Fisheries and Oceans Canada

Pêches et Océans Canada

Corrected to 12/2021

ATL 107

Saint John River

Sailing Directions

Canada

Pictograph legend

 **Anchorage**

 **Current**

 **Radio calling-in point**

 **Wharf**

 **Caution**

 **Lifesaving station**

 **Marina**

 **Light**

 **Pilotage**

Report discrepancies between real-world observations and descriptions in the publication

Users of this publication are requested to forward information regarding newly discovered dangers, changes in aids to navigation, the existence of new shoals or channels, or other information that would be useful for the correction of nautical charts and publications affecting Canadian waters to: chsinfo@dfo-mpo.gc.ca.

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Record of Changes

As the CHS acquires new information, relevant changes are applied to Sailing Directions volumes in order to maintain safety of navigation. It is the responsibility of the mariner to maintain their digital Sailing Directions file by ensuring that the latest version is always downloaded. Visit charts.gc.ca to download the most recent version of this volume, with all current changes already incorporated.

The table below lists the changes that have been applied to this volume of Sailing Directions. This record of changes will be maintained for the current calendar year only

Chapter / Paragraph	Description of Change

TABLE OF CONTENTS

PREFACE

The Second Edition of *Sailing Directions, ATL 107 — Saint John River*, 2009, has been compiled from Canadian Government and other information sources. All hydrographic terms used in this booklet are in accordance with the meanings given in the *Hydrographic Dictionary* (Special Publication No. 32), published by the International Hydrographic Bureau.

General information for the Atlantic Coast is grouped within one booklet, *Sailing Directions, ATL 100 — General Information, Atlantic Coast*, 2007. It contains navigational information and a brief description of the main port facilities as well as geographic, oceanographic and atmospheric characteristics.

The detailed description of the geographical areas is given in a series of volumes and booklets. Their limits are printed on the back cover of the booklets. **The appropriate descriptive booklet(s) should be consulted in conjunction with the *ATL 100 — General Information* booklet**.

The photographs are by Fisheries and Oceans Canada, Bedford Institute of Oceanography, Dartmouth, Nova Scotia.

Canadian *Sailing Directions* expand charted details and provide important information of interest to navigation which may not necessarily be found on charts or in other marine publications. They are intended to be read in conjunction with the charts quoted in the text.

Remarks

Buoys are described in detail only where they have special navigational significance, or where the scale of the chart is too small to clearly show all the details.

Chart references, in *italics*, refer to the largest scale Canadian chart. Occasionally a smaller scale chart may be quoted where its use is more appropriate.

Tidal information relating to the vertical movements of the water is not given and the *Canadian Tide and Current Tables* should be consulted. However, abnormal changes in water level are noted.

Names have been taken from the most authoritative source. Where an obsolete name still appears on the chart or is of local usage, it is given in brackets following the official name.

Wreck information is included where drying or submerged wrecks are relatively permanent features and are of navigation or anchoring significance.

Units and terminology used in this booklet

Latitudes and **longitudes** given in brackets are approximate, and are intended to facilitate reference to the chart quoted.

Bearings and **directions** refer to True North (geographic) and are given in degrees from 000° clockwise to 359°. The bearings of conspicuous objects, ranges and light sectors are given from seaward. **Courses** always refer to the course to be made good.

Tidal streams and **currents** are described by the direction towards which they flow. The **ebb** stream is caused by a falling tide and the **flood** stream is caused by a rising tide. **Winds** are described by the direction from which they blow.

Distances, unless otherwise stated, are expressed in nautical miles. For practical purposes, a nautical mile is considered to be the length of one minute of arc, measured along the meridian, in the latitude of the position. The international nautical mile is equal to 1,852 m (6,076 ft).

Speeds are expressed in knots, which mean 1 nautical mile per hour.

Depths, unless otherwise stated, are referred to chart datum. As depths are liable to change, particularly those in dredged channels and alongside wharves, it is strongly recommended these be confirmed by the appropriate local authority.

Elevations and **vertical clearances** are given above Higher High Water, Large Tides. In non-tidal waters they are referred to chart datum.

Heights of objects, distinct from the elevations, refer to the heights of the structures above the ground. A statement, "a hill 18 m high", is occasionally used when there could be no confusion and in this case the reference will signify an elevation.

The *List of Lights, Buoys and Fog Signals* number is shown **in brackets** after the navigational aid (light, leading lights, buoy). The expression "seasonal" indicates that it is operational for a certain period during the year; mariners should consult the *List of Lights, Buoys and Fog Signals* to determine the period of operation. The expression "private" means that the navigational aid is privately maintained; it will not necessarily be mentioned in the *List of Lights, Buoys and Fog Signals* and its characteristics may change without issuance of a *Notice to Shipping*.

Time, unless otherwise stated, is expressed in local standard or daylight time. For the waters described in this booklet, local time is Atlantic Standard Time (AST Z+4).

Deadweight tonnage and **masses** are expressed in metric tonnes. The kilogram is used to describe relatively small masses.

Public wharf is a wharf that is available for public use, though certain fees may be charged by

local authorities. It may be shown as "Government wharf" or "Gov't whf" on older charts.

Conspicuous objects, natural or artificial, are those which stand out clearly from the background and are easily identifiable from a few miles offshore in normal visibility.

The expression "**small craft**" refers to pleasure craft and small vessels with shallow draught.

Diagrams are large scale cartographic representations of harbours, wharves, anchorages,or marinas.

Pictographs are symbols shown at the beginning of certain paragraphs to allow quick reference to information or to emphasize details. The Pictograph Legend is shown on the inside cover of this booklet.

References to other publications:

Canadian Hydrographic Service

- *Catalogue of Nautical Charts and Publications (Atlantic Coast)*
- *Canadian Tide and Current Tables*

Canadian Coast Guard

- *List of Lights, Buoys and Fog Signals*
- *Radio Aids to Marine Navigation (Atlantic, St. Lawrence, Great Lakes, Lake Winnipeg and Eastern Arctic)*
- *Annual Edition of Notices to Mariners*

ABBREVIATIONS

Units

°C	degree Celsius
cm	centimetre
fm	fathom
ft	foot
h	hour
ha	hectare
HP	horsepower
kHz	kilohertz
km	kilometre
kn	knot
kPa	kilopascal
m	metre
mb	millibar
min	minute
MHz	megahertz
mm	millimetre
t	metric tonne
°	degree (plane angle)
'	minute (plane angle)

Directions

N	north
NNE	north northeast
NE	northeast
ENE	east northeast
E	east
ESE	east southeast
SE	southeast
SSE	south southeast
S	south
SSW	south southwest
SW	southwest
WSW	west southwest
W	west
WNW	west northwest
NW	northwest
NNW	north northwest

Various

A.P.A.	Atlantic Pilotage Authority
CCG	Canadian Coast Guard
CHS	Canadian Hydrographic Service
DFO	Department of Fisheries and Oceans, Canada
DWT	deadweight tonnage
ETA	estimated time of arrival
ETD	estimated time of departure
HF	high frequency
HW	high water
LW	low water
M	million, mega
MCTS	Marine Communications and Traffic Services
NAD	North American Datum
No.	number
SAR	Search and Rescue
U.S.A.	United States of America
VHF	very high frequency
VTS	Vessel Traffic Services

General Information

1 It is believed that Basque, Breton and Norman fishermen had visited the shores of the Bay of Fundy as early as 1504, but as they left no record of their voyages, this is not known for certain.

2 When Samuel de Champlain first entered Saint John Harbour in 1604, his description and sketches became the first guide for others who would follow:

3 *"there is a fine bay which enters the country, at the bottom of which are three islands and a rock (Shag Rock). Two of these towards the west and the other (Partridge Island) is at the mouth of a river, one of the largest and deepest we have seen, which we named River St. John, because it was on that day (St. John the Baptist) that we arrived there...*

4 *The river is dangerous to enter if one does not take careful note of certain points and rocks on both sides. It is narrow at its entrance, then immediately enlarges; then, having turned a point it narrows once more and makes a kind of fall between two great cliffs, where the water rushes with so power that any wood thrown there is drawn under and seen no more. Awaiting, however, the (half) tide, one can pass this strait very easily, and then it enlarges again to the extent of a league in certain places, where there are three islands. We did not investigate it further, but, an Indian called Secoudon, Chief of the river, reported to us that it was beautiful, large and spacious, having abundant meadows and fine woods, such as oaks, beeches, butternuts and wild grapevines."*

5 Captain Donald F. Taylor, who had worked the Saint John River for many years in the days of the river steamboats, adds this description, as found in his book *The Early Steamboats of the St. John River*.

6 *"The varied scenery of the St. John River is one of its most compelling charms for the River traveller. After leaving Saint John, the rugged cliffs of the Narrows between Pokiok and Randolph suddenly change to the broad expanse of Grand Bay, and then on to the hilly country of Long Reach. The Grassy Island at Oak Point, formed by sedimentary deposit, is the lower end of an inland river delta. Many low lying islands, such as Spoon, Long, and Upper and Lower Musquash Islands extend for miles along the River past Fredericton. They receive their annual deposit of silt after the spring inundation, and usually supply a good crop of hay or grazing land for livestock."*

7 It has been tradition to make and pass along such observations, so that mariners will have an idea of what to

expect when sailing unfamiliar waters. This tradition has been fundamental in developing the style of Sailing Directions used today.

8 This booklet covers the Saint John River from its mouth at Saint John to Woodstock, including all navigable waters accessible from the river.

9 **Historical Background**. — The first known inhabitants of the Saint John River valley were the Malecite Indians. Due to the importance of water for transportation, the Malecites settled in places where two or more waterways joined. Unlike many other tribes in Canada, the Malecites remained, even though other people moved in and settled in the same area. This allowed for peaceful relations between the tribe and early settlers.

10 *Acadian Period*. — The second stage of development saw the arrival of the Acadians to the Saint John River valley. Although there had earlier been several explorations and some trading, the movement of the Acadians up the valley started in the latter part of the 17th and the first half of the 18th century. These French settlers were mainly farmers and traders who often settled in the same area as the Malecites.

11 In the 18th century, struggles between the French and English were common. These had little effect upon the inhabitants of the river basin until after 1750. Many Acadians expelled by the English came up the river to avoid the British along the coast. After the Treaty of Paris in 1763, the Acadians at the mouth of the river were gradually forced to move up the river. This eventually led to the establishment of the Acadian settlement in the river valley in northern New Brunswick.

12 *New England Period*. — Between the Acadian and Loyalist periods, settlers came from the New England states. In the Acadian period, large grants had been given to individuals to encourage settlement; now, many New Englanders formed their own companies and were granted large tracts of land. This period was short, and saw relatively few immigrants.

13 *Loyalist Period*. — The population of the basin, prior to the arrival of the Loyalists in 1783 was about 1,400 English and 400 Acadians. Farming was the primary occupation with some trade in furs, fish, lumber for masts, and other items.

14 The influx of twelve to fifteen thousand Loyalists changed the life patterns of the settlers. As well as rapidly enlarging the size of the settlement, the Loyalists brought with them many new skills and interests. There were among them judges, lawyers, doctors, ministers, teachers, fishermen, labourers, tradesmen, soldiers and slaves. Also, some of their members had been involved in the offices of colonial government. However, despite the availability of all these skills and interests, the conditions they found forced the vast majority of them to establish primarily as farmers. Their settlements were widely spread along the waterways on the best agricultural lands available. In some instances, this meant that earlier settlers, who were established on lands not granted to them by the British Crown, were relocated, and their lands granted to the Loyalists. The most notable of those relocated were the Acadians, who were granted new lands on the upper Saint John River south of the Madawaska River.

15 With this influx of settlers, the County of Sunbury was separated from Nova Scotia and became the province of New Brunswick in 1784. The capital was located at Fredericton in 1785.

16 *Period of Active Immigration*. — The first half of the 19th century was a period of rapid population growth. Growth was the result of a steady increase in the native population combined with the most active period of immigration from England, Scotland and especially Ireland.

17 By 1850, the major settlement of the basin was completed. Though immigrants would continue to arrive, natives as well as new arrivals began migrating out of the province. By the time New Brunswick entered Confederation in 1867, the dispersed settlement pattern along the water, begun by the Malecites, had spread out along the entire Saint John River valley.

18 In pre-Confederation days, an economic system based upon the land evolved and prospered with the shipping and timber trade of the mid-nineteenth century. During this period, the Maritime Provinces experienced a rate of population growth which has not been equalled since.

19 **Saint John River**. — From its source in Little Saint John Lake on the Québec-Maine border to its mouth at Saint John, the Saint John River drains an area of some 55,167 km^2 through a main stem 673 km in length. It is an international river, with 51 per cent of its drainage area in New Brunswick, 36 per cent in Maine, and 13 per cent in Québec. It is the 37th longest river in Canada, and the largest in the Maritime Provinces, and forms the international boundary between Canada and the United States for 161 km.

20 For its first 210 km or so, the river flows in a NE direction. At Edmundston it turns through a right angle to flow SE to the Bay of Fundy. The town of Woodstock lies close to the halfway point on the main stem. The main tributaries of the river lie upstream of Woodstock.

21 The natural vegetation of the area is forest, which covers about 80 per cent of the river basin. Most present-day forest cover consists of secondary or tertiary growth with coniferous species, about two thirds of the total, comprising spruce, balsam, fir, pine, cedar, and larch. Deciduous species include birch, maple, poplar, oak and elm, with a variety of others occurring in small numbers only. The remainder of the vegetative cover consists of cultivated land, located mainly in the river valleys, localized areas of muskeg where drainage is poor, and scrub land where soil is too thin or the climate too extreme to support tree growth.

22 **New Brunswick**. — The province of New Brunswick comprises an area of 73,436 km^2 of which 1,344 km^2 are fresh water. Its greatest width from east to west is about 310 km, and from north to south approximately 370 km. The state of Maine, U.S.A., bounds it on the west, the province of Québec on the north, the Bay of Fundy and Nova Scotia on the south, and the Northumberland Strait and the Gulf of St. Lawrence on the east. New Brunswick had a population of 729,907 in 2006. It is a bilingual province; government, social and educational services are provided in both official languages.

23 The surface of New Brunswick is mostly undulating. The great North-Western Plateau, with an elevation of 305 to 460 m, is deeply dissected by river valleys. The Central Highlands generally rise to an elevation of 610 m; Mount Carleton, however, has an elevation of 820 m.

24 The climate of the province, although typically continental rather than maritime, also reflects the moderating influence of the sea. Seasons are slightly delayed and temperatures in the interior are more extreme than on the coasts.

25 The Saint John River valley and the SE part of the province are the agricultural areas, the former specializing in potato and large mixed produce farms and the latter in livestock and dairy production. Forestry, the province's largest industry, as well fishing and mining contribute substantially to the economy.

26 **National Holidays** observed in Canada are: New Year's Day, Good Friday, Easter Monday, Victoria Day (the Monday preceding May 25), Canada Day (July 1), Labour Day (the first Monday in September), Thanksgiving Day (the second Monday in October), Remembrance Day (November 11), Christmas Day, and Boxing Day. When New Year's Day, Canada Day, Remembrance Day, Christmas Day or Boxing Day occur on a Saturday or Sunday, they will be observed on the following Monday or as designated. *New Brunswick Day*, a provincial holiday, is observed on the first Monday in August.

27 In some communities, retail stores are closed one-half day during the week. When known, this will be indicated in the text.

28 **Currency, Weights and Measures**. — The denominations of money in the currency of Canada are dollars and cents; the cent is one-hundredth of a dollar. Coins of the denomination of one cent, five cents, ten cents, twenty-five cents, fifty cents, and one and two dollars are in use. The Bank of Canada issues notes of $5, $10, $20, $50, $100, and $1,000.

