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Introduction

This Area Plan is an Annex to the Central & Arctic Regional Chapter. It is designed to be a tool or guide for the Federal Monitoring Officer or the Canadian Coast Guard On-Scene Commander.

Direction and information contained in this Area Plan is consistent with policy given in the Canadian Coast Guard Marine Spills Response Plan and the operating procedures prescribed in the Central & Arctic Regional Plan (2005). Area plans are only intended to provide information and assist the user in decision making.

Purpose

The purpose of Lake of the Woods Area Plan is to provide a guide for responders on specific priorities and tactics for conducting a response to a hydrocarbon spill in the area of Lake of the Woods. The plan focuses on the first 12-24 hours of an incident for emergency first responders.

Area Description

Reference: Canadian Hydrographic Service Charts 6201, and 6211-6218

This plan encompasses The geographical area covered by this risk analysis includes all waters of the greater Lake of the Woods, from Shoal Lake in the west to Dogpaw Lake in the east and from the mouth of the Rainy River in the south to the Winnipeg River below Kenora in the north. This region corresponds to the rectangle bounded by 93°30'W – 95°30'W and 48°50'N – 49°50'N. There are four Canadian communities in the area, with a year-round population of approximately 20,000 inhabitants, though in summer there can be as much as a tenfold increase in the smaller communities due to seasonal inflow.

This region includes the western portions of the Kenora and Rainy River Districts of Ontario. The Canada-U.S. border runs roughly north-south through the southwestern portion of the lake, with the state of Minnesota on the American side. The only port on the American side of the border is the town of Warroad, Minnesota, with a population of 1722¹.

Lake of the Woods covers an area of 3,846km², including over 14,000 islands with an area of nearly 700km². The lake measures 110km across at its widest point. It has one of the most irregular shorelines of any lake in the world, forming

¹ U.S. Census, 2000.



many narrow passages, inlets and involuted bays. This irregular shape limits available fetch and acts to baffle some of the effect of wind and waves, but larger waves can develop in the more open Big Traverse Bay in the south-western portion of the lake. The water level in the lake is controlled by Lake of the Woods Control Board. The shipping season approximately spans the months of May-November, depending on icing conditions on the Lake.



Figure 1 - Roadmap of Lake of the Woods and surrounding area²

Access by road: There is road access to Lake of the Woods at Kenora, Sioux Narrows, Nestor Falls and Morson. Kenora is located on Highway 17 – Trans-Canada Highway – which leads to Thunder Bay in the east and Winnipeg in the

² Source: Official Road Map of Ontario, Ontario Ministry of Transportation. (04 July 2003)

<http://www.mto.gov.on.ca/english/traveller/map/>



west. Highway 71 connects Kenora to Sioux Narrows and Nestor Falls in the south, and through tertiary roads to Morson.

Access by water: Communities are situated within easy reach of navigable water.

Access by air: There are 3 airstrips located in the area of Lake of the Woods. Kenora airport also has four 16ft x 16ft daytime-only helipads belonging to the Ontario Ministry of Natural Resources. Fuelling service is available at Kenora.

Plans

Municipal plans

- City of Kenora Emergency Management Plan
- Town of Sioux Narrows Emergency Management Plan
- Town of Morson (unverified)

Provincial plans

- Planning for Spills Contingencies – Ministry of Environment
- Ministry of Natural Resources

Federal plans

- CCG Marine Spills Response Plan, National Chapter, Central and Arctic Regional Chapter, and Area Annex for Lake Superior
- National Environmental Emergencies Contingency Plan – Environment Canada, Environmental Emergencies Program
- Regional Environmental Emergencies Team Contingency Plan

International

- Canada-U.S. Joint Marine Pollution Contingency Plan and Annex 1 CANUSLAK – provides a mechanism to deal with any marine emergency incident which pose a threat to the waters and property of both countries
- Minnesota State Department of Environmental Conservation – outlines response procedures for spills within the state
- US Environmental Protection Agency Regional Contingency Plans – highlights the response network in place of the EPA's responsibilities.

