their product via pipeline or truck.
3. Sensitive Areas and Initial Protection Strategies:
Frankfort / Marsh River: [C-18-1](#)
Castine Harbor: [C-15-1](#)
Souadabscook Stream: [C-19-1](#)
4. Favorable Conditions: Late spring through fall conditions are favorable for working on the river to conduct booming and skimming operations. Several boat launches provide access to the bay in critical areas (see [Geographic Response strategies](#)). Hotels, restaurants and services are nearby in Bangor. The Penobscot River Oil Pollution Abatement Committee (PROPAC) co-op is active on the river. Marine terminals on the river have Facility Response Plans and in Maine are also liable for carriers in state waters destined for or leaving their facilities.
5. Adverse Conditions: Tidal currents of up to several knots occur in the Penobscot River and especially the Bagaduce River near Castine. Winter conditions, particularly the presence of ice in protected areas and coves may hamper booming and collection operations. Road access to the shoreline is limited for collection purposes. Major services are located approximately 30 miles away in Bangor. Oil Spill Response Organizations are somewhat limited in the area.



Penobscot Bay and Penobscot River



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|---|-----------------------|---|------------------|
| ① | Dead River Bulk Plant | ⑤ | Sprague Terminal |
| ② | Buckeye Partners | ⑥ | Irving Terminal |
| ③ | Cold Brook Energy | ⑦ | GAC Chemical |
| ④ | Webber Tanks | | |



SCENARIO #4: LOSS OF ENTIRE VESSEL –13,000,000 GALLONS, PORTSMOUTH, NH

1. Roles and Responsibilities: As described in Scenario #2, this would classify as a major discharge under the National Contingency Plan and likely a Spill of National Significance. The responsible party / destination terminal (if in Maine) would be required to take the lead and invoke their vessel and facility response plans. National private and government resources would be deployed as outlined in the NCP, RCP and ACP. The states of Maine and New Hampshire would both be represented in Unified Command and within the incident command post structure.
2. Port Considerations: The Port of Portsmouth, New Hampshire lies at the mouth of the Piscataqua River, which forms the border of Maine and New Hampshire. Two marine terminals and a power plant are located on the NH side of the river, as is U.S. Coast Guard Station Portsmouth Harbor. Portsmouth Naval Shipyard is located on the ME side of the river. The Port of Portsmouth handles bulk and project cargo as well as containers. Tug service is available. The navigation channel and associated turning basin are maintained at 35 feet MLW. The tidal range is 9.5 feet. Tidal currents velocities can reach 5 knots in some areas. Monthly average ocean temperatures range from 62° F in summer to 35° F in winter.
3. Sensitive Areas and Initial Protection Strategies:
The Great Bay Estuary extends from the Piscataqua River and is the #1 priority for Protection on the River.
Little Bay: Great Bay Protection Strategy Option 1: [A-13-2](#)
Furber Strait: Great Bay Protection Strategy Option 3: [A-13-3](#)
Spruce Creek: [A-29-1](#)
Spinney Creek: [A-26-1](#)
Chauncey Creek: [A-30-1](#)
4. Favorable Conditions: Late spring through fall conditions are favorable for working on the river for booming and skimming. Avoid maximum tidal currents at mid-tide. Several boat launches provide access to the river (see [Geographic Response Strategies](#)). Hotels, restaurants and services are available in the area. Marine terminals on the river have Facility Response Plans.
5. Adverse Conditions: Tidal currents of up to 5 knots may be encountered at mid-tide, making the river dangerous for booming and small boat maneuvering. Winter conditions and ice in protected areas and coves will make booming and skimming more difficult.



Portsmouth Harbor / Piscataqua River



- | | |
|-------------------------------|---|
| ① NH State Port Authority | ⑤ Sea-3 LPG Terminal |
| ② Irving Oil Terminal | ⑥ Granite Shore Power Newington Station |
| ③ Sprague Terminal | ⑦ Granite Shore Power Schiller Station |
| ④ Sprague Avery Lane Terminal | ⑧ Portsmouth Naval Shipyard |



SCENARIO #5: LOSS OF ENTIRE VESSEL – 100,000 GALLONS, EASTPORT, ME

Roles and Responsibilities: This would classify as a medium to major discharge under the National Contingency Plan. State of Maine personnel would respond as in Scenario #1. Oil and Hazardous Materials Responders from the Bangor regional office would be the first DEP staff on scene. U.S. Coast Guard Station Eastport would be on site to respond immediately. As Eastport is located on the Canadian border, the Canada – United States Joint Marine Pollution Contingency Plan Atlantic Regional Annex (CANUSLANT) would be invoked. The [CANUSLANT](#) plan describes in detail provisions for a coordinated cross-border response. The [National Contingency Plan](#) and [Maine and New Hampshire Area Contingency Plan](#) would also guide the response.