29 A metric system of weights and measures is in use in Canada. In some instances, Imperial weights and measures are still in use.

30 **Standard and Daylight Saving Times**. — New Brunswick keeps *Atlantic Standard Time* which is 4 hours slow on Universal Time (Greenwich Mean Time), that is, 4 hours subtracted from UT to give standard time. *Atlantic Daylight Saving Time* is normally kept in the province from the second Sunday in March to the first Sunday in November. Atlantic Daylight Saving Time is one hour in advance of standard time and 3 hours slow on Universal Time.

31 **Transportation Systems**. — Most localities in this guide are serviced by paved roads that connect with the highway system for travel to other provinces and the United States. From Saint John, a daily car and passenger ferry operates to Digby, Nova Scotia.

32 Transportation between Saint John and Fredericton is available by road and by air.

Metric Conversion Table

Temperature		Length		Mass (weight)	
°C	°F	1 cm	0.394 in	1 g	0.035 oz
		1 m	39.37 in	454 g	1 lb
0	32		3.281 ft	1 kg	2.204 lb
5	41		1.094 yd	1 t	2 204 lb
10	50	1 km	0.621 mile		
15	59	1.609 km	1 mile	**Volume**	
20	68	1.852 km	1 nautical		
25	77			1 ml	0.035 oz
30	86	**Atmospheric pressure**		1 L	35 oz
35	95			4.546 L	1 gal (UK)
		100 kPa	29.637 in mercury	3.785 L	1 gal (US)
				1.2 gal (UK)	1 gal (US)

33 A bus system in New Brunswick serves Fredericton, Oromocto, Saint John and other localities with connections to other provinces and major locations in New England.

34 Air services link Saint John and Fredericton airports with other cities in eastern North America.

35 Schedules of services are available at most hotels, tourist bureaus and travel agents. For full details consult individual travel companies.

36 **Customs Clearance**. — When a private pleasure boat enters Canada, the boat master must report to the *Canada Border Services Agency (CBSA)* by telephone. Private boaters must dock at an approved marine telephone reporting site in Canada and call the telephone reporting centre (TRC) immediately on arrival, before proceeding inland or to any other Canadian destination, unless other arrangements have been made with a CBSA office.

37 The boat master has to contact the TRC immediately upon docking in Canada by calling 1-888-226-7277.

38 The boat master must provide the TRC with the following information:

- Location of docking site;
- Vessel registration number;
- Final destination in Canada;
- Full name, date of birth and citizenship of all persons on board;
- Purpose of the trip and length of stay in Canada (for non-residents);
- Length of absence from Canada (for Canadian residents); and
- A customs declaration for each person on board.

Marine Telephone Reporting Sites

Saint John Harbour
- Market Slip

Saint John River
- Saint John Powerboat Club
- Royal Kennebecasis Yacht Club
- Saint John Marina

Southwestern New Brunswick
- Campobello Island, Deer Island
- Grand Manan Island
- St. Andrews
  - (Town Wharf)
  - (Bayside Marine Terminal)

Charts and Publications

39 **Charts and Publications** are available from authorized *Canadian Hydrographic Service Chart Dealers*.

40 The *Catalogue of Nautical Charts and Related Publications — Atlantic Coast* shows the coverage of Canadian charts and lists nautical publications and authorized dealers from which they may be obtained.

41 **To obtain dealer location information: www.charts.gc.ca**.

42 **Reliance on a chart**. — The chart represents general conditions at the time of survey and changes that have been reported to the Canadian Hydrographic Service to the last edition date shown on the chart. Areas where sand or mud prevail, especially in the entrances and approaches to rivers and bays, are subject to continual change, therefore, caution should be exercised in navigating these areas.

43 In regions where reefs and rocks abound, it is always possible that surveys have failed to find every obstruction. When navigating such waters, customary routes and channels should be followed and waters avoided where irregular and sudden changes in depth indicate conditions associated with reefs and pinnacle rocks.

44 A chart drawn from an old survey with few soundings may have had later soundings added to it, thus masking the inadequacy of the original survey. On new metric charts based on recent surveys, additional depth contours will be shown with fewer soundings. Some metric charts contain information from old charts converted to metres, so it is important to assess reliability from the source classification diagram.

45 The largest scale chart of an area with the exception of those charts specifically designed for the use of pleasure craft should always be used for navigation.

46 Some of the minor passages of the Saint John River have not been thoroughly surveyed. Wherever a broad and clear channel exists, it would be unwise to use, without real necessity, a channel with little or no soundings even if there is an apparent saving in time and distance.

47 *Notices to Mariners* are published monthly and contain corrections to be made to charts, Sailing Directions, and other marine publications. They announce the issue of new charts and the withdrawal of old ones, the availability of new editions of the various marine publications and the issue of new regulations; notices relating to marine safety are also included. Published by the Canadian Coast Guard, they are issued free of charge in English or French on a subscription basis and from the Canadian Coast Guard Website. They may only be obtained from the:

Notices to Mariners
Canadian Coast Guard
200 Kent Street, Station 5N186
Ottawa, Ontario, K1A 0E6
Website: www.notmar.gc.ca

48 Reporting dangers to navigation or discrepancies on charts and publications should be done by using the *Marine Information Report and Suggestion Sheet* found in the back pages of these monthly editions.

49 A way to help identify islands and land features along the Saint John River is by using topographic **contour lines**, which are drawn through points of equal land elevation.

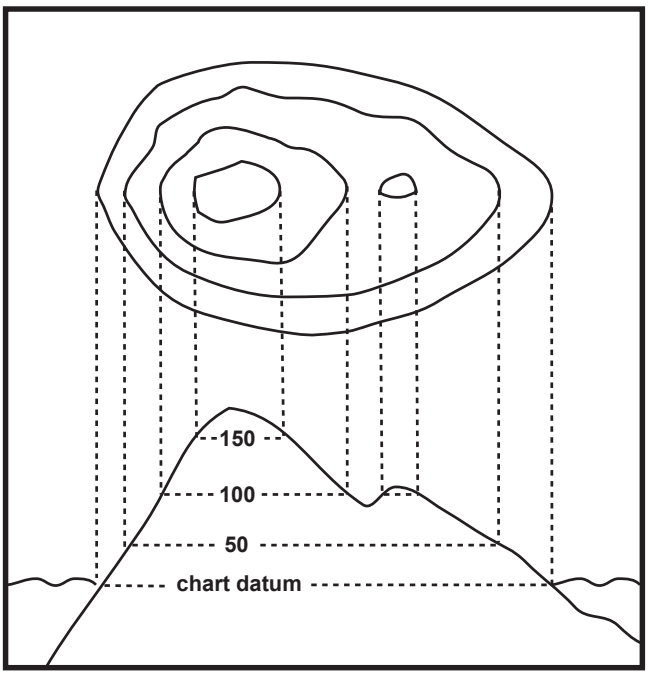
50 The *contour interval* is the difference in height or depth between contour lines. Where topographic contours are close together, they represent a steep slope, and where they are far apart, they represent a gentle slope. Many islands and peninsulas show no topographic contours; these areas are low, flat and featureless, and cannot be easily distinguished from surrounding areas.

51 Depth contours are used to indicate areas of equal depth below chart datum. Where depth contours are close together, they represent a steep sloping river bottom, and these areas are useless for anchorage.

52 **Symbols and Abbreviations** used on Canadian charts are shown with their meanings in the Canadian Hydrographic Service booklet *Chart 1*.

53 *Canadian Tide and Current Tables* list the predicted times and heights of high and low waters associated with the horizontal movement of the tide. These are necessary to predict the time of slack water at the Reversing Falls near the mouth of the Saint John River.

CONTOUR LINES



54 *Safe Boating Guide* is also issued free of charge by *The Office of Boating Safety*. It describes and illustrates the navigation lights required by small craft, the Canadian aids to navigation system, and the basic steering and sailing rules. It also contains advice and information on search and rescue, safety equipment and practices.

Water Levels

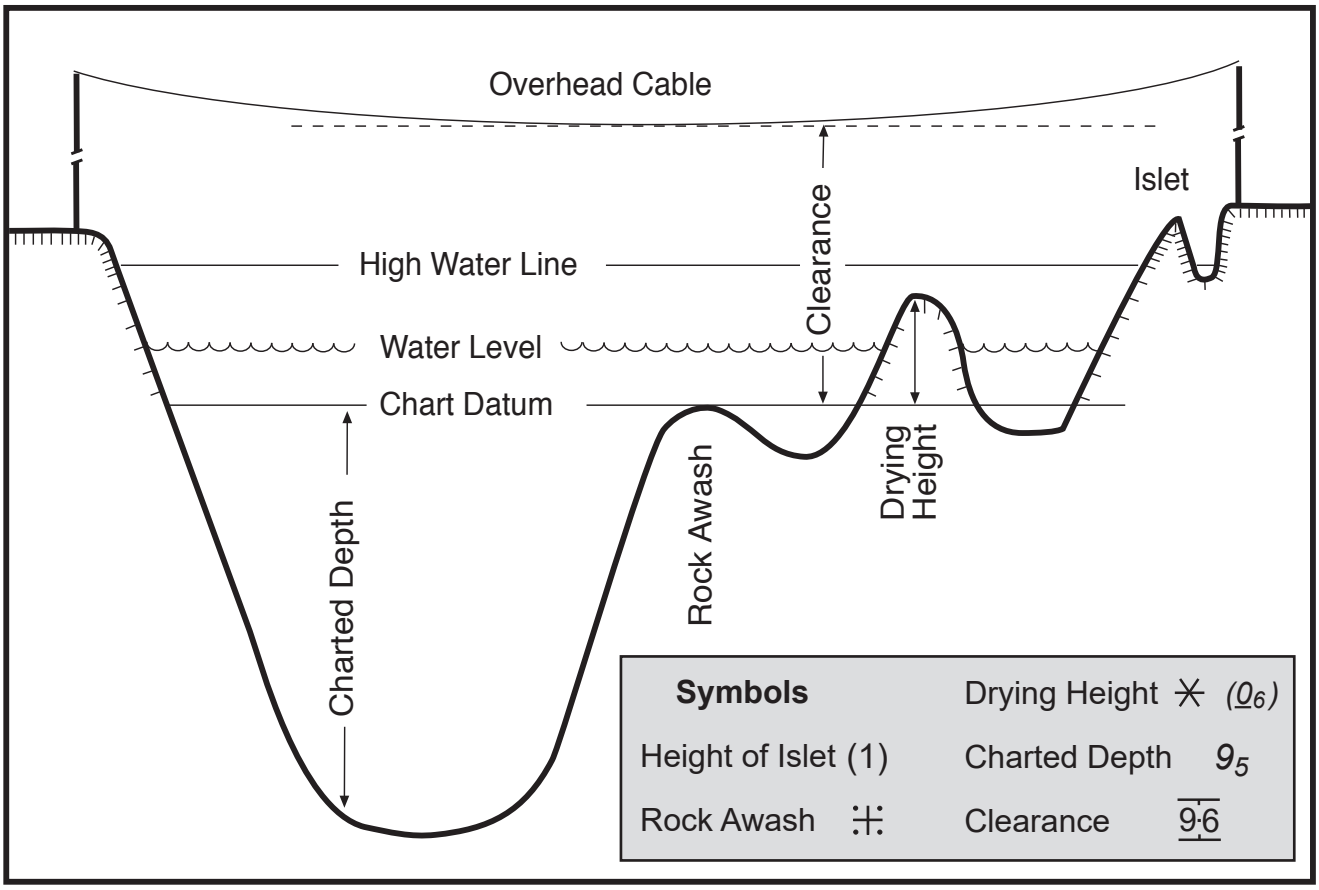
55 **Chart Datum**. — Depths shown on a chart are referenced to *chart datum*, a horizontal plane so chosen that the water surface will seldom fall below it. As an inland waterway, chart datum along the Saint John River is referred to a height or elevation above Geodetic Survey of Canada Datum (GD). Below the Reversing Falls, in the tidal waters of Saint John Harbour and the Bay of Fundy, chart datum is the plane of Lower Low Water Large Tides. This is below Geodetic Datum, which is the usual case for coastal waters, and is the approximate plane of the lowest predicted tide over an extended period. Chart datum varies along the Saint John River, sloping upstream to Fredericton. At Indiantown, just above the Reversing Falls, chart datum is 0.4 m above Geodetic Datum; chart datum of other locations are as tabled:

Beulah Camp (Browns Flat)	0.7 m above GD
Hatfield Point (Belleisle Bay)	0.7 m above GD
Evandale	0.7 m above GD
Gagetown	0.7 m above GD
Maugerville	0.8 m above GD
Fredericton	0.9 m above GD
Cambridge Narrows	0.7 m above GD
Newcastle Creek	0.8 m above GD
Mactaquac Headpond	38.1 m above GD

56 **Clearances**. — All clearances and elevations shown on Saint John River charts are measured above chart datum. Small craft operators should note that in tidal waters, clearances, heights and elevations are shown as above a high water datum.

57 The natural banks along the Saint John River form the shoreline as charted. In many areas the banks are lined with trees and heavy vegetation, which during high water levels are completely flooded. The contour formed by the shoreline is the *high water line*. Heights indicated on the charts apply to features projecting above the shoreline and drying height refers to a feature rising between chart datum and the high water line. Awash refers to a feature at the same elevation as chart datum.

58 The water level of the Saint John River fluctuates with variations of supply and discharge. These are associated



with meteorological conditions, the tidal cycle and to some extent, the operation of the hydroelectric generating plant at the Mactaquac dam above Fredericton.

59 **Charted clearances under bridges and overhead cables above chart datum will vary with fluctuating water levels. The actual clearance encountered will be the charted clearance less the height of the water level above chart datum.**

60 The **freshet**, caused by the runoff of melting snow from the river basin, is the major factor causing changes to the water level of the river. The highest monthly mean water level at Oak Point occurs in May, with a height of almost 3.6 m above chart datum; at Fredericton, also in May, this approaches 4.8 m. The lowest monthly mean water levels during the navigation season occur in the months of August and September, where they closely approach chart datum.

61 **Wind set-up**. — If a wind blows over a lake from the same direction for a prolonged period, the water level at the downwind end of the lake increases. The difference in height between two ends of a lake is related to its length, shape and depth, and the duration and speed of the wind. The greatest change occurs when a strong wind blows over a long, narrow and shallow lake for a long time.

62 A **tidal cycle**, though not large, exists along the river system. The average range of tide at Indiantown is 0.6 m, which diminishes to 0.3 m at Hampstead, and to near zero at Oromocto. Above Oromocto, a tidal cycle does exist, but due to waters released from the Mactaquac dam, it cannot be discerned.

63 **Mactaquac dam**. — The operation of the hydroelectric plant at Mactaquac has its greatest effect on water levels immediately below the dam. During any one day, the fluctuation may vary by as much as 1.5 m. Further downstream at Fredericton, this variation decreases to only 0.6 m, while at Jemseg, at the entrance to Grand Lake, the effect is almost negligible.

64 **Water level information**. — The Water Survey of Canada, Department of the Environment, Fredericton, maintains water level gauges along the Saint John River system. Real-time water level information (real-time hydrometric data) from these gauges is available on the Environment Canada website. The water level gauges are referenced to Geodetic Datum. A height of 1.4 m above GD is 0.6 m above chart datum at Maugerville.

65 **Hydrographs** are printed on the covers of the charts to Fredericton and provide the average heights of the river above chart datum over extended periods.