Priorities

The following is a list of those priorities in the Lake of the Woods area. These priorities have been established on the basis of consultation with the local members of the Regional Environmental Emergencies Team (REET), as well as representatives of the provincial Ministry of Natural Resources and Ministry of the



Environment. Environmental Sensitivity Atlas (ESA) data are not available for Lake of the Woods. Priorities have been assigned according to the National Marine Spills Contingency Plan and include the protection of human life and health, environment and property.

In addition, the ranking of the priorities is affected by the amount of oil shipped in the area, and traffic convergence. For example, when given two priorities of equal ranking based on available information, that priority located in the area of the highest traffic route will be given a higher priority.

List of Priorities

- Town of Kenora
- Shoal Lake
- Three Sisters Islands
- Clearwater Bay, Echo Bay, Cul-de-sac Bay
- Whitefish Bay
- Sabaskong Bay

Strategies

Specific strategies for addressing spills in this area are provided below. The first option is that most commonly used and believed the most effective. Optional strategies follow in the event circumstances dictate that the first strategy may not be used.

All the strategies below are untested and require further examination through site visits and/or deployment exercises.

The place names used in this plan are drawn from Canadian Hydrographic Service charts of the area. Refer to the appropriate chart(s) for further information.

Specific Strategies to Protect Environmental Sensitivities

The following strategies have been developed for the various areas of the Lake.



Town of Kenora

Charts 6201, 6218-1, 6212-2

- Town of Kenora water intake

The municipal potable water intake for the town of Kenora is located at Cameron Point, in the narrows between Coney Island and the town itself.

Objective: Protection of town drinking water quality

Strategy: Isolation of intake until contamination has passed

Tactics: Notify town officials of risk of contamination of potable water source, and obtain estimates of how much safe water is stored in the system and how long the town can subsist on stored water.

An assessment will be needed of the risk to water quality at the level of the intake. This will depend on the proximity of the spilled product, the type of product, length of time since the spill, prevailing currents and winds, and the depth of water over the intake. From this information must be determined whether enough oil has potentially been mixed into the water column to potentially contaminate the water being brought into the municipal distribution system.

If there is a potential threat, the best tactic may be to stop the intake of water until flushing by wind and current return the water quality to its normal state. Water quality testing data would be very useful in informing this decision. Alternatively, exclusion or containment boom may be employed to prevent product from entering areas where it might mix with the water column and adversely affect the intake.





Figure 2 - Downtown Kenora³

³ City of Kenora website: http://www.city.kenora.on.ca/pdf_storage/citymaps/kenora_map.pdf (28 July 03)