Port Considerations: Two cargo terminals are located in the Port of Eastport, handling project cargoes, containers, forest products, automobiles and various dry and liquid bulk commodities. The port provides berthing for commercial vessels of the fishing and tourist industries of Passamaquoddy and Cobscook Bays. The U.S. Coast Guard maintains a station at the port. Cruise ships are increasingly common. Tug service is available. Eastport is the deepest natural seaport in the continental United States, with depths at both terminals exceeding 40 feet. Tides and tidal currents are extreme. Monthly average ocean temperatures range from 52° F in September to 37° F in March.

Sensitive Areas and Initial Protection Strategies:

Pleasant Point: [D-22-1](#)

South Bay and Federal Harbor: [D-20-1](#)

Straight Bay and Nutter Cove: [D-19-1](#)

Pennamaquan River / Sipp Bay: [D-21-1](#)

Whiting Bay: [D-18-1](#)

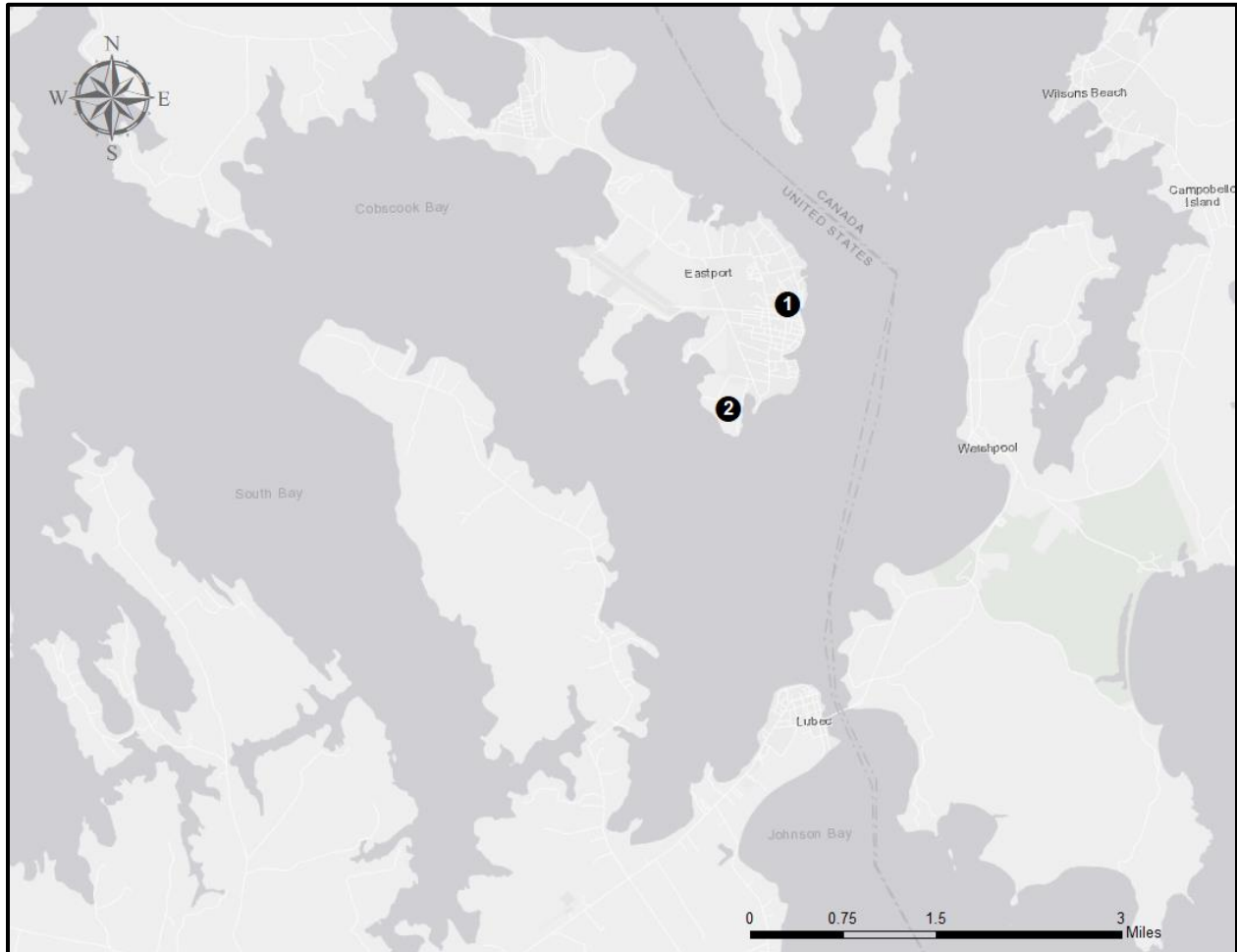
Campobello Island (Canada)