Navigation Information

66 **Commercial traffic**. — The waters of the Saint John River system are used by ferries, research vessels, and in some places passenger tour boats. Small craft operators are reminded of Collision Regulations, Rule 9 (b): "*A vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway*".

67 **Cable ferries** are guided by cables fastened to shore. The cables are suspended during crossings and drop to the bottom when the ferries are docked. Boaters are advised to exercise **caution** when approaching, and to never pass ahead as the towing tension brings the cables close to the surface. All cable ferries on the Saint John River system monitor VHF Channel 16 (156.8 MHz).

68 **Submarine cables** carrying electric power and telephone communications cross the river and adjacent waters. Their locations are marked on the charts and should be avoided when anchoring. *If an anchor has picked up or become attached to a cable, no attempt should be made to free it, in order to avoid breaking the cable. When this happens, cut and abandon the anchor cable to prevent the risk of electrocution.*

69 **Commercial fishing**. — The Shad and Gaspereau fishery takes place in the spring until the end of June. Nets extend from the shore as far as 60 m. Nets are also used from mid September. The nets are usually visible during the day but show no night marks.

70 **Driftwood** is always present and operators of small vessels are advised to exercise extreme caution at night.

71 **Moored deadheads**. — Mooring spars may be encountered along the edges of all the waterways. Where they are known to exist reference is made in the text. These spars float on end with the upper tip breaking at the surface. During the freshet they are almost entirely submerged. When on passage, boats should stay well out into the channels.

72 **Marine Radio**. — The Canadian Coast Guard has radio facilities near Saint John that provides a safety and public correspondence service through which marine telephone calls or messages may be placed. Details of Coast Guard Radio Stations and their services are listed in *Radio Aids to Marine Navigation*.

73 Good VHF radio coverage is reported for the Saint John River system as far as Fredericton, including Belleisle Bay, Washademoak Lake and Grand Lake.

CABLE FERRIES AT GONDOLA POINT (2006)

74 **Search and Rescue (SAR)**. — In eastern Canada, **Search and Rescue (SAR)** operations are conducted from the **Joint Rescue Coordination Centre** at Halifax **(JRCC Halifax)**. The Canadian Forces and the Canadian Coast Guard maintain a continuous watch at JRCC Halifax with all agencies involved in Search and Rescue operations. JRCC Halifax has direct communication with the United States Rescue Centres in Boston and Norfolk, and functions with these centres to provide Search and Rescue coverage to the entire eastern seaboard of North America.

75 All distress situations and requests for assistance should be directed to JRCC Halifax via the nearest Coast Guard Radio Station, primarily on VHF Channel 16 (156.8 MHz), Vessel Traffic Services Centre, by dialing 1-800-565-1582 (No charge) or "O" on any telephone and asking for "search and rescue".

76 *In emergency situations,* ***cellular phone*** *users will have, as a secondary means of requesting assistance, access to the nearest Coast Guard Radio Station by keying* ****16****.*

77 **Inshore Rescue Unit**. — The Canadian Coast Guard operates a rescue unit near Westfield Beach from the beginning of June until Labour Day. It responds to SAR incidents in an area between Gondola Point and Oak Point, with a 5.8 m rescue craft that is capable of assisting most pleasure craft. The unit is manned for 12 hours daily, until 2200 in the early part of the season, and until 2100 from August onwards.

78 **Canadian Coast Guard Auxiliary** is a volunteer organization of small craft owners in association with the Coast Guard to assist RCC Halifax in rescue efforts and to help promote boating safety. Members display a Coast Guard pennant from their vessels.

79 **Sail Plan**. — All small craft operators, including those making day trips, are encouraged to file a Sail Plan with a responsible person. This person should be instructed to call the Joint Rescue Coordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC) if the vessel becomes overdue. In circumstances where it is not possible to file a Sail Plan with a responsible person, a Sail Plan may be filed by telephone, radio or in person, with any Coast Guard Marine Communications and Traffic Services (MCTS) Centre. While at sea, masters/operators who have filed a sail plan with an MCTS Centre are encouraged to file a daily position report during long trips. Upon your return, be sure to close (or deactivate) the sail plan you filed earlier. Forgetting to do so can result in an unwarranted search for you. Participation in this program is voluntary.

Regulations

80 **Criminal Code of Canada**. — *"Every one commits an offence who operates a vessel or any water skis, surfboard, water sled or other towed object on or over any of the internal waters of Canada or the territorial sea of Canada, in a manner that is dangerous to the public, having regard to all the circumstances, including the nature and condition of those waters or sea and the use that at the time is or might reasonably be expected to be made of those waters or sea. Every one who commits an offence is guilty of an indictable offence and liable to imprisonment."*

81 **Small Vessel Regulations** relate to the various safety aspects of small craft operation including the safety equipment to be carried. A summary is contained in the *Safe Boating Guide*.

82 **Licensing of Vessels**. — All Canadian vessels transiting the waterway by sail or mechanical means, must be licensed under the *Small Vessel Regulations* or registered in accordance with the Canada Shipping Act. Vessels from other countries must be licensed and marked according to the laws of their home country.

83 **Collision Regulations** apply to the waters described in this publication. Brief extracts are provided in the *Safe Boating Guide*. Small craft operators should note that rule 40 of the regulations states *"a vessel that is less than 20 metres in length or is constructed primarily of non-metallic materials shall be equipped with a radar reflector or other means to enable the vessel's detection by other vessels navigating by radar"*.

84 **Aids to Navigation Protection**. — Under Canada Shipping Act (section 129), persons in charge of vessels that accidentally damage or move an aid to navigation (buoy, beacon, etc.), must report the fact to:

Regional Co-Ordinator, Operations
Regional Operation Centre
Canadian Coast Guard
P.O. Box 1000
Dartmouth, Nova Scotia, B2Y 3Z8
no charge dial 1-800-565-1633

85 A message may also be transmitted through any Coast Guard Marine Communications and Traffic Services (MCTS) Centre.

86 Failure to do so, or to deliberately damage or move an aid, is an offence.

87 **Pollution Regulations**. — The provisions of the *Regulations for the Prevention of Pollution from ships and for Dangerous Chemicals* which are under the *Canada Shipping Act*, expressly forbid the discharge from ships of oil, oily mixtures, garbage or substances listed in the regulations as pollutants into Canadian waters or fishing zones. Garbage containers are located on most wharves along the river.

88 The province of New Brunswick has adopted a deposit system on most beverage containers for the purpose of encouraging the use of refillable containers and the recycling of non-refillable containers. Containers can be returned to "**Redemption Centres**" where a refund of the deposit can be obtained. Certain retail stores will also accept containers for refund.

89 **Fishing Licenses**. — Residents of New Brunswick are required to have a license to fish Atlantic salmon. Non-residents are required to have a license to fish in New Brunswick and are required to obtain the services of a licensed guide to fish salmon. There are four classes of non-resident licenses, which are detailed in the "Summary of the Federal and Provincial Fishery Laws pertaining to Angling, New Brunswick", obtainable from any Provincial Visitor Information Centre.

90 The following fish are also found in the river: trout, striped bass, chain pickerel, yellow perch, black bass, lamprey, American eel, alewives (gaspereau), suckers, shad, white perch, sunfish and sturgeon.

91 **Game Licenses**. — Licenses are required for both residents and non-residents to hunt deer, moose, bear, rabbit, bobcat, fox, raccoon, skunk, porcupine, grouse, ducks, geese, woodcock, crow, and cormorant. There are various classes of license, which are detailed in the "Summary of the Game Laws of New Brunswick" obtainable from any Provincial Visitor Information Centre.

Buoyage

92 A combined lateral and cardinal system of **buoyage** is used in Canadian waters. The shape and/or colour of the buoy and the colour and flash characteristic of the light indicate the function of the buoy. Radar reflectors are fitted on many buoys. Mariners are required to use the proper navigational charts with these systems.

93 Buoys should be regarded as aids to navigation and not as infallible navigation marks. The position of any buoy may not be as charted due to storms, ice or collisions. Shoals, reefs or ledges may also cause a buoy to be easily displaced. Vessels should always be navigated by bearings or angles on fixed shore objects rather than complete reliance on buoys.

94 In some instances where a buoy is established close to a hazard or other charted feature, the buoy symbol may be slightly offset on the chart so that the existing symbol or hazard is not overprinted.

95 The **lateral system** of buoyage indicates the course of a navigable waterway. For lateral buoys, *System B* of the IALA (International Association of Lighthouse Authorities) Maritime Buoyage System is used in Canadian waters.

96 The sides of the waterway are indicated by buoys of a defined shape, colour or light characteristic in relation to the upstream direction. This upstream direction is the direction taken by a vessel when proceeding from seaward, up a river, into a harbour or with the flood tidal stream. Along the Saint John River, the upstream direction is shown on the charts with arrowheads on the solid red line indicating the recommended passage.

97 There are five types of buoys in the lateral system: port hand, starboard hand, bifurcation, fairway and isolated danger.

98 The **cardinal system** of buoyage indicates the relative position of an obstruction on the compass scale, with buoys of defined shape, colour or light characteristic.

99 There are four cardinal buoys, one for each cardinal point on the compass. When using cardinal buoys, keep to the named side of the buoy (i.e. to the north of the north buoy) and consult the chart for details of the danger. Cardinal buoys have yellow and black horizontal bands and may be lighted buoys or spar buoys. When lighted, the lights are white, and if reflective material is used, it is white. All cardinal buoys are surmounted with topmarks consisting of two black cones.

100 **Special purpose buoys** are used in Canadian waters which do not have lateral or cardinal significance. They may be a variety of shapes of lighted and unlighted buoys. They may display yellow reflective material. Except for the Scientific Buoy, all special purpose buoys may display a yellow flashing light.

101 **Buoy numbering**. — Only starboard and port hand buoys are numbered. Starboard hand buoys are even numbered, port hand buoys are odd numbered. Numbers increase in the upstream direction and are kept in approximate sequence on both sides of a channel by omitting numbers where required. Where numbers appear, they are usually preceded by a letter or letters to facilitate identification. Numbers are white or reflective silver. Other buoys may be identified by letters or names.

102 **Daybeacons** are sometimes used to mark channel entrances, approaches and bridges. The hand of the daybeacon, port or starboard, is determined in the same manner as that for buoys, and they will indicate the channel or the preferred channel.

103 More information on aids to navigation is contained in the booklet *The Canadian Aids to Navigation System*, available from chart dealers and all Canadian Coast Guard offices.

Natural Conditions

104 **Weather Information**. — Weatheradio Canada broadcasts a continuous weather information service on VHF-FM radio. Transmitted from the main antennae near Moncton, repeater stations provide for reception in most parts of New Brunswick. Small craft operators in most of the areas covered by this guide will have good to excellent reception by tuning to 162.55 MHz (WX1) or 162.40 MHz (WX2). Listeners in the Fredericton/Oromocto areas of the river should tune to 162.475 MHz (WX3).

105 The weatheradio broadcast is given in both English and French and includes public synopses and forecasts, marine synopses and forecasts, weather warnings when issued and selected weather reports for the province of New Brunswick. The program is repeated and updated at regular intervals with an average program length of 15 minutes.

106 Weatheradio Canada will alert users to warnings of severe weather automatically, provided receivers are equipped with suitable warning devices. A special signal will activate receivers.

107 Additional information and a fact sheet can be found on the Meteorological Service of Canada website:

www.msc-smc.ec.gc.ca

Horizontal Currents in Saint John Harbour

The currents and eddies in Saint John Harbour are extremely complex and unpredictable. They are caused by many factors, among which are the large semi-diurnal tides; the outflow from the Saint John River, which while at a peak during the spring freshet also varies with inland precipitation; a density current, which at certain stages of the tide produces a strong, deep inflowing current while the surface current is strongly outward; and the physical shape of the gorge between the Reversing Falls and the harbour which initiates the rolling or boiling motion on the falling tide.

Foam Line

A line consisting of foam and small bits of debris stretches across the approaches to Saint John Harbour. Its location changes with the state of the tide, but it should be most visible at half tide rising before slack water at the Reversing Falls.

On the outside of this line, the sea water is slightly tainted in colour with the yellowish-greenish tinge of fine sandy particles held in suspension. The fresher surface water on the inside is deep brown in colour.

Density Current

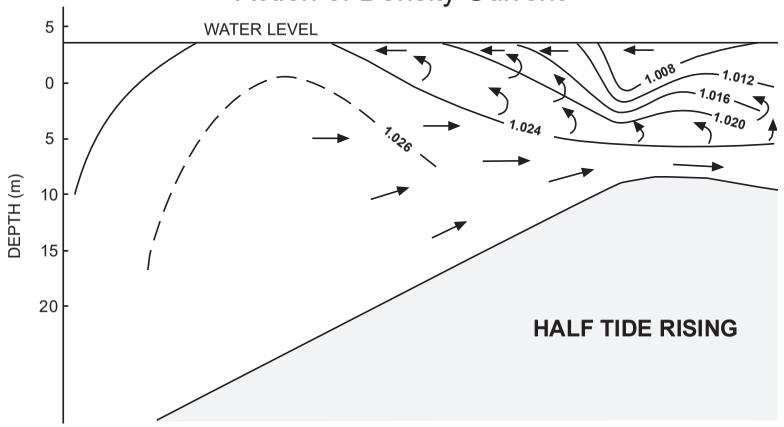
Conditions in Saint John Harbour can best be described as a wedge of salt water that advances and recedes beneath the fresh river water under the influence of the tide. There is a clearly defined stratification of water throughout the area, forming an interface between the two bodies of water. With the difference in the relative density of each layer, mixing between the two will occur. As the deep, denser salt water mixes upward into a fresher layer, it is carried outward and the water thus lost is replaced by more inflowing deep water. This is known as a density current, and undercurrent that has been recorded as high as 1.8 knots.

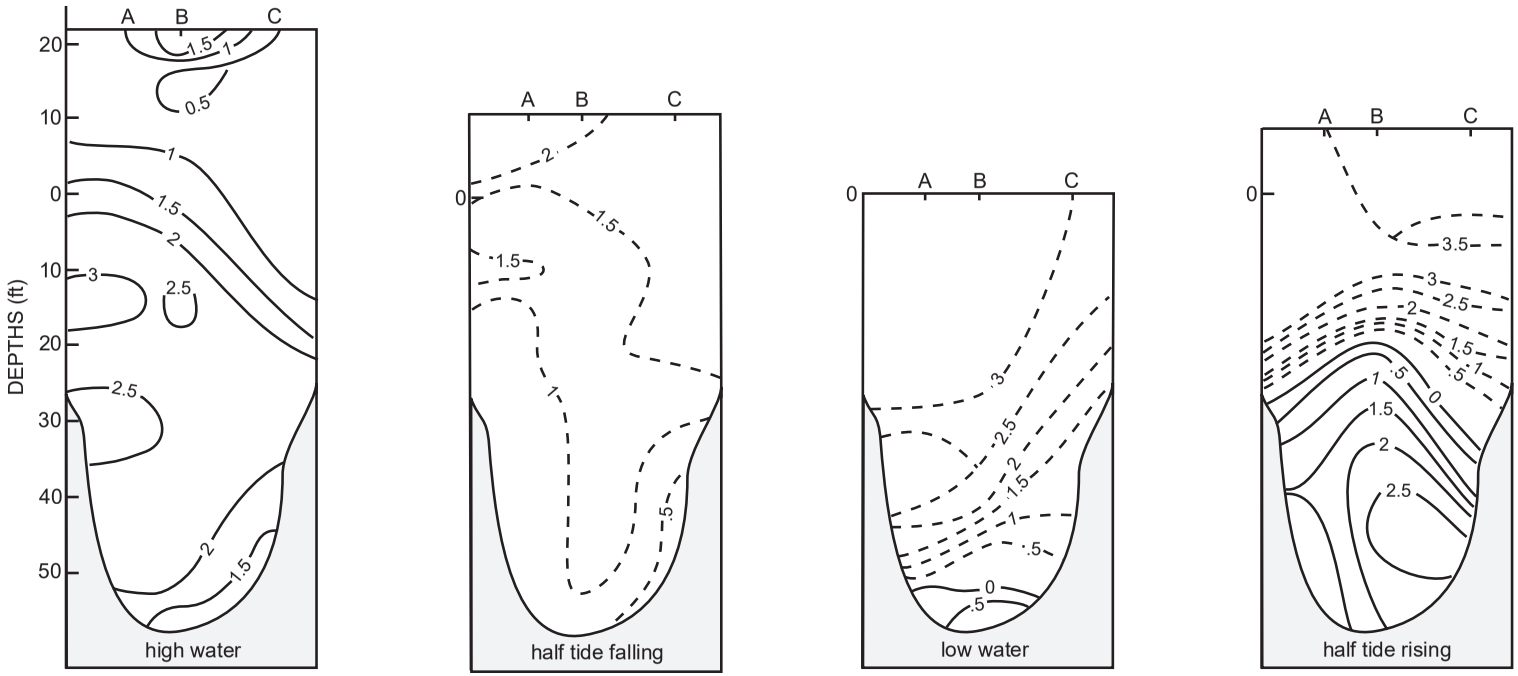
The illustration on the next page shows a cross-section of Saint John Harbour and the average condition of water through it during fou stages of the tide.