- Anicinabe park & campground – boat launch and recreational beach

Objective: Protection

Strategy: Closure of Golf Course Bay

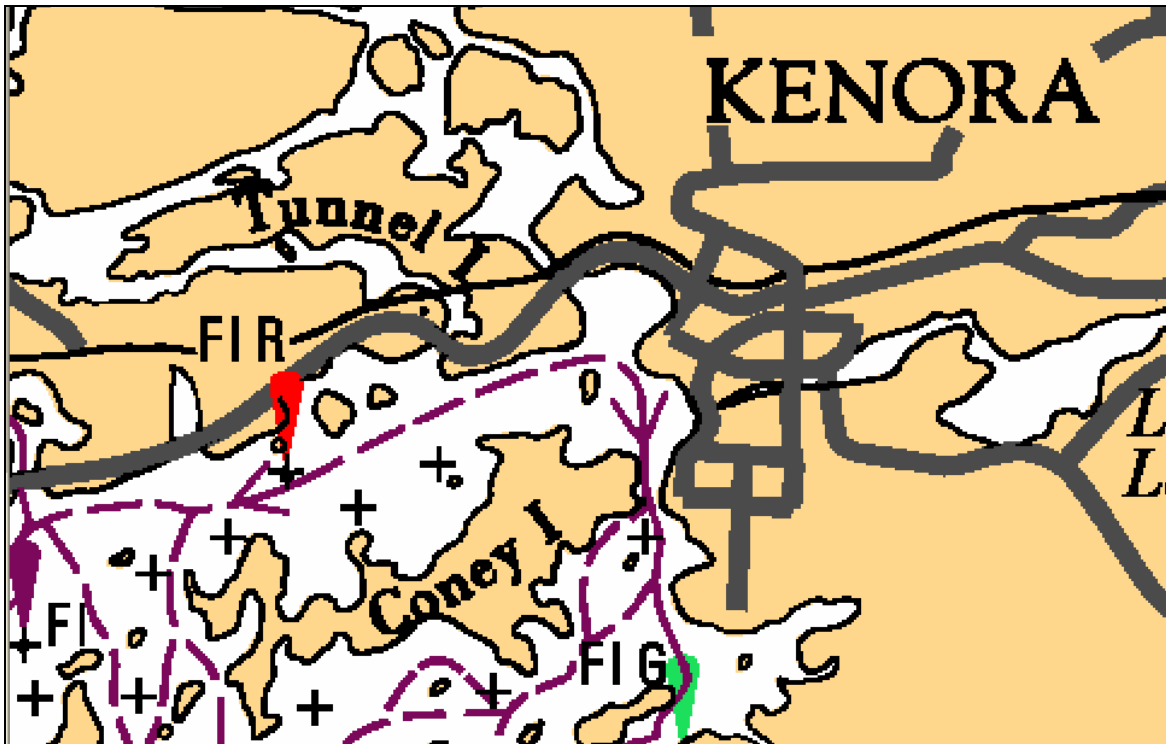
Tactics: If the park is open for public use and oiling may present a risk to humans or wildlife, exclusion boom should be used to close the mouth of Golf Course Bay to protect the park from oiling. Boom may be anchored on shore on either side.

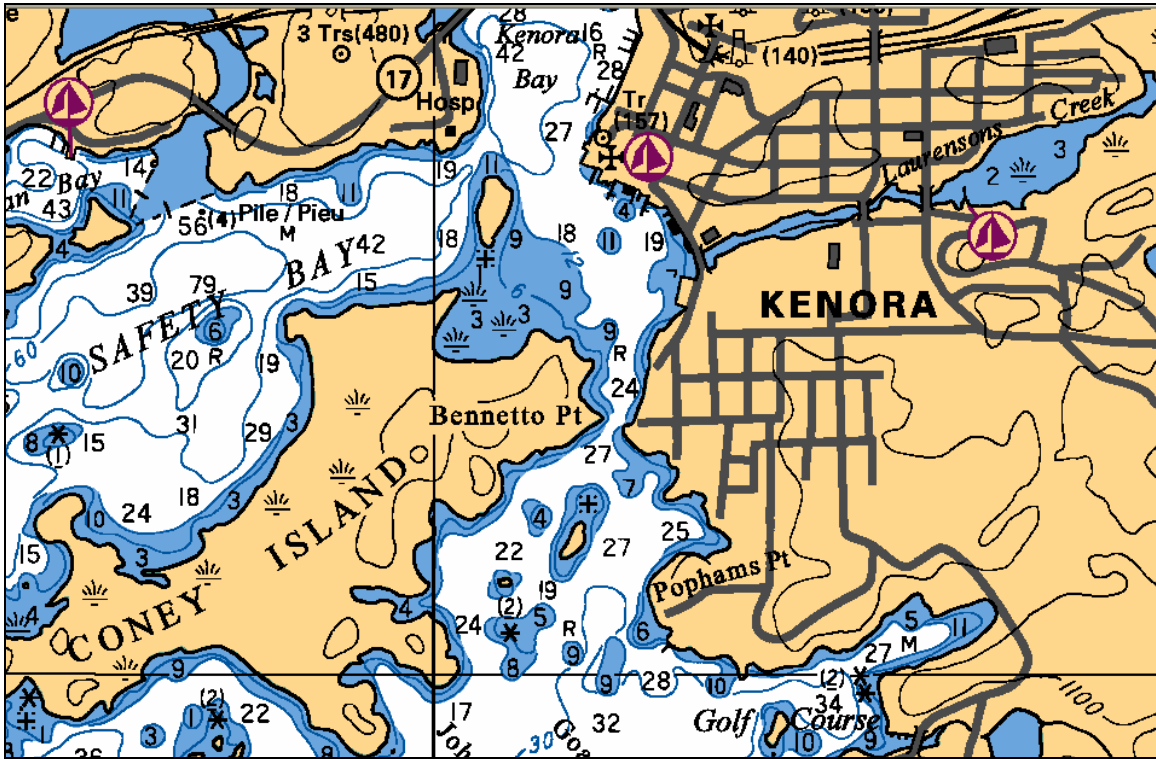
- Coney Island Beach & park – recreational beach