Favorable Conditions: Late spring through fall and slack tide conditions would be best conditions for booming and skimming operations.

Adverse Conditions: Tides at Eastport are approximately 20 feet, contributing to very high tidal current velocities. Velocities can be up to several knots, hampering booming and skimming operations. Fog is common. Oil spill response organizations in the region are primarily located in Canada in the Saint John area, approximately 100 road miles to the north. Water temperatures are generally cold. Winter conditions and storms could make response operations difficult. Hotels, restaurants and services are very limited, which may require a more distant incident command post location (e.g., Bangor). Road access to the shore for cleanup and collection is also limited.



Eastport Area



① Eastport Breakwater Terminal

② Estes Head Cargo Terminal



SCENARIO #6: LOSS OF ENTIRE VESSEL – 90,000,000 GALLONS, SAINT JOHN, NEW BRUNSWICK, CANADA

Roles and Responsibilities: Response to a spill in Saint John would be led initially by the Canadian Coast Guard and Responsible Party in a Unified Command. The Canadian Coast Guard also responds to oil spills using the Incident Command System. Roles and responsibilities in Canada are outlined in detail in the [Canadian Coast Guard Marine Spills Contingency Plan](#). Under the Canadian [Marine Liability Act, Part 6](#), the owner of a ship is strictly liable for oil pollution damage from a ship including reasonable costs for clean-up, preventive measures, monitoring costs and for the costs of reinstatement measures. As in Scenario #5, [CANUSLANT](#) would be activated, and the U.S. would render assistance as necessary. Oil from a spill of this magnitude would likely move south toward U.S. waters, possibly necessitating a full response under the [National Contingency Plan](#) and [Maine and New Hampshire Area Contingency Plan](#).

Port Considerations: Port Saint John is Eastern Canada's largest port by volume. Twelve cargo terminals are located at the port, handling dry bulk, project and liquid commodities. Cruise ships are common in the port. Irving Oil operates a terminal serving its oil refinery in Saint John. The Canaport crude oil / LNG receiving terminal handles supertankers for Irving Oil. The Canaport facilities are located 9 kilometers east of the city. Tug service is available. The Canadian Coast Guard maintains a station in Saint John. The port is located in the Bay of Fundy, where the world's highest tidal range occurs at about 43 feet. Tidal currents are therefore very strong and can be up to several knots. Ocean water temperatures range from a high of about 35° F to 57° F.

Sensitive Areas and Initial Protection Strategies:

Passamaquoddy Bay (mostly in Canada) is rich in environmental resources, including whales, shellfish, finfish and shorebird areas. Aquaculture sites are common. Environment and Climate Canada's [Environmental Emergencies Program](#) can provide information on resources and protection strategies in Canada.

Cobscook Bay:

Pleasant Point: [D-22-1](#)

South Bay and Federal Harbor: [D-20-1](#)

Straight Bay and Nutter Cove: [D-19-1](#)

Pennamaquan River / Sipp Bay: [D-21-1](#)

Whiting Bay: [D-18-1](#)