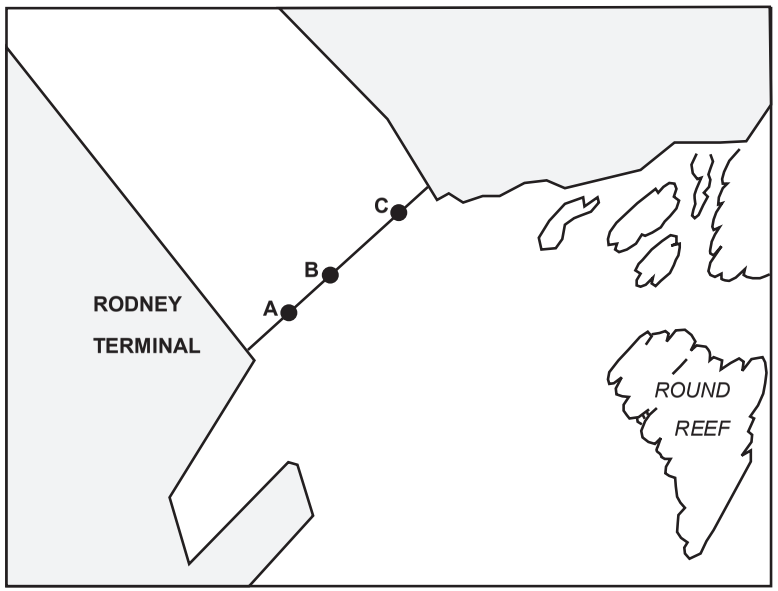
This illustrates the density current that strengthens and rises nearer to the surface as the wedge advances after low water. At high water, the entire movement is inflowing, while at half tide falling, after the change in flow at the Reversing Falls, the entire water movement is outward.

Mixing of salt and fresh water occurs in the main harbour and carries on upstream through the Reversing Falls. At the entrance to Courtenay Bay, the east navigation channel of the harbour, there is a complex circular motion of water. There is a minimal flow of fresh water into Courtenay Bay, and as a result, the density current is not as strong as in the main harbour. These conditions will vary during the freshet.

Action of Density Current







HORIZONTAL CURRENTS IN SAINT JOHN HARBOUR

——— INFLOWING CURRENT

- - - - OUTFLOWING CURRENT

NOTES:

1. ALL CONTOURS ARE IN ft/sec (1 ft/sec = 0.6 kn)
2. BASED ON A STUDY OF SAINT JOHN HARBOUR, SUMMER 1958
3. THIS ILLUSTRATION IS ONLY TO SHOW THE AVERAGE CONDITION OF WATER MOVEMENT WITHIN THE HARBOUR; THESE CONDITIONS ARE VARIABLE

	Edmundston	Saint John
mid winter		
mean daily temperature	-10 to -12°C	-6 to -8°C
minimum temperature	near -30°C	-15 to -20°C
mid summer		
mean daily temperature	-2 to 19°C	near 17°C
maximum temperature	25 to 30°C	20 to 25°C

108 **Atmospheric pressure** is measured in kilopascals. The unit of pressure, pascal (Pa), is named after a French scientist who carried out experiments in this field during the 17th century.

109 The day-to-day change in pressure — rising, steady, falling — is more significant as a weather indicator than the specific barometric pressure. The normal range is from 98.0 to 103.0 kPa. Rising pressure usually indicates the approach of a fair weather (high pressure) system. Falling pressure indicates stormy weather ahead.

110 **Climate**. — The Saint John River basin experiences cold winters and warm summers, with no dry season. Near the mouth of the river, the Bay of Fundy exerts a moderating effect on extremes of temperature. The number of days with fog is noticeably higher downstream from Fredericton, especially in late spring and early summer.

111 Because of this moderating effect, mean annual temperatures decrease in a northerly direction, from about 5° to 6°C near the coast to about 3°C or less north of Edmundston, in northern New Brunswick. Variations in seasonal temperatures are shown below:

112 The daily mean temperature drops below the freezing point, 0°C, in early November in the north and late November in the south, then rises above 0°C in late March in the south and early April in the north. During much of the interval the ground is snow covered, ranging from about two thirds of the time near Saint John to over 90 per cent of the time north of Fredericton. Late spring and early autumn frosts are common, especially in the north where the frost-free season averages only 100 days or less, compared to about 130 to 140 days south of Fredericton.

113 Total annual **precipitation**, which falls on an average of 135 to 155 days a year, is fairly evenly distributed over the year. Total amounts average from over 900 mm in the north to around 1,300 mm in the south, of which about 25 to 30 per cent falls as snow.

114 By late March, the snow cover in the upper portion of the river basin holds the equivalent of 100 to 200 mm of water on the average, but up to twice as much in some years. The combination of rising temperatures and spring rainfalls can release a large portion of this in a relatively short time, resulting in high river levels during April and May which can produce moderate to severe flooding in some years, especially if the heavy runoff coincides with the spring ice break-up. In such cases, ice dams can form.

115 Total annual **sunshine** averages between 1800 and 1900 hours per year, or about 40 per cent of the total daylight hours. In summer, the totals are somewhat lower near the Bay of Fundy than farther north due to the effects of fog banks and low cloud off the bay.

116 **Thunderstorms** occur on an average of 15 to 25 days a year. While they can occur at any time of the year, they are much more prevalent during the warmer season when 5 or more per month can occur. While not generally as severe as in other parts of North America, they can on occasion be accompanied by strong squalls or even hail.

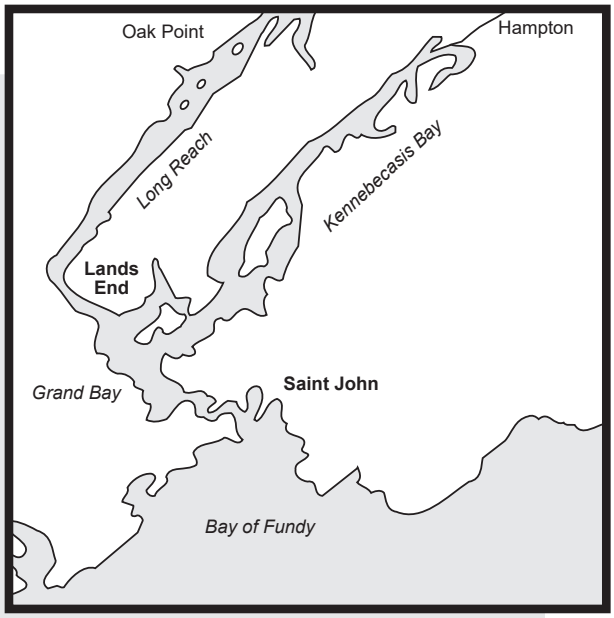
117 **Fog** is a common nuisance in the Bay of Fundy. When a mass of warm, moist air flows over the colder water of the Bay of Fundy, the water vapour in the air condenses to form a cool, damp fog.

118 Fog is most severe in spring and early summer. In July, the worst month, ship reports indicate fog 30 per cent of the time. It has been noted that in July, 1964, the fog horn at Machias Seal Island *(44°30'N, 67°06'W)* sounded continuously for 31 days, while in the same month in 1965 only one day of heavy fog was encountered.

119 Fog is most frequent in light southerly winds of less than 10 knots and rare in winds greater than 21 knots. Fog density will vary greatly on a local basis. It is usually thinner on the leeward side of fairly high shores, such as those to the NE of Grand Manan Island *(44°42'N, 66°47'W)*. A high sun will vaporize or "burn off" the fog tending to lift it. As the sun sets, fog will redevelop or move in, especially with an onshore breeze.

Saint John to Lands End

Chart 4117



1 The Canadian Coast Guard operates a **Vessel Traffic Services Centre** for the waters of the Bay of Fundy. The Centre is located at the Canadian Coast Guard Base in Saint John. Manned on a 24 hour basis, the Centre maintains communications with ships on VHF radiotelephone. Radar equipment provides surveillance over a large portion of the Bay of Fundy and Saint John Harbour.

2 The Centre receives traffic reports, establishes and maintains radio contact between vessels, monitors vessel movements, provides advance traffic information and warnings of potential navigational hazards.

3 The Bay of Fundy VTS System *(call name Fundy Traffic)* is divided into two sectors. Sector 2 includes the waters north and east of Grand Manan Island *(44°42'N, 66°47'W)* and Saint John Harbour. Vessels while in this sector monitor channel 12 (156.6 MHz).

4 Although the provisions of this system apply to all vessels of 20 m or more in length, small craft operators should maintain a listening watch for traffic information while in the approaches to Saint John. During times of reduced visibility, small craft operators should make their position and intentions known to the VTS Centre. For further information concerning the system, consult the *Annual Edition of Canadian Notices to Mariners*.

5 **Traffic information**. — The Port of Saint John is a tidal port; most ship movements occur between 2½ hours before to 2½ hours after the high water in the harbour.

6 Very large oil tankers may be encountered in the approaches to Saint John Harbour. These vessels may be alongside, proceeding to or departing from *Canaport*, the deepwater oil terminal situated at **Mispec Point** *(45°12'N, 65°59'W)*.

7 *Bay Ferries* operates a daily car and passenger service to Digby, Nova Scotia. The *M/V Princess of Acadia*, a 146 m ferry, makes the scheduled crossing of the Bay of Fundy in 2½ hours. The normal course of the vessel is 160/340° passing 1.5 miles west of Mispec Point, as shown on *Chart 4010*.

8 **Anchorage areas**. — In the approaches to Saint John Harbour, there are four lettered anchorage areas. These are best shown on *Chart 4116*. Although vessels are at anchor for varying reasons, usually an anchored vessel

PRINCESS OF ACADIA (2006)

is awaiting entrance into the harbour and may be in a state of readiness to proceed or manoeuvre at short notice. Anchored vessels maintain a listening watch on VHF channel 12 (156.6 MHz). Small craft may navigate safely through these areas with **caution**.

9 **Foam line**. — A line consisting of foam and small bits of debris stretches across the approaches to Saint John Harbour. Its location changes with the state of the tide, but it should be most visible at half tide rising before slack water at the Reversing Falls.

10 On the outside of this line, the sea water is slightly tainted in colour with the yellowish-greenish tinge of fine sandy particles held in suspension. The fresher surface water on the inside is deep brown in colour.

11 **Inner approaches to Saint John Harbour**. — The entrance channel into Saint John Harbour lies to the east of **Partridge Island**, 24 m high. A reef, which dries, surrounds the island. At the north end of the island there is a small breakwater and some wharves in ruins. A breakwater joins Partridge Island to **Negro Point**, 25 m high, 0.5 mile NNW. A **conspicuous** monument is situated about 0.1 mile SSW of the light.

12 A **light** *(100)* is shown from a tower, 14 m high, with red and white stripes on the highest point of Partridge Island. Fairway light and whistle **buoy** J *(145)* is moored 1.3 miles SSE of Partridge Island. A **racon**, identification Morse Code N (— •), operates from this buoy.

13 Between **Sheldon Point** and Negro Point, a coastal bank with depths of less than 5 m extends about 0.6 mile from the shore. **Shag Rocks**, one of which is 1 m high, lie on this bank about 0.8 mile west of Partridge Island.

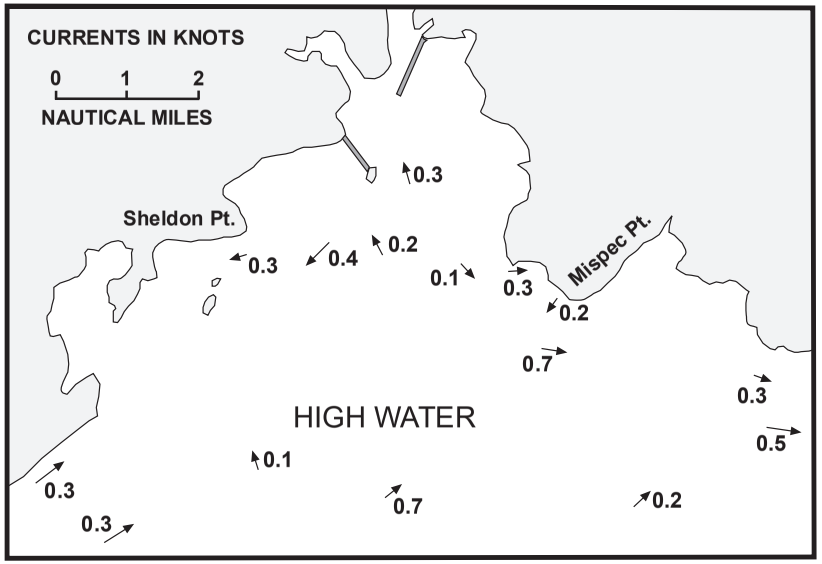
14 **Black Point** lies 1.1 miles NW of Mispec Point. A shoal patch, mud, lies 0.5 mile SW of the point. This is a dumping ground for dredge spoils. A **light** *(145.3)* is shown from a red and white tower on Black Point. Cautionary light and bell **buoy** JB *(145.4)* is moored close SW of the dumping ground.