Objective: Protection

Strategy: Near-shore redirection away from beach area

Tactics: If the park is open for public use and oiling may present a risk to humans or wildlife, exclusion boom should be laid in Safety Bay, parallel to the shore along the beach area and anchored at both ends. From each end, a further section of boom should be laid between the parallel length and the shore, closing the box and isolating the beach area. The beach is sandy, and is approximately 200 metres in length.





Shoal Lake

Charts 6201, 6217-1

- City of Winnipeg potable water intake

An array of intakes which supply the City of Winnipeg with potable water is located in the western end of Shoal Lake. There is very little on-water transportation of fuel in Shoal Lake, but these intakes remain a priority nonetheless as an oil spill in proximity to them could affect the entire city.

Objective: Protection of potable water quality

Strategy: Exclusion of intake points

Tactics: Notify town officials of risk of contamination of potable water source, and obtain estimates of how much safe water is stored in the system and how long the town can subsist on stored water.

An assessment will be needed of the risk to water quality at the level of the intake. This will depend on the proximity of the spilled product, the type of



product, length of time since the spill, prevailing currents and winds, and the depth of water over each particular intake. Since there are a number of interconnected intakes, it may be possible to close only some of them and leave others open. From this information must be determined whether enough product has potentially been mixed into the water column to potentially contaminate the water being brought into the municipal distribution system.

If there is a potential threat, the best tactic may be to stop the intake of water from threatened intake points until flushing by wind and current return the water quality to its normal state. Water quality testing data would be very useful in informing this decision.

Alternatively, exclusion or containment boom may be employed to prevent product from entering areas where it might mix with the water column and adversely affect the intakes. As the shoreline in this area is generally rocky, a suitable sacrificial area may be selected as a collection point for diverted product. Remove product using sorbents.

Three Sisters Islands

Charts 6201, 6211-2

- American White Pelican habitat

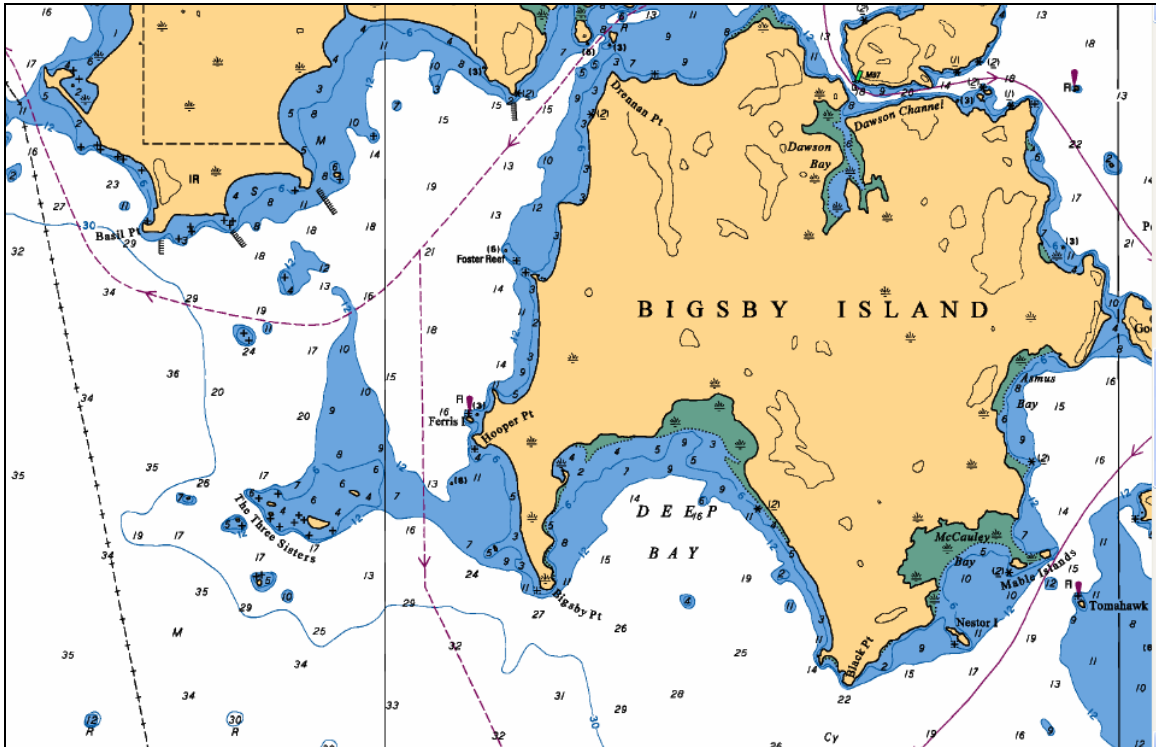
The endangered American White Pelican maintains nesting grounds on the Three Sisters Islands in the southern portion of the lake (southwest of Bigsby Island). These pelicans are migratory, arriving at Lake of the Woods in April or May for the breeding season in late spring, then spend the summer on the islands before migrating south in October to their wintering grounds. Their colonies are susceptible to disturbance during the breeding period – approximately 3 months after their arrival – and hazing may not be advisable during this time.