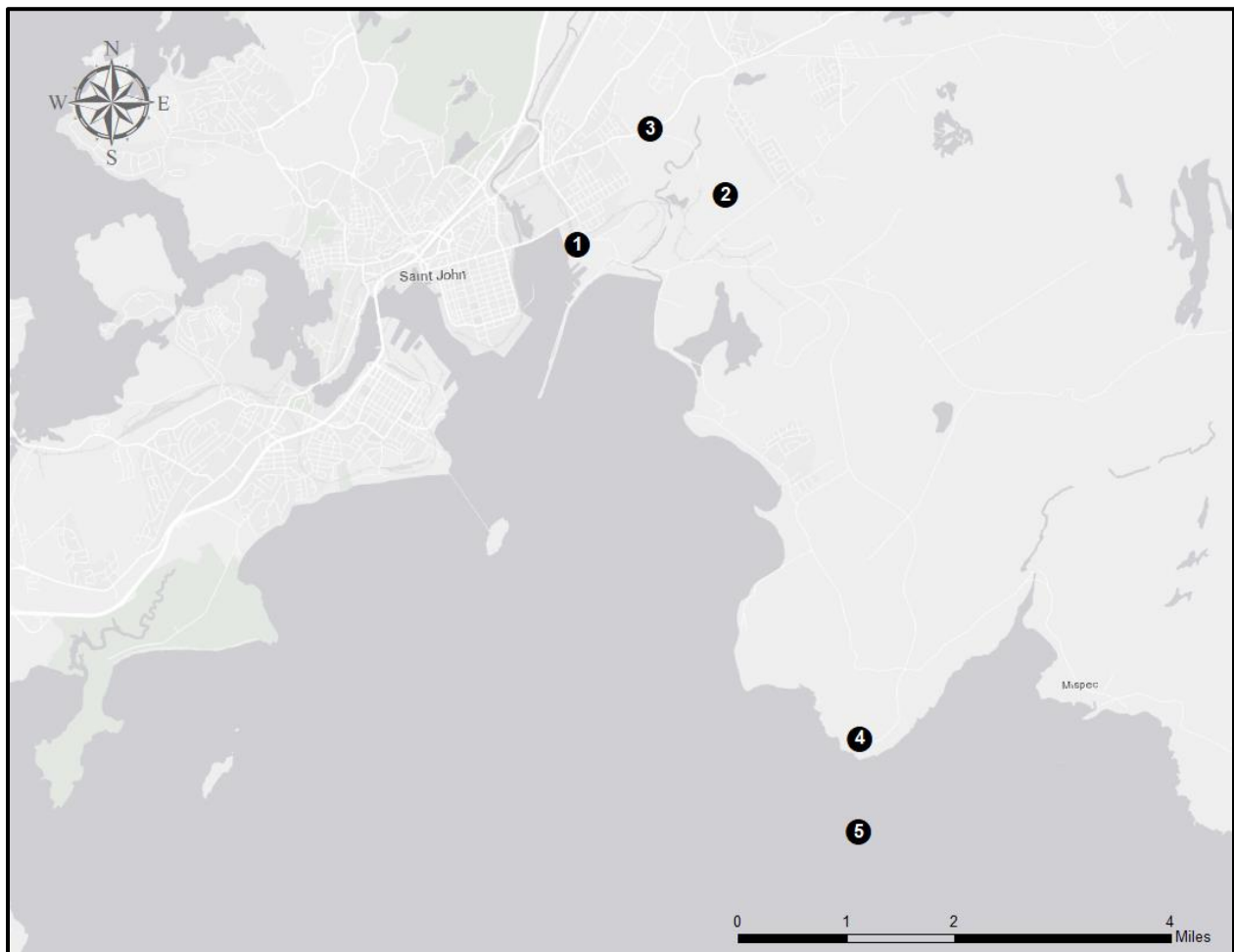
Archaeological and cultural sites



Favorable Conditions: Late spring through fall and slack tide conditions would be best conditions for booming and skimming operations. The Atlantic Emergency Response Team ([ALERT](#)) spill response organization is based in Saint John. The Canadian Coast Guard has a station in Saint John. Hotels, restaurants and services are available.

Adverse Conditions: Tides at Saint John are over 40 feet, contributing to very high tidal current velocities. Velocities can be up to several knots, hampering booming and skimming operations. Fog is common. Water temperatures are cold, and winter conditions or storms can make booming or recovery difficult.

Port Saint John, New Brunswick, Canada



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|----------------------------|---------------------|
| ① Irving Oil Terminals Ltd | ④ Canaport LNG |
| ② Irving Oil Refinery | ⑤ Canaport Monobuoy |
| ③ Saint John Refinery | |