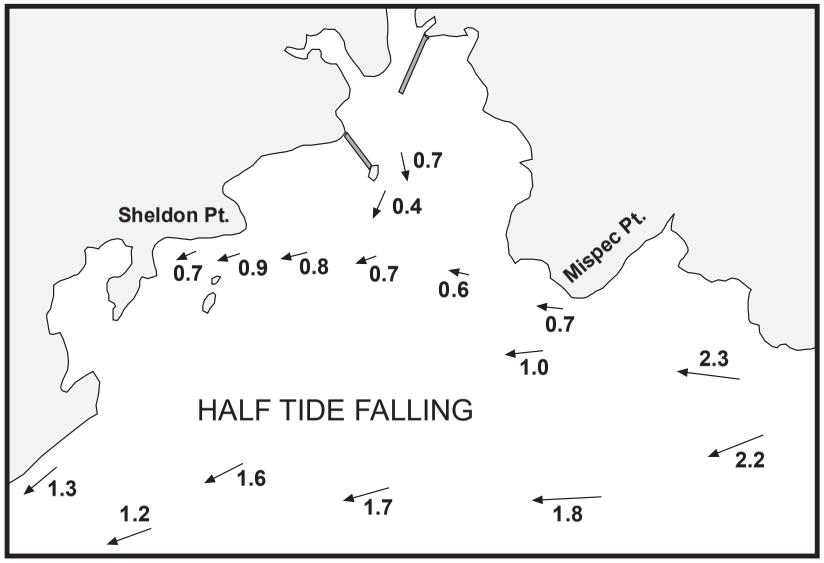
15 **Cranberry Point**, 3.7 m high, is situated 1.5 miles north of Black Point. A wreck, with 7.6 m over it, lies about 0.7 mile WNW of Black Point. **Red Head**, 19 m high with steep cliffs, and near which are several **radio towers**, is situated about 1 mile NW of Cranberry Point.

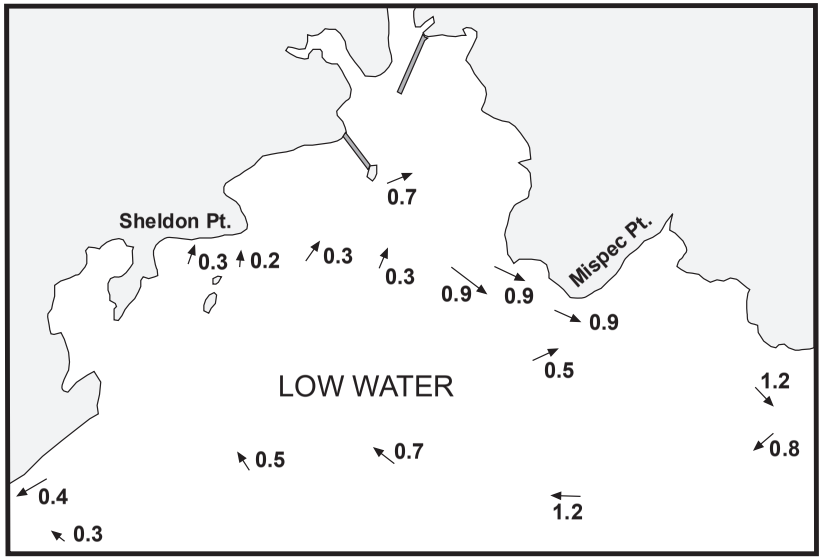
16 **Wind and sea conditions**. — A prolonged wind in excess of 20 knots from the ESE to the WSW direction produces a deep short swell, usually from the 20 m contour line (about 2 miles south of Partridge Island) inwards to the harbour. The swell will be strong when there is an outflow from the Reversing Falls (about 2½ hours after to 2½ hours before the high water in the harbour). Should wind conditions change, and after there is a change in flow at the falls, a longer, shallower swell can be expected.

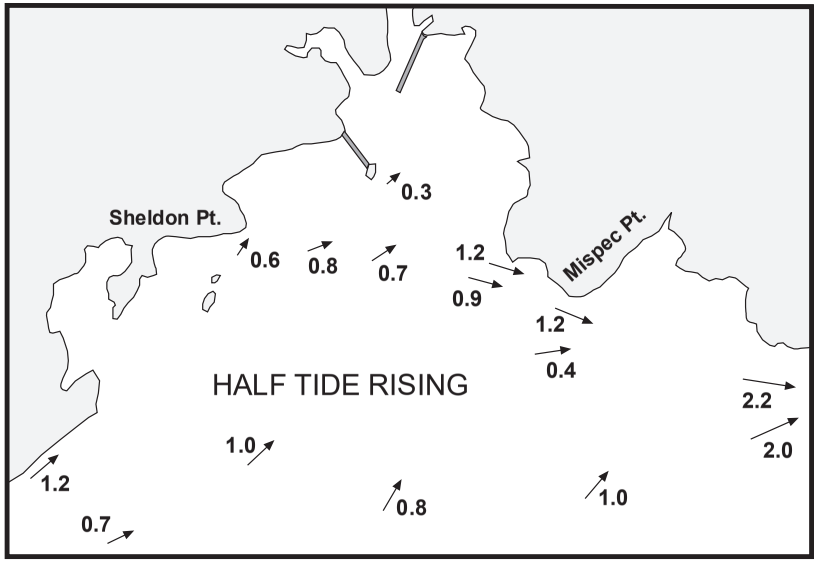
17 A breakwater extending nearly 1 mile to the SSW is situated about 1.2 miles NNW of Red Head. **Courtenay Bay** lies to the north and west of the breakwater. With the exception of a dredged channel, the bay is entirely

MEAN SET AND RATES OF TIDAL CURRENTS IN THE APPROACHES TO SAINT JOHN









SAINT JOHN HARBOUR — APPROACHES (2006)

SAINT JOHN — MAIN HARBOUR (2006)

SAINT JOHN — BUSINESS DISTRICT (2006)

occupied by sand and mud flats which dry. A **light** *(104)* is shown at an elevation of 13 m from a white tower on the outer end of the breakwater.

18 The channel into the main harbour is marked by **leading lights** *(100.5, 100.6)* in line bearing 333½°, which are shown from red daymarks with black stripes at the head of the harbour. The channel is about 160 m wide and has a depth of 8.4 m along the range line.

19 **Conspicuous objects**. — Three chimneys, at an elevation of 110 m and shown with red and white bands, are located about 1.3 miles NE of the Courtenay Bay breakwater. The *potash terminal*, with a large storage building, is situated at the SE end of the peninsula separating the main harbour from Courtenay Bay.

20 Three fixed red **lights**, privately maintained, are shown at an elevation of 4.6 m from the dolphin at the outer end of the ferry terminal.

21 **Bridge**. — Near the head of the main harbour, a highway bridge crosses the harbour in a north-south direction. The minimum clearance under this bridge is 21 m. Fixed red and green **lights** are fitted to masts beneath the bridge deck, on each side of the channel, on both the upstream and downstream sides of the bridge.

22 **Tidal streams and currents**. — The currents and eddies within the harbour are very complex and unpredictable. The harbour has extremely high tides and strong currents that are caused by the inflow and outflow of water from the Saint John River at the Reversing Falls. The range spring tides is about 8.8 m.

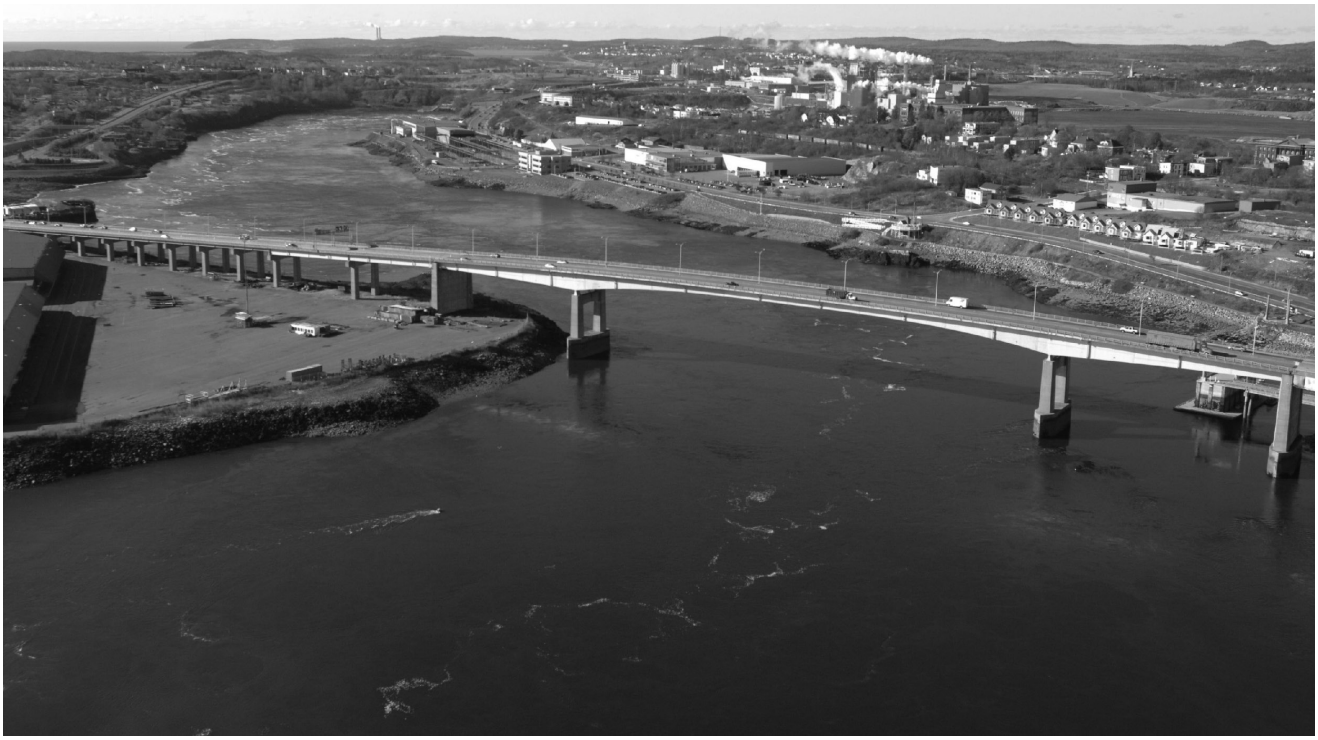
23 The flow through the Reversing Falls is dependent on the difference between the water levels in the harbour and river. At high water, there is a strong inflow into the Saint John River, as the tide falls and after a short period of slack water, the flow reverses and there is a strong outflow from the falls. On the outflow, the water shows a strong boiling motion at the head of the harbour.

24 The flow of surface water at the falls and in the harbour is opposite to the tidal flow in the harbour. Therefore, until slack water at the falls, although the tide is falling in Saint John Harbour, the surface current is still inflowing; the opposite is true on a rising tide.

25 The **salinity** of the water in the harbour varies with the state of the tide. During the spring freshet the water is almost entirely fresh.

26 **Regulations**. — The Port of Saint John is operated by the *Saint John Port Authority*. Vessels within the harbour limit are subject to operating instructions which may be obtained

SAINT JOHN RIVER — APPROACHES TO REVERSING FALLS (2006)



from the port corporation. These instructions require that no vessel shall move in the harbour at a speed that may endanger life or property.

27 **Berth**. — To await slack water at the Reversing Falls, a temporary berth is available at a floating dock facility that is located adjacent to the Market Square Complex. It is reported that as many as eight vessels, with drafts up to 2.1 m, can be accommodated. Customs services can also be arranged. **Market Square** comprises a trade and convention centre, city library, a provincial museum, numerous specialty shops, restaurants and offices.

28 The city of **Saint John** is the commercial centre of New Brunswick and is also one of Atlantic Canada's largest industrial areas. The city has a surface area of 321 sq. km, and by geographical size it is the largest city in the Maritime Provinces. In 2006, the Saint John metropolitan area had a population of 122,389.

29 Founded with the landing of the Loyalists on May 18, 1783, the town of Parrtown was incorporated into Canada's first city to receive a charter two years later, and was named after the Saint John River.

30 Saint John flourished in trade, industry and shipbuilding. The port became the main supplier of timber to Great Britain, and its ships were in use throughout the world. By the 1870's, Saint John was the fourth largest shipowning port in the world. At this time, the community was at a peak of a prosperity that came rapidly to an end with the appearance of iron-hulled and steam propelled ships, which resulted in the ships of Saint John losing their competitive edge.

31 The city was dealt yet another blow, for on June 20, 1877, a fire swept through the enterprising community. Its commercial centre and all of the south end were virtually levelled. The area was re-built, and by 1882 a new appearance made almost entirely of *fire-proof* brick had emerged. This core remains largely unchanged, and today its streets are lined with some of the finest examples of Victorian architecture to be found anywhere in Canada.

32 During this century, Saint John has developed a highly diversified industrial base. The Irving Oil Refinery is the largest in Canada. The city is home to breweries, pulp and paper mills, energy production plants and many other industries.

Charts 4117, 4141-1

33 **Reversing Falls**. — The Saint John River drains into Saint John Harbour through the narrow gorge of the Reversing Falls, a unique ridge of rock that extends across the river. Rising abruptly from the river bed, and with deep water on both sides of it, it has a damming effect on the inward and outward flow of the tidal water.

34 The fall through the gorge is entirely due to the difference of the water level on either side of it. Near high water, the water level on the harbour side is from 1.8 to 3 m above the river, and the sea water flows upstream into the river system. At low water, the surface of the river is from 3.4 to 4.6 m above the harbour, and the outward flow is a combination of fresh water from the river system and the sea water that flowed upstream during the previous high tide.

35 During the spring freshet that usually occurs between the beginning of April and the middle of May, the rising waters of the river from the melting of snow control the flow at the falls. Under certain conditions the flow does not reverse and the falls are impassable to vessels bound up the river.

36 The falls are divided into **Upper Falls**, off Union Point, and **Lower Falls**, under the bridges. The cascade effect is more pronounced at the Upper Falls. The Lower Falls are primarily created by turbulence as the water rushes through the narrow gorge past Split Rock and the rock off the western shore.

37 **Slack water**. — The falls reverse direction twice during every tide and the cascade effect is more pronounced on the outward flow. The falls can only be navigated when the waters on both sides are level or nearly so. Ordinarily, the slack water period is 10 minutes in duration and occurs at about 2 hours and 25 minutes after high water, and 3 hours and 50 minutes after low water at Saint John. However, the falls may be navigated for about ½ hour before and after this period. At other times during the outward flow they are impassable. They have been navigated with the inward flow near its maximum, but this is hazardous and is **not recommended**.

38 Meteorological conditions can alter the time of high and low water from that predicted. The time of slack water at the falls may be as far removed from predictions as the length of the navigable period.

39 **Times** listed daily in *Canadian Tide and Current Tables* are quoted in **Atlantic Standard Time**. When **Daylight Savings Time** is in effect, 1 hour must be **added** to arrive at local time.

40 The direction of flow at the falls offers a check on the predicted times for navigable slack water. If an inward flow too turbulent for navigation is found at the falls during a falling tide, slack water has not yet arrived. If an outward

REVERSING FALLS — DURING EBB FLOW (2006)

REVERSING FALLS — FROM THE NORTH (2006)

flow too turbulent for navigation is found during a falling tide, boats must retreat and await the next slack.

41 **Split Rock** *(45°16'N, 66°05'W)* is a small islet, 0.3 m high, lying at the base of the rocky cliff point that marks a sharp turn in the river 0.9 mile SW of **Hilyards Reef**. Immediately above Split Rock the river runs through a narrow gorge about 135 m wide.

42 A rock, covered at high water, lies less than 12 m off the west bank of the gorge directly beneath a road bridge, the southernmost of two bridges crossing the gorge nearly 60 m north of Split Rock.

43 **Bridges**. — The lower of two bridges crossing the gorge above Split Rock has an **overhead clearance** of 24.4 m at ordinary slack water.

Chart 4141-1

44 **False Island**, connected to the east bank at low water, is situated midway between the above bridges and Prospect Point.

45 **Union Point**, on the west side of the river and about 0.3 mile above the bridges, is the site of a large pulp and paper mill.

46 **Lee Cove** lies close west of Union Point. Between Lee Cove and Pleasant Point, the greater part of the shore is high and rocky. A boom lies across Lee Cove.