Objective: Protection of wildlife and habitat

Strategy: Exclusion

Tactics: Exclusion boom should be employed to protect beaches and shorelines important to pelican habitat. Use of sacrificial areas for collection is discouraged, but if absolutely necessary, a suitably rocky area should be selected. The Canadian Wildlife Service should be consulted before undertaking any hazing of the pelicans, because depending on the time of year at which the spill occurs – with regard to the breeding season – it may be dangerous to chase the birds from their nests.





Clearwater Bay, Echo Bay, Cul-de-sac Bay

Charts 6201, 6217-2

- Fish habitat

Clearwater Bay, Echo Bay and Cul-de-sac Bay, located just west of Kenora at the northern shore of Lake of the Woods, have been designated as a Restricted Area by the municipality. This is to protect sensitive fish habitat and to limit the pressures of cottage development, which is extensive in the area.

The First Nations communities in this area may also have both municipal and private water intakes in need of protection.

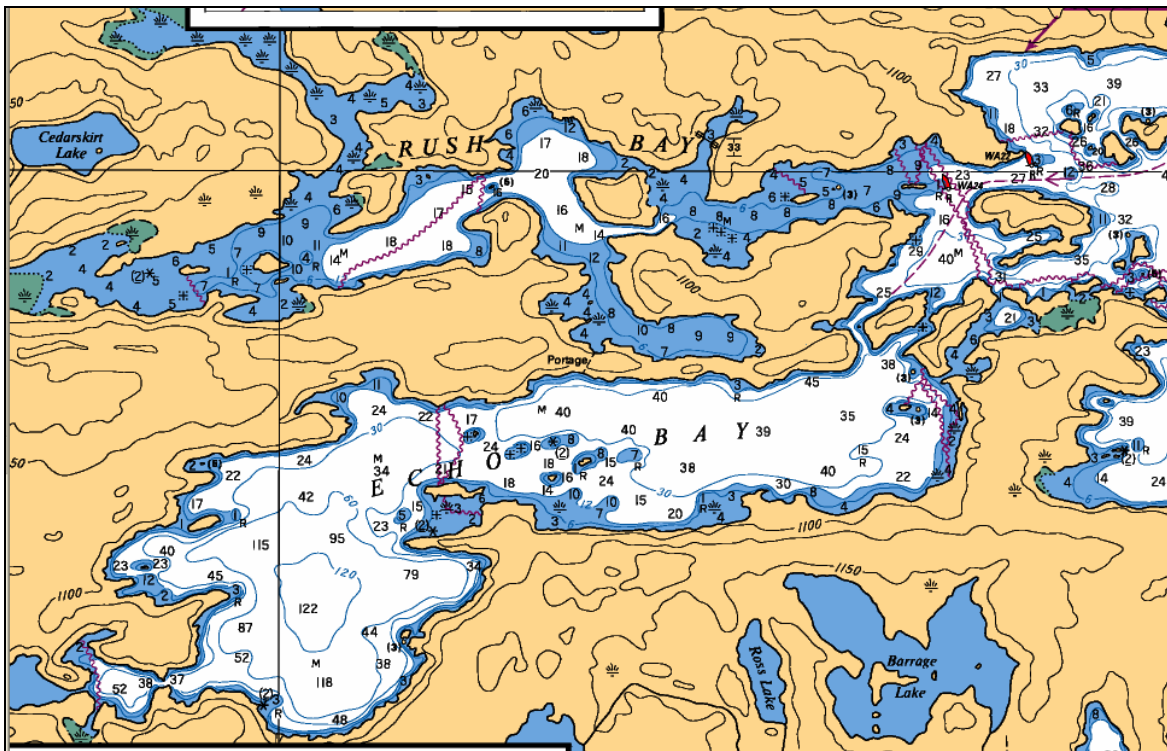


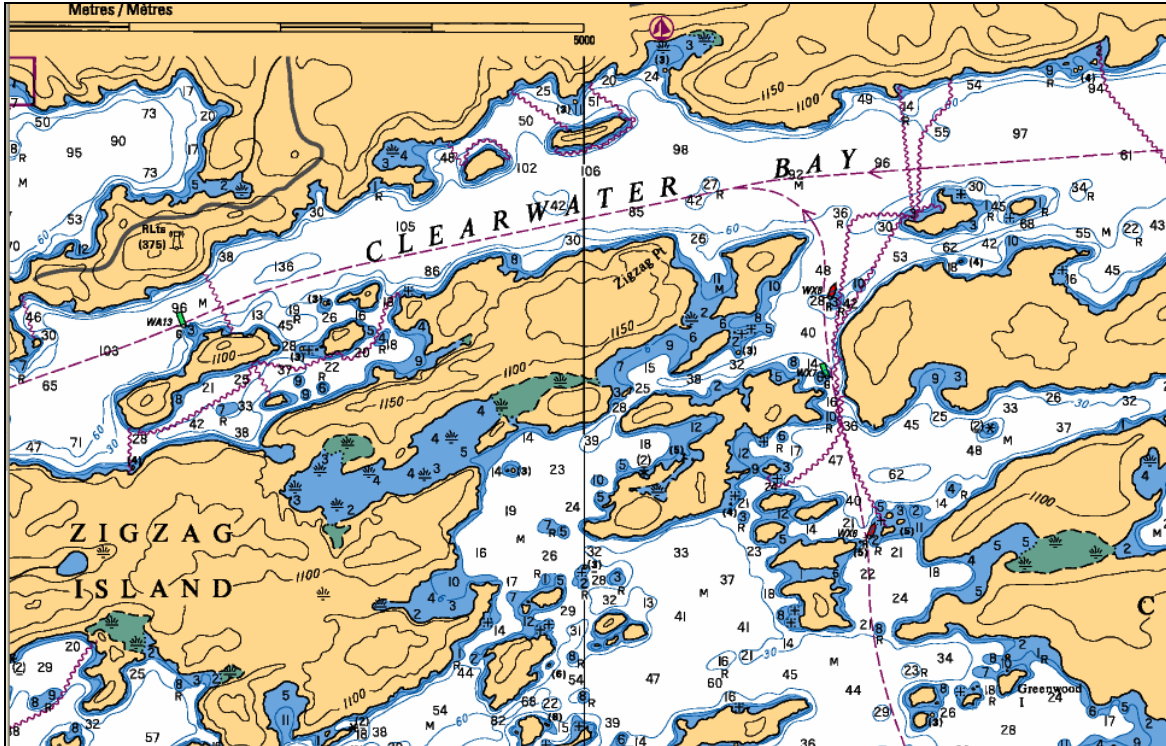
The specific locations and sensitivities of the fish habitat within the waters described are not known, as the data gathering process is still ongoing within the Ministry of Natural Resources. As a result, the tactics described may be of only the most general nature.