47 **Prospect Point**, 0.4 mile north of the bridges, is the south entrance point of **Marble Cove**. Abreast of Prospect Point lie three small islands. **Crow Island**, 8 m high, the southernmost, lying 52 m from the east shore, is covered with bushes.

48 **Middle Island**, 8 m high, lying 30 m north of Crow Island and connected thereto by a drying gravel bar, is also covered with bushes.

49 **Goat Island**, 4 m high, the northernmost of the three, is bare, quite flat and has white edges. It is separated from Middle Island by a shallow gap, 45 m wide, providing passage for only the smallest of craft. This island lies about 110 m offshore. A drying reef of boulders extends 25 m from its northern extremity.

50 **Little Falls** is the local name to the passage between the above islands and the east shore. Although there is a depth of 2.1 m in mid-channel, two large boulders – one about 45 m below the north end of Middle Island and the other abreast of it and 12 m from the mainland

REVERSING FALLS — APPROACHES FROM THE NORTH (2006)

shore – are both covered at slack water and make this passage unsafe at any time.

51 **Channel directions**. — The approach to the Reversing Falls is made by rounding **Navy Island**, a peninsula with a forest products terminal on it, and then passing under the Saint John Harbour Bridge.

52 Rather than make the turn at Split Rock, boats should enter the cove formed by the bend in the river 0.2 mile south of the bridges. The approach to the gorge from the cove is a straight line, and eliminates the leeway boats would experience while rounding Split Rock, especially with an upriver flow. The much reduced current flow in the cove allows boats to hold position while observing the state of the falls. On an incoming flow a complete circle to port into the cove may be helpful, this action being the best escape from the falls if too close an approach is made outside the navigable period.

53 When the tide is flowing into the river, a strong set from Split Rock towards the rock on the western shore is experienced.

54 Once clear of Split Rock, upbound boats should alter course to starboard to stay in mid-channel, avoiding the rock on the western shore, until midway between the bridges and False Island. At this point bring the west extremity of Crow Island in line with the same extremity of Goat Island, until midway between False Island and Crow Island when boats should alter to port to put False Island astern.

55 Downbound boats have only to reverse the above procedure. Such boats can observe the falls while off **Rowans Point**, the north entrance point to Marble Cove. Should a boat make too close an approach to the falls, Lee Cove presents an escape, here the current flow is much diminished, and back eddies exist.

56 Should a boat be swept through the Upper Falls, the cove between Union Point and the bridges is its only escape from the Lower Falls. Boats can ride out a tide here as the current flow is much diminished.

57 Downbound boats waiting for slack water will find good holding ground off **Indiantown**, just above Rowans Point in 9 to 18 m of water, or in the entrance to Lee Cove.

58 **Local knowledge**. — Assistance in piloting the falls will be made available by the Royal Kennebeccasis Yacht Club, phone 632-0186.

59 **Marble Cove** *(45°16'N, 66°05'W)*, formerly a timber pond, is mostly dry at low water. The area that does not dry is taken up with sunken ruins.

MARBLE COVE — SAINT JOHN POWERBOAT CLUB (2006)

60 **Saint John Powerboat Club** is located in the NE corner of Marble Cove. There are 80 berths alongside the wharves, visitors and those who are waiting for slack water at the Reversing Falls are welcome and a berth is available on request. Gasoline, diesel fuel, water and a telephone are available at the wharf. A marine railway, which can accommodate boats with a draft of 1.7 m up to 20 tonnes with a beam of 4.9 m, is located at the marina. A travelift is also available for use.

61 A **buoyed** channel, about 12 m wide and dredged to a depth of 1.2 m, runs along the north shore of Marble Cove between ruined wharves and a boat mooring facility on the north side, and a row of piles on the south side.

62 **The Narrows** is the part of the river between **Pleasant Point**, about 0.8 mile above the Reversing Falls, and Swift Point. It averages slightly over 305 m in width, with the shore on either side being mostly rock cliffs rising abruptly

SAINT JOHN RIVER — THE NARROWS (2006)

SWIFT POINT LIGHT (2006)

to a height of 46 m in places. The water is deep, with mid-channel depths being over 30 m. Except during slack water, the current is strong in both directions.

63 **Mosquito Cove** *(45°16'N, 66°07'W)*, at the sharp turn in The Narrows, opposite **Robertson Point**, is a small cove, mostly dry at low water. Remains of old log boom cribs exist in the eastern half of the cove, which make the cove hazardous even at high water. A charted wreck is located 0.15 mile north of Mosquito Cove.

64 **Swift Point**, composed of steep shelving rock, lies 0.7 mile NW of Mosquito Cove. A rock, dry at low stages of the river, lies about 9 m off Swift Point, and is a danger to boats which closely follow this shore to avoid the current.

65 **Transmission lines**, with an overhead clearance of 31 m, cross the channel about 0.25 mile south of Swift Point. The towers are marked by red lights.

66 **Swift Point light** *(116)* is shown at an elevation of 28 m, from a white square tower, 14 m high, situated about 0.2 mile west of Swift Point. The light marks the northern Saint John Harbour limit.

67 **Green Head** *(45°17'N, 66°08'W)* is about 0.4 mile west from the lighthouse. The steep rocky shore here is 15 m high.

68 **Sand Cove**, 0.7 mile south from Green Head, is a small indentation with a sand beach. The bathing area here is part of a city operated park.

69 **South Bay**, entered between Green Head on the east and **Arthurs Point** on the west side, is comparatively shallow. South of Arthurs and Sand Points, the submerged portions of cribs, half sunken logs etc., make this portion of the bay unsafe for navigation of any kind. **Transmission lines**, with an overhead clearance of 25 m, cross the entrance to South Bay from Arthurs Point. The towers are marked by quick flashing lights.

70 **Acamac**, **Ketepec**, **Morna**, **Martinon**, **Grand Bay**, **Pamdenec** and **Epworth Park**, between South Bay and **Brandy Point**, 4.2 miles NW of South Bay, are residential communities. A church spire is situated in Grand Bay.

71 The **Saint John Marina** is located at Ketepec. A breakwater, made of rock fill over the ruins of a wharf, with two wrecks near its NW end, shelters the marina on its east side. Berthing facilities can accommodate 150 vessels. Water, electricity, ice, gasoline and diesel fuel, engine repairs and marine hardware are available. The marina operates a licensed restaurant and a licensed lounge; all facilities are open to visitors. The channel into the marina is buoyed, and it has a speed limit of 8 km/hr (4 knots).

72 Off Martinon Beach are several private mooring buoys, **caution** should be exercised when navigating in this area.

73 **Boars Head** *(45°18'N, 66°08'W)*, lying about 0.9 mile north from Green Head, is a **conspicuous** promontory about 30 m high. Its peculiar shape takes its name from a resemblance to the head of a pig.

74 **Grand Bay**, which is the confluence of the Kennebecasis and Saint John Rivers, extends NW from Boars Head 2.4 miles to Lands End. Grand Bay averages over 0.9 mile in width, and at times is quite rough for the passage of small craft. **Lands End** *(45°20'N, 66°10'W)*, a high rocky wooded point, is steep-to.

Kennebecasis Bay

75 **Kennebecasis Bay** and **Kennebecasis River**, from where it joins the Saint John River to Perry Point, is 14 miles in length, 2.6 miles wide at one place and with depths as great as 62 m.

76 **Ragged Point**, low and rocky but steep-to, lies 0.6 mile NE from Boars Head.

77 **The Brothers** are two wooded islands that lie 0.8 mile east of Ragged Point. **Goat Island**, the easterly one, being 24 m in height, has a hummock appearance, and **Indian Island**, the westerly one, is 18 m high. A gravel bar joining the two islands blocks the passage between them. These islands shelter **Brothers Cove** on the NW.

78 **Red Rock** is the name applied to two rocks, one of which dries at low water, lying on the east side of the NE entrance to the cove, and about 0.1 mile from shore. Port hand light **buoy** AM3 *(118)* is moored SW of Red Rock.

KETEPEC — SAINT JOHN MARINA (2006)

79 **Den Boom Cove**, lying west of Brothers Cove, is a shallow indentation formerly used for log storage. Remains of old boom cribs and a drying rock lie in its southern half.

80 Brothers Cove provides good shelter from west and south winds, but affords little protection from strong NE and east winds, as the swell from Kennebecasis Bay rolls in through the NE entrance.

81 **Millidgeville**, within the city limits of Saint John, lies at the head of the cove.

82 The **Royal Kennebecasis Yacht Club** is located in the centre of Brothers Cove; the clubhouse is a **conspicuous** building. The channel to the wharf is marked by **buoys**.

83 **Berthing**. — An L-shaped breakwater-wharf is located in front of the clubhouse. The wharf is 52 m in length and 12 m wide, with minimum depths of 2.1 m alongside the inner face and 2.4 m alongside the outer face of the L-end. Gasoline, a diesel fuel pump and a water hose are located on the north corner of this wharf, the depth alongside at the pump is 3 m.

84 A marine railway capable of handling boats of 22 tonnes, draft 2.4 m and beam 7.6 m. This separates the wharf from an L-shaped stone breakwater, to which three floating wharves are attached. A privately maintained **light** is shown from a pile cluster to the NE of the breakwater.

85 Numerous boat moorings are situated around the club facility. Visiting boaters are welcome, and a mooring will be allocated upon request. The following facilities are available: launching ramp, restaurant, electricity, telephone, gasoline, diesel fuel, sewage pumpout, water, ice, showers.

86 **Obstruction**. — A buoyed sunken crib, with a depth of 1.2 m over it, lies between Red Rock and the yacht club.

87 The remains of a boom consisting of stone and crib work lie about 30 m from the NE entrance point of Brothers Cove. There is a **wreck** charted close east of the yacht club wharves. A second **wreck** is charted 0.12 mile east of the first wreck **Caution** is advised.

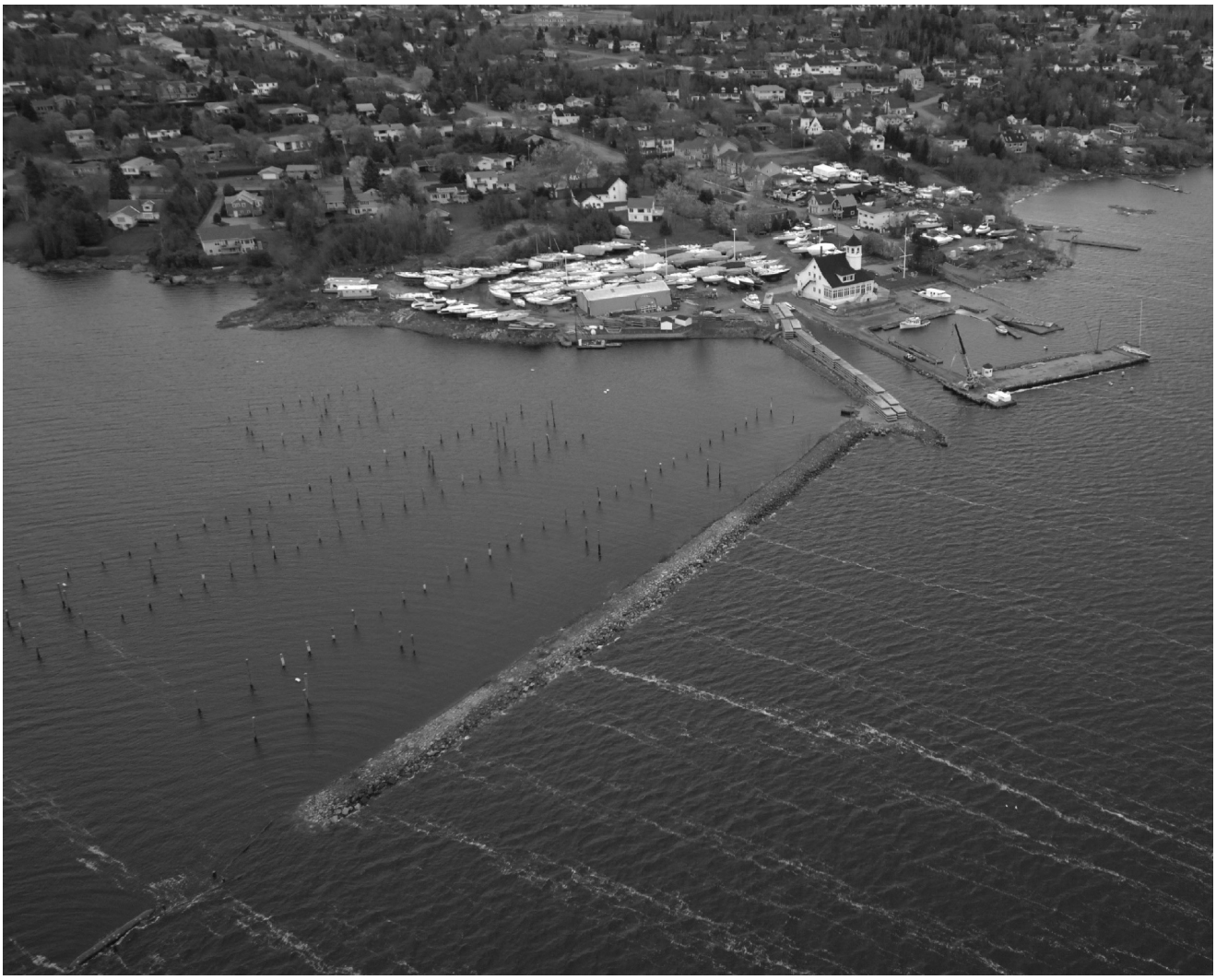
88 **Overhead cables**, with a clearance of 17 m, span a small inlet on the west side of Brothers Cove, 0.4 mile south of Goat Island.

89 **Burnt Island** *(45°19'N, 66°06'W)*, situated 0.5 mile NE of The Brothers, is 18 m high and wooded. On its outer face the island is steep-to, but as a whole it has a rounded appearance. The passage between the island and the mainland has a depth of only 0.6 m.

90 **Kennebecasis Island** lies north of the entrance to Kennebecasis Bay. Its SW and SE sides are mostly rocky and steep-to, the rest of the island being fringed with somewhat shoaler depths.

91 **McCormack Cove**, on the SW side of the island, is a popular **anchorage** area with good holding ground, sheltered from all but southerly winds. There is a small islet in the central part at the head of the cove. Two

BROTHERS COVE — ROYAL KENNEBECASIS YACHT CLUB (2006)



rocks awash at high water lie 60 m off the south end of this islet.

92 **Obstructions**. — Two sunken cribs are located abreast of the point at the widening of the upper end of McCormack Cove. One crib, over which there is a depth of 1.8 m, lies about equidistant from each shore. The second crib, over which there is a depth of 3.7 m, lies 140 m from the east side of the cove.

93 **Milkish Channel** is the passage leading from Grand Bay north and east of Kennebecasis Island into Kennebecasis Bay. Both shores are wooded. **Man of War Rock**, drying 0.3 m, lies 0.8 mile within the west entrance to the channel and is about equidistant from either shore. It is marked by two starboard hand **buoys**. A **submarine cable** is laid across the narrowest part of the channel, 0.5 mile NE of Man of War Rock.

94 **Bayswater**, situated on the west entrance point to **Milkish Creek**, lies 2 miles NE of Lands End. A covered highway bridge with a vertical clearance of 4.9 m crosses the narrow passage leading into Milkish Creek 0.3 mile above Bayswater.

95 A bar, covered with weeds, crosses the entrance to Milkish Creek abreast of the church tower at Bayswater. North of the church, a channel with depths of less than 1.8 m runs along the east side of the passage to the highway bridge. Milkish Creek, which extends 1.3 miles north from the bridge, has extensive areas of weeds, and is not surveyed.