Objective: Protection of water quality

Strategy: Collection and removal

Tactics: Notify cottagers of risk to water intakes, and examine alternative means of providing them with drinking water. Employ boom and sorbents to protect vulnerable shorelines if necessary and if effective. Collect product if appropriate and remove using sorbents.





Whitefish Bay

Charts 6201, 6213

- fish spawning area

Whitefish Bay has the highest water quality of all regions of the Lake of the Woods. It is generally deep and rocky, making it an important spawning area for walleye, whitefish, and lake trout.

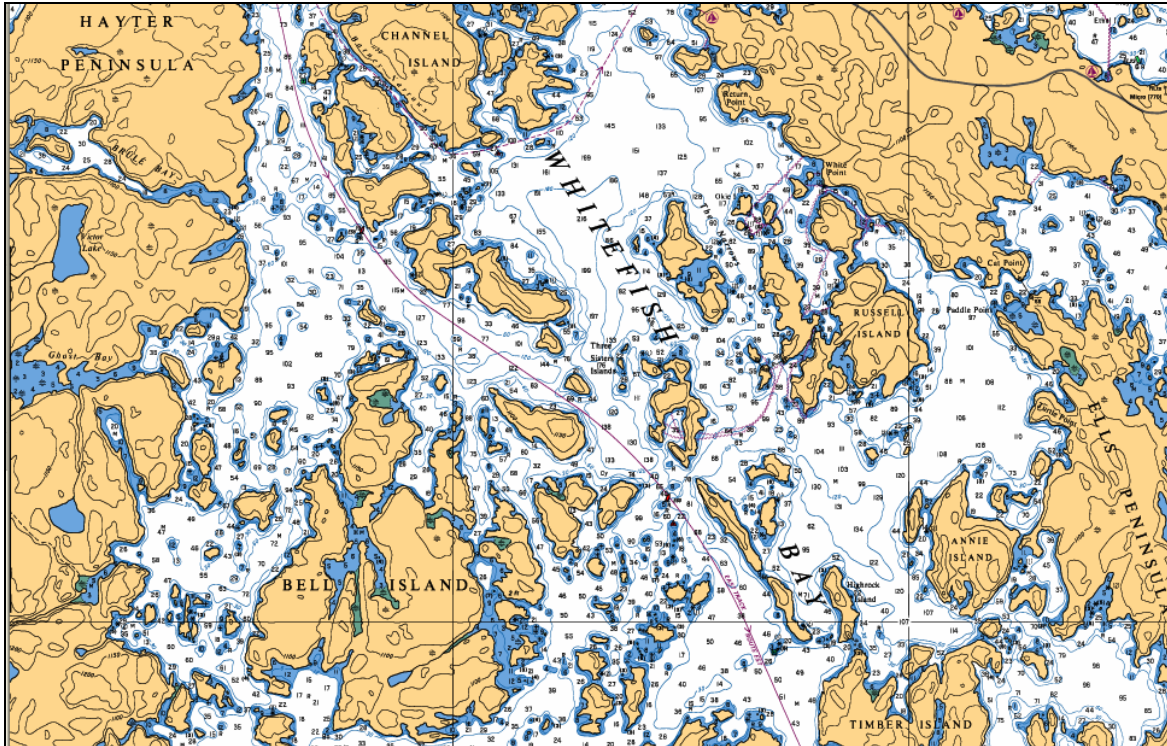
Whitefish Bay is more sparsely populated than the northern portions of the lake, so small private intakes should not cause much concern here. As with Clearwater Bay, above, First Nations communities may have intakes in need of protection. The town of Sioux Narrows' municipal supply is drawn from groundwater, so it is not a factor.