96 A discontinued light, a white square tower 10.6 m high, is situated 0.15 mile SW from the entrance to Milkish

KENNEBECASIS ISLAND — McCORMACK COVE (2006)

Creek. Two rock-filled cribs in ruins, awash at high water, extend out to the 2 m line from a point close SW of the tower.

97 **Ram Island**, covered with trees and bushes, is situated at the turn in Milkish Channel.

98 Between the entrance to Milkish Creek and McColgan Point, 1.7 miles SE, the shore is indented by two shallow coves. The first of these bays is overgrown with weeds. **Sea Dog Cove**, the second cove, formerly used for log storage purposes, is rendered almost useless by numerous deadheads, cribs and piles. A rock islet, 1 m high, lies less than 0.1 mile off its NE entrance point. A second islet, low and marshy, is situated 0.05 mile off the point near the head of the cove.

99 **Polly Sams Point** lies midway between the above bays, from which a gravel bar extends to a bare, **conspicuous** bedrock islet, 1 m high.

100 **McColgan Point**, on the mainland, is the SE entrance point of Milkish Channel. This wooded point is a rocky bluff about 15 m high. A **light** *(119)* is shown at an elevation of 11 m, from a white square tower, 0.25 mile NNE from McColgan Point.

101 A **cable ferry** crosses to Kennebecasis Island from a ramp, which lies close north of a steel framed and wooden pier, to the north of McColgan Point light. *See* caution regarding cable ferries in Chapter 1.

102 **Directions. — Milkish Channel**. — Entering from Grand Bay, the deepest water will be found by passing about 0.2 mile south of Lands End. Steer to pass 0.1 mile north of Man of War Rock. The NW extreme of Kennebecasis Island in line with the south extreme of Ram Island at the turn in the passage, bearing 050°, will lead clear of the rock.

103 The mud bottom in Milkish Channel provides good holding ground; shelter can be found from all winds.

104 **Barlows Bluff** is the name applied to the steep rock shore between McColgan Point and Head of the Bluff.

105 **Head of the Bluff** tapers to a treed rocky point, 2.1 miles NE of McColgan Point. The greatest depth of 62 m in Kennebecasis Bay is found 0.2 mile SE of this point, which is the southern entrance point of **North Channel**.

106 **Sandy Point** *(45°20'N, 66°05'W)*, opposite Barlows Bluff, is of sand formation and juts out into the bay. **Submarine cables** cross Kennebecasis Bay from Sandy Point.

107 A **ferry** operates from a point midway between Burnt Island and Sandy Point, to a terminal on the opposite shore, 0.5 mile NE of McColgan Point. This is the only ferry on the Saint John River that is not cable operated.

MILKISH CHANNEL — FROM THE WEST (2006)

108 **Drury Cove**, 1.8 miles NE from Sandy Point, is a small boat harbour that is sheltered from all winds. The shores at its entrance are fronted with white rock. The approaches to the cove are quite deep, but a bar of limestone rock with only 2.4 m of water over it at low water limits the draft of vessels entering it. Two boulders on this bar, with 0.6 to 0.9 m of water over them, narrow the passage across the bar to less than 60 m. The passage is **buoyed.** There are a few private moorings in the cove.

109 **Aquaculture** cages are moored in various places within Drury Cove, and one is moored off the

MILKISH CHANNEL — ENTRANCE EAST OF KENNEBECASIS ISLAND (2006)

KENNEBECASIS BAY — DRURY COVE (2006)

west entrance point. Radar reflectors and flashing yellow lights are placed on the outer sides of each cage.

110 **Torryburn Point** *(45°21'N, 66°02'W)*, 1.2 miles north of Drury Cove, is also fronted with white rock. It is low and wooded and stands out prominently from all points of approach.

111 **Hastings Cove** is a small open bight, 0.7 mile south of Torryburn Point.

112 **Long Island** divides Kennebecasis Bay at its widest part into two channels. The southern part of the island, with elevations up to 30 m, is the lower side of the island. The northern part rises to a height of over 107 m. The greater part of the island is wooded, and at its northern end there are a few summer cottages. On the NW side of the island there are four sand beaches.

113 **Cathline Cove**, on the SE side of the island, is an open bight where good **anchorage** can be found.

114 **Ministers Face** is a **conspicuous** red cliff, 61 m high, on the east side of the island, near its north end.

115 **Mather Island** lies off the NE extremity of Long Island, only 0.1 mile separating the two. The island is low, wooded and of a rocky nature. There is a long sand beach on its western side. A rock breakwater almost joins the two islands; a narrow opening through it has a depth of 1.2 m in the centre. Passage through this opening is not recommended.

116 **Torryburn Cove**, shallow and narrow, is formed on the east side of Torryburn Point. There are numerous boat moorings in the entrance to the cove. From Torryburn Point to near the head of the bay, the eastern shore is residentially developed.

117 The community of **Renforth** is situated 0.8 mile east of Torryburn Point. Rocks extend outwards from the peninsula separating Torryburn Cove from **Renforth Cove**. Good **anchorage**, sheltered from southerly winds, can be found here.

118 An L-shaped concrete wharf extends 61 m from the east shore of the cove. The outer end of the wharf is 16 m long and 13 m wide on the south side. There are depths of 1.8 to 3.4 m alongside. A designated swimming area exists along the north side of the wharf. **Renforth Boat Club** is located close to the north. There is a concrete launching ramp, 4 m wide, a small craft marine railway, and numerous boat moorings. Visitors are welcome and mooring is available on request. The large clubhouse of the Riverside Country Club, 1 mile to the north, is **conspicuous**.

KENNEBECASIS BAY — RENFORTH BOAT CLUB (2006)

119 **Troop Reef** is a shoal area extending 0.4 mile from the head of an open bight known as **Sandy Beach Cove**, 1.8 miles NE from Torryburn Point. An isolated spot with a depth 1.8 m, over rock, lies near its outer edge. A **buoy** is moored at the outer limit of the shoal area.

120 **Clearing mark**. — Barlows Bluff, just closed behind the SE extreme of Long Island, clears Troop Reef.

121 **Rothesay**, population 11,637 in 2006, is a town situated almost opposite to Ministers Face. The south entrance point to the cove at Rothesay is low and grassy, and from it a gravel spit with a rock on its outer end extends 90 m. **Rothesay Rock**, drying 0.3 m, is situated about 0.1 mile north of the south entrance point. Port hand light **buoy** AP1 *(118.3)* is moored off **Hendersons Point**, the north entrance point to the cove.

122 The **Rothesay Yacht Club** is located close south of Hendersons Point. A concrete wharf extends 70 m to an outer end 18 m long, with a depth of 1.8 m alongside. There is no berth on the west side of the wharf, and the east side shallows to a depth 1.5 m, 15 m from the head.

123 A floating jetty with a launching ramp and numerous boat moorings lie close east of the wharf. A large clubhouse is located near the head of the wharf. Visitors are welcome and a mooring will be made available upon request. Fresh water is available. Stores, gasoline, a bank, and several churches are located in the town within 0.4 mile from the Yacht Club.

124 Between Hendersons Point and **Gondola Point**, 3.5 miles NNE, the water is deep close-to, Fairvale Reef being the only offshore danger. **Fairvale Reef**, with 2.4 m of water over boulders, lies a little more than 0.8 mile north of Hendersons Point. Being 0.25 mile from shore and surrounded by deep water, it forms a menace to navigation which can be easily avoided by keeping closer to the Long Island shore.

125 A **conspicuous** church is located on the opposite shore about 1.3 miles north of Mather Island. The church is obscured to the south by a prominent conical hill, 75 m in elevation.

126 At Gondola Point the shore turns abruptly, affording excellent shelter from southerly winds in depths of 5.5 to 9 m, mud.

127 **Cable ferries** operate between Gondola Point and **Reeds Point**, directly opposite. *See* the caution regarding cable ferries in Chapter 1. Reeds Point is a low gravel spit which stands out prominently.

128 A public park with a popular sandy beach forms the shore west of the ferry crossing at Gondola Point. A **subma-**

KENNEBECASIS BAY — ROTHESAY YACHT CLUB (2006)

rine cable crosses the river from the village of Gondola Point, to the SW of the park.

129 **Matthews Cove** is a small indentation on the east side of Gondola Point. There are depths of over 5.5 m between the entrance points, but the cove itself is too shoal to be of use. A **submarine power cable** crosses the river from Matthews Cove to a position on shore 0.2 mile west of **Wheatons Point**.

KENNEBECASIS BAY — MEENANS COVE (2006)

HAMPTON MARSH (2006)

130 From the east entrance point of Matthews Cove to **Forresters Bluff**, 0.9 mile NE, the shore is fringed with boulders and is steep and wooded in character, the point itself being a low rock bluff. A **shoal**, with 3.7 m of water over rock, lies 0.2 mile NE of Forresters Bluff in the entrance to Forresters Cove.

131 The cove east of Forresters Bluff has two arms. **Forresters Cove** on the west and **Meenans Cove** on the east afford good shelter in 9.1 m, mud. The head of Meenans Cove has shallow water, and it is foul with weeds. A camping and picnic park, with a popular swimming area and launching ramp, is located along the east shore of Meenans Cove.

132 **Oliver Point**, 1.5 miles NE of Reeds Point, is the limit of deep water on **Kennebecasis River**. The point is low with a sand beach on its east side. **Perry Point**, 0.4 mile NE of Oliver Point, is the site of an old ferry crossing. A pile of stones on the shore marks the landing. **Murphy Cove**, an open bight between Oliver and Perry Points, is too shallow for use.

133 The river is navigable for another 6.1 miles to the village of Hampton, by way of a narrow channel with depths of 1.8 to 6.1 m.

134 The channel as far as the NW side of **Darlings Island**, 3.3 miles NE of Perry Point, is relatively straight. The river in this section is over 0.22 mile wide and the channel runs through very shoal water overgrown with weeds. Above Darlings Island, the channel runs between well defined river banks.

135 Only sunken piers, 9.1 m apart, remain of the highway bridge which once crossed the river 0.35 mile NE of Perry Point. The westernmost pier lies 9.1 m off the river bank.

136 **Directions**. — The buoyed channel from Murphy Cove should be carefully followed. Proceed with caution until beyond the old bridge. Remain about 15 m off the bank to pass between two of the sunken piers.

137 From the old bridge, there is weed growth along both sides of the channel for the next 2.7 miles. At the turn of the channel towards Darlings Island, the river becomes easy to follow between well defined banks.

138 For the last 0.4 mile to the bridge at **Hampton**, boats should stay between midstream and the NW bank as the SE bank is shoal.

139 The village of Hampton, population 4,004 in 2006, marks the head of navigation on the Kennebecasis River for small craft. In the village there are several churches, schools, service stations and a museum. A shopping centre is located on the fringe of the village near the main highway.

Lands End to Evandale

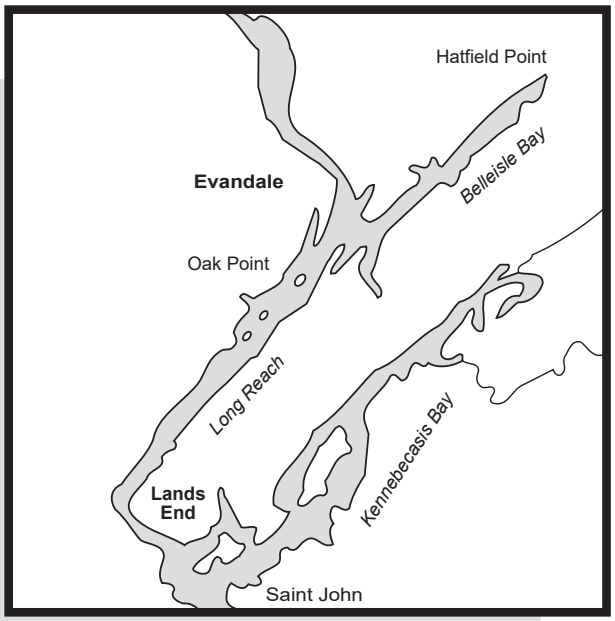


Chart 4141-2

1 **Brandy Point**, composed of sand and gravel, is low and situated 0.85 mile NW of **Lands End** *(45°20'N, 66°10'W)*. Shoal water extends about 0.2 mile from this point. Port hand light **buoy** J25 *(120.5)* marks the edge of the shoal water.

2 A **strong current** is experienced in the vicinity of Brandy Point, especially on the ebb. When the wind opposes the ebb a steep chop develops.

3 **Longs Cove** and **Buckleys Cove** are two open coves between Lands End and Sand Point. There are a number of cottages in this area.

4 **Sand Point**, 1.5 miles above Lands End, is low and steep-to. There is an excellent sand beach. There is an L-shaped wharf here extending 30 m from shore, the L-end being 17 m long and 15 m wide. There is a depth of 2.7 m alongside the outer face, shoaling to 1.5 m alongside the inner face. The sides of the wharf are usually cordoned off for swimming. There are no facilities in the immediate area.

5 **Sand Point light** *(121)*, situated on the shore at the inner end of the wharf, is shown at an elevation of 23 m from a red skeleton tower with a white wooden framed upper portion.

6 At **Westfield**, 1.8 miles NW of Brandy Point, there is a wharf in ruins. Close south of the ruined wharf lie two adjacent **ferry ramps**. The **ruins** of a sunken barge lie 0.13 mile SE of the wharf. Marked by a **buoy**, there is a least depth of 0.2 m over the wreck. A **wreck** is also charted 0.8 mile WNW of Brandy Point. **Caution** is advised.

7 **Facilities.** — A public launching **ramp** is located 100 m SE of the Westfield ferry ramps. Floating **wharves** are located nearby to facilitate the launching and landing of small vessels. A licensed restaurant is located 300 m down the highway toward Saint John. A grocery store and a hardware store are located close by in Grand Bay.

8 **Cable ferries** operate between **Westfield Beach**, south of the aforementioned wharf in ruins, and **Hardings Point**, on the opposite shore. *See* the caution in Chapter 1.

9 A telecommunications **tower**, marked by red and white bands and red lights, is situated on the south bank of the river, 0.4 mile NW of Westfield.

10 **Gregorys Point**, 0.5 mile north of Hardings Point, and directly opposite the mouth of the **Nerepis River**, slopes

SAINT JOHN RIVER — SAND POINT (2006)

gently to a low boulder point, but it is steep-to on the north side.

11 The Nerepis River enters the Saint John River between Lingley and **Woodmans Point**. The greater part of the approach to the Nerepis River is unnavigable, being very shoal with a thick growth of eel grass. A highway bridge spans the entrance to the Nerepis River. A depth of 1.5 m is reported under the centre span. Above the bridge the river divides into two channels, one following each shore, the west one being deeper and better.

12 The charted **light** at **Lingley**, on the SW bank of the Nerepis River, is a flashing highway stop and caution light. This light may be obscured by the trees along the river bank.

13 Woodmans Point, a low sandy point, is situated on the north side of the Nerepis River entrance. There are a number of cottages in this area.

14 **Long Reach**, about 15 miles in length, is the straight stretch of the river which extends from Woodmans Point to almost Evandale. Owing to the lee of the land, the east side of Long Reach is favored during southerly winds.

15 **Days Point** *(45°22'N, 66°13'W)* lies 0.4 mile north of Gregorys Point. There is a concrete wharf here extending 40 m from shore, 16 m across the outer face with depths of 1.2 to 2.4 m alongside. There are no berths on the sides of the wharf.

16 **Crystal Beach** is an excellent sand beach in the vicinity of the wharf. There is a camping ground and cabins, and supplies are available.