Strategy: Collection and removal

Tactics: Employ boom and sorbents to protect shorelines where possible. Shoreline is frequently of solid bedrock in this area, so sacrificial collection points



are an option if appropriate. Care must be taken not to collect product if doing so would risk making drinking water contamination worse. Any collected product should be removed with sorbents.



Sabaskong Bay

Charts 6201, 6214

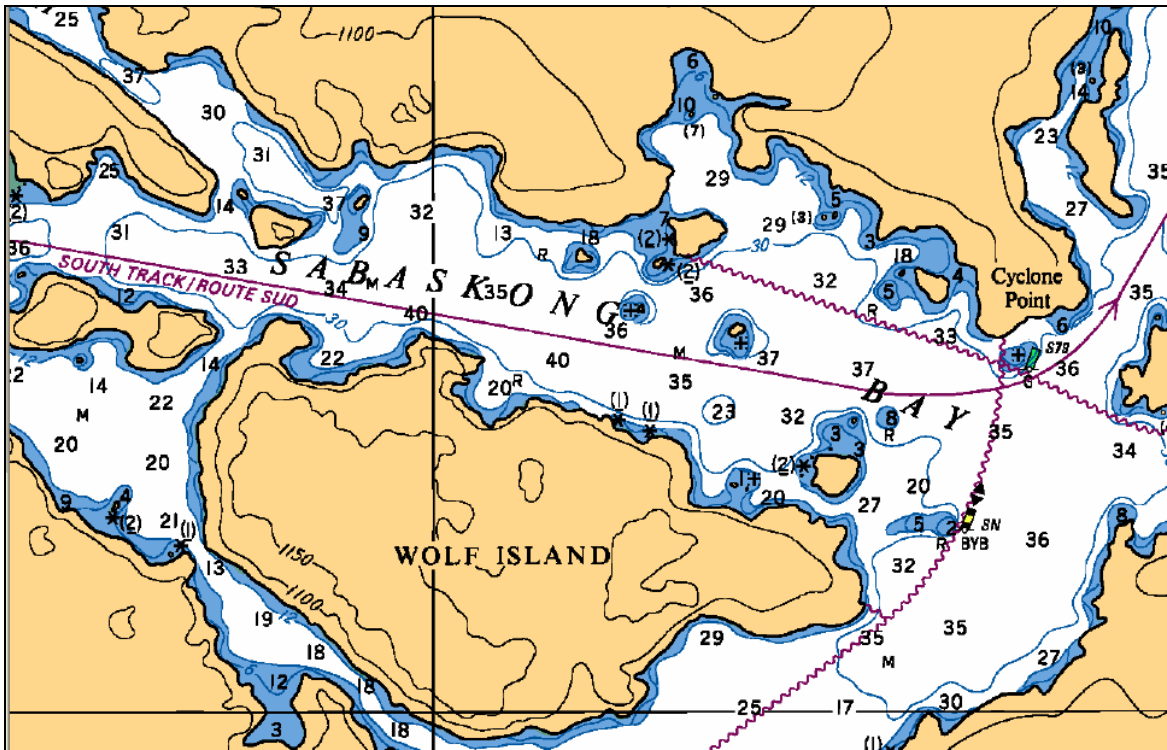
- fish spawning area

Sabaskong Bay, unlike Whitefish Bay, is shallow and largely covered by weeds. It is viewed as a nursery area for northern pike, muskellunge, large-mouth bass, and crappie. This bay is fairly shallow, so weed-beds will be of particular concern as spawning grounds.

Strategy: Collection and removal



Tactics: Employ boom and sorbents to protect shallow, weeded areas where possible. Collected product should be removed with sorbents.



Communications

In the Lake of the Woods area, cellular coverage is available, though satellite telephones may be required for use in the more remote regions of the Lake. Marine communications are conducted by VHF radio. Not all areas of the Lake may be reachable by VHF from all other areas, due to intervening islands and long distances.

Health and Safety

Normal seasonal precautions applicable to southern Canadian climate as appropriate (e.g. biting insects in spring/summer, exposure to sun)

Medical facilities



Lake of the Woods District Hospital in Kenora is a designated trauma facility with 104 beds. Sioux Narrows and Morson may have community health clinics.