17 **Purdys Point**, 0.65 mile above Days Point, is a narrow treed sand point. Shoal water extends outward from it for a distance of 90 m where it makes a steep drop into deep water. A starboard hand light **buoy** J38 *(122.1)* marks the end of the spit.

18 **Belyeas Point**, on the opposite shore abreast of Purdys Point, has an excellent sand beach. Good shelter is available above or below the point, depending on the direction of the wind. Belyeas Point **light** *(122)* is shown at an elevation of 14 m from a white square tower on the end of the point.

19 A strong current is experienced in the vicinity of Belyeas Point especially on the ebb. When the wind opposes the ebb a steep chop develops.

SAINT JOHN RIVER — WESTFIELD (2006)

20 **Craigs Point**, 0.9 mile above Belyeas Point, is a long, narrow sand point that should be kept at least 0.1 mile clear of. There is good **anchorage** on the south side of the point; the north side gives good shelter from westerly winds.

21 **Carters Point**, on the eastern shore of the river 1.2 miles above Purdys Point, is low and composed of sand and fine gravel. Conspicuous open fields, the first of such along the river, are located above the point. They are visible from upstream and downstream. The wharf here, though above water, is in ruins, and the approach road is barricaded.

22 **Mill Cove** is a small open bight on the north side of Carters Point. The bottom of the bight is strewn with boulders and is not inviting to small craft. Beyond the bay, the shore is of boulders and gravel for 1.7 miles NE to **Bedford**, where there is an L-shaped concrete wharf that extends 50 m from shore. The L-end is 17 m long and 13 m wide, with a depth of 2.4 m along the outer face and 1.2 m along the south face of the L-end. There is little water on the south side of the main arm and only 0.9 m on the north side. The wharf is maintained by the *St. John River Society*. There are no facilities in the area.

23 **Holder Point**, 1.1 mile beyond Bedford, is the SW entrance point of Kimble Cove. There is an excellent sand beach here and the point is a popular camping ground.

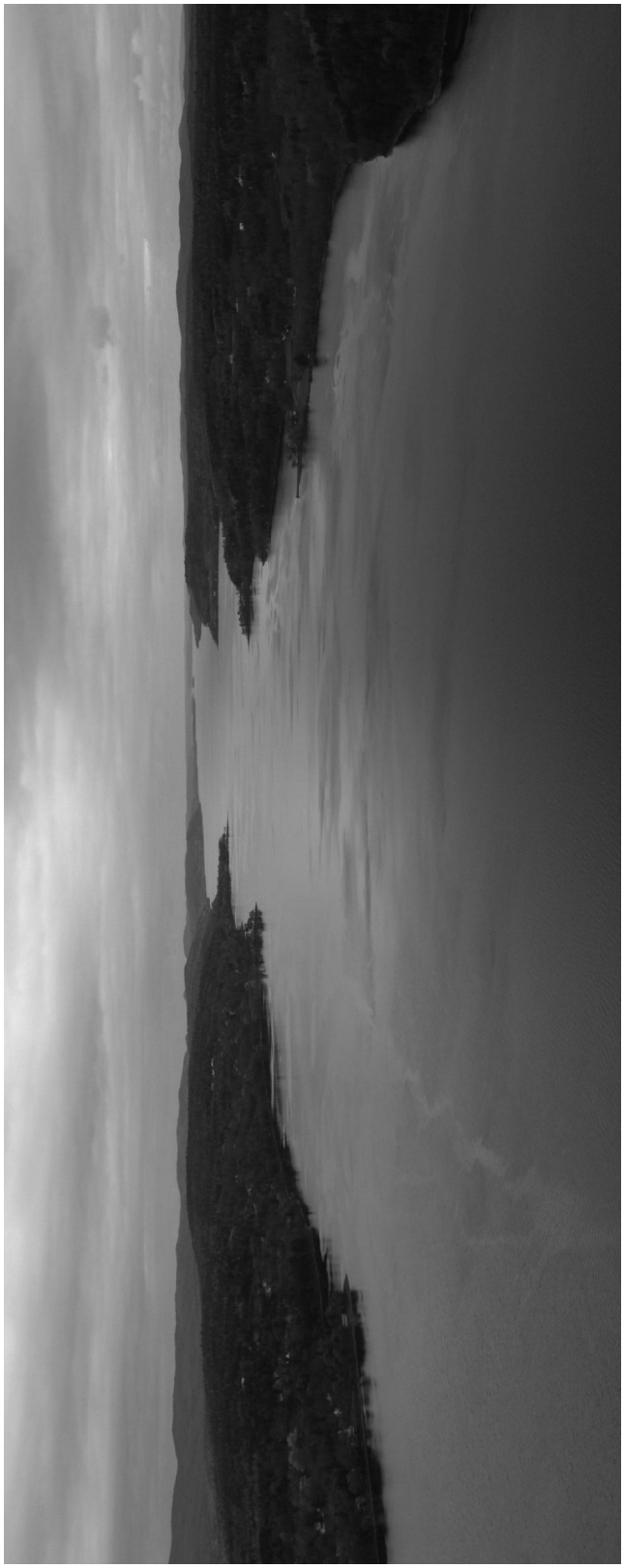
24 **Kimble Cove** is the small indentation between Holder Point and Beesleys Point. **Hendersons Brook** empties into the SE corner of the cove.

25 **Beesleys Point** *(45°27'N, 66°08'W)* is a sharp sand point with shoal water extending 152 m from it.

26 **Whites Bluff**, 0.7 mile NE of Beesleys Point, is a steep-to rock cliff. The shore between these two points is rugged and the bottom is irregular inside of the 5 m contour. At Whites Bluff a concrete wharf extends 107 m from

BELYEAS POINT LIGHT (2006)

SAINT JOHN RIVER — LONG REACH (2006)



shore and is 15 m wide. The main part of the wharf is in good repair but the remains of an L-end, partly submerged, lie on the SW side of the outer end. There is 4 m of water alongside the outer face, 2.4 m for the first 30 m on the NE side, and 1.8 m for the next 30 m. Once clear of the ruined L-end, there is 1.8 m of water for 15 m along the SW side. This wharf is maintained by the *St. John River Society*.

27 Boats should keep at least 15 m clear of the end when approaching the SW side to avoid the ruins mentioned above. There are no facilities in the area.

28 **Public Landing** is situated 1.1 miles above Craigs Point on the west side of the river. There is a good concrete wharf that extends 40 m from shore and is 15 m wide across the outer face. There is a depth of 2.7 m alongside the outer end, but there is no berth on each side. A church with spire is located 0.2 mile below the wharf. The wharf is maintained by the *St. John River Society*.

29 At **Victoria**, 1.8 miles NE of Public Landing, **Devils Back Brook** flows into the Saint John River. A highly visible highway bridge crosses the brook. Off the mouth of the brook, **Victoria Shoals**, which are triangular-shaped, extend 0.3 mile from shore; a port hand **buoy** is moored at the outer end.

30 At a distance of 0.7 mile above Victoria, the shore rises abruptly to a ridge, 90 m high, known as **Devils Back**.

31 A Public wharf is situated 2.9 miles above the Victoria Shoals near the village of **Browns Flat**. The wharf extends 46 m from the shore and is 21 m wide at the outer face. There is a depth of 3 m along the outer face, shoaling to 1.2 m, 7.6 m in along each side. A road leads

SAINT JOHN RIVER — CATONS ISLAND AND WHELPLEY COVE (2006)

0.5 mile to the village where gasoline, diesel and groceries are available.

32 **Beulah Camp**, the area surrounding the wharf, is a retreat on property owned by the *Wesleyan Church*. There are many summer cottages. A large tabernacle with a dome is situated just below the wharf.

33 **Collins Point** is 0.5 mile north of Browns Flat. Between it and Oak Point, 2.6 miles farther north, the river widens to 1.7 miles. There are three islands in this section of the river. The main channel passes east of them and becomes narrower.

34 Immediately NW of Collins Point is **Whelpley Cove**, formed by the change in direction of the shoreline.

35 **Catons Island** guards Whelpley Cove. A lodge is situated abreast of the sharp sand point on the west side of the island where there is a finger pier and landing. A monument on the west shore commemorates the establishment of the first European settlement in New Brunswick. The island is the site of the first religious service held on the Saint John River; it was by a Jesuit missionary in 1611. Catons Island is property of the *Wesleyan Church* in association with Beulah Camp, and operates as a youth ranch for people of all faiths. Facilities are available on request to boaters anchored in Whelpley Cove, including canoes, wind surfers, canteen, waterskiing and horseback riding.

36 A **submarine cable** runs between Catons Island and the mainland.

37 Whelpley Cove provides good **anchorage**, in heavy mud, protected from all winds. The water close to shore is reported to be overgrown with weeds. Whelpley Cove is a popular anchorage, but care must be taken to avoid the above-mentioned cable.

38 **Jones Creek** flows into the Saint John River, 1.3 miles NE of Whelpley Cove. The mouth of the creek, 0.26 mile wide, is closed except for a narrow passage. Small craft will find 1.8 m of water through this opening, under a railroad bridge. The waterway upstream of the bridge is overgrown with weeds and eel grass.

39 At **Glenwood**, between Whelpley Cove and Jones Creek, there are the ruins of a high and low water wharf. The high water section has an end made of wooden ties. It is 17 m long with a least depth of 0.9 m alongside. Underwater obstructions protrude from the low water section.

40 **Isle of Pines** and **Rocky Island**, joined by a narrow neck of intervale, lie abreast of the mouth of Jones Creek. Both islands are wooded.

41 The channel around Catons Island leads between that island and Rocky Island.

42 **Rush Island**, separated from Isle of Pines by a narrow channel, is 2 m high and marshy. The channel is not marked and is not recommended for passage.

SAINT JOHN RIVER — CHANNEL BETWEEN RUSH ISLAND AND ISLE OF PINES (2006)

43 **Whelpley Point** *(45°28'N, 66°06'W)*, on the eastern shore 0.7 mile north of the wharf at Whites Bluff, has an excellent sand beach. A **submarine power cable** crosses the river from a position near Whelpley Point to the opposite shore near Collins Point.

44 The wharf at **Long Reach**, 0.4 mile above Whelpley Point, has been dismantled. A stoney breakwater, 60 m long from the shore, protects a ramp, 3 m wide, on its east side.

45 **The Cedars**, 0.4 mile NE from Long Reach, is a popular summer place. The tall spire of the church is very **conspicuous**. A discontinued light tower, a white square structure at an elevation of 13 m, is situated near the shore to the NW of the church.

46 **MacDougall Point** lies 1.4 miles NE of The Cedars.

47 **Oak Point** *(45°30'N, 66°05'W)*, the site of a provincial park and campsite, is a narrow point situated 0.3 mile above Rush Island. There is good **anchorage** north of the point, sheltered from southerly winds. **Oak Point light** *(125)* is situated on the end of the point at the edge of the tree line and is shown at an elevation of 16 m from atop a white square structure.

48 An Anglican church with a white steeple is located on Oak Point. This church has historic significance as it was constructed on the site of a former one which dates back to the time when Captain Owen surveyed the river in 1846.

49 Boaters should give the beaches on Oak Point a wide berth as numerous bathers frequent the area.

50 During the ebb stream there is a strong flow running south abreast of Oak Point. When it runs against the wind a steep chop develops.

51 **Grassy Island**, 3 m high, is situated 0.5 mile NE of Oak Point. It is very low, flat and covered with grass. Its only visible feature is cattle that may be grazing on it during the summer months. An extensive shoal area extends south and east from the island. Eel grass is abundant in the shoal water. A channel, well **buoyed**, runs between Grassy Island and the west mainland. The eastern channel which leads from MacDougall Point is narrow and meandering.

52 An L-shaped pile of stones with an elevation of 0.6 m extends from the east shore almost to the 2 m contour, 0.4 mile ENE of the NE end of Grassy Island.

53 **Oak Point** village is situated 0.7 mile north of the point of that name. There is a

OAK POINT LIGHT (2006)

SAINT JOHN RIVER — CHANNEL BETWEEN OAK POINT AND GRASSY ISLAND (2006)

concrete high and low water wharf that extends 27 m from shore. The face is 32 m long, the northern 18 m being the low water section. There is a depth of 3.4 m alongside the face shoaling to 1.5 m, 7.6 m along the north side. The south side of the wharf is foul. **Oak Point Wharf light** *(126)* is shown at an elevation of 10.2 m from a skeleton tower on the south face of the wharf.

54 Lying on the western edge of the main channel between Oak Point and the village is a narrow bank, a channel leads between this bank and the shore.

OAK POINT WHARF (2006)

55 **Mistake Cove**, 0.7 mile above Oak Point wharf, is an elongated bay separated from the river by **Mistake Intervale**, a long narrow peninsula. Depths of 3 and 3.4 m, mud bottom, will be found along the NW side of the cove, extending to within 0.4 mile of its upper end. The shoal spit that extends from the lower end of the intervale is marked by a **buoy**.

56 **Gorhams Bluff** *(45°33'N, 66°02'W)*, situated 1.9 miles NE of Grassy Island, is the name applied to the head of the peninsula which lies between the river channel and Shampers Cove. The land rises abruptly from the shore to a height of 60 m, the river bank being very steep-to. Immediately south of the bluff there is an excellent sand beach. **Gorhams Bluff light** *(131.5)* is shown from a skeleton tower at an elevation of 7.8 m, situated close to the waters edge and surrounded by cedar trees. Abreast Gorhams Bluff there is a strong downstream current during the ebb flow.

57 **Hog Island**, 2 m high, lying 0.4 mile NE of Gorhams Bluff, is low intervale. Shoal water extends south from the island to the mainland.

58 **Pig Island**, 2 m high, situated less than 0.1 mile north of Hog Island, is a small grassy island. The channel between these islands leads to Belleisle Bay.

Belleisle Bay

59 **Belleisle Bay** runs NE for 9.6 miles along a valley. The terrain on each side, which rise to elevations of at least 90 m, is a mixture of forest and farmland.

MISTAKE COVE — APPROACH (2006)

BELLEISLE BAY — ENTRANCE (2006)

60 Parts of the shores are taken up by summer cottages. Numerous boat moorings lie offshore, and boats on passage should stay outside the 10 m contour in order to avoid these hazards. The shores are relatively steep-to with numerous sand beaches, and the only off-lying dangers are gravel spits. Kingston Creek, a tributary, is strewn with moored deadheads.

61 Belleisle Bay is entered through channel passing between Hog Island and Pig Island. The channel has a least

BELLEISLE BAY — KINGSTON CREEK (2006)

depth of 3.2 m, found 150 m north of Hog Island. The channel is marked by **buoys**.

62 A wide passage entering Belleisle Bay through Shampers Cove, between Gorhams Bluff and Hog Island, has been known to overgrow with weeds that trail on the surface. This passage is not suitable for navigation.

63 **Gorhams Creek**, 0.4 mile SE of Gorhams Bluff, is overgrown with weeds.

64 **Shampers Bluff**, a steep wooded neck of land between Shampers Cove and Kingston Creek, lying 1.1 miles east of Gorhams Bluff, is the south entrance point to Belleisle Bay proper.

65 **Kingston Creek**, surrounded by towering hills, is 2.6 miles long. Navigation beyond the charted 5 m contour is not recommended as numerous deadheads are situated throughout the remainder of the creek. The entrance points are comparatively steep-to. Good **anchorage** will be found in the usable portion of the creek.

66 **Anderson Point**, on the west shore 0.45 mile inward from the entrance point, extends 0.1 mile into the bay, the outer half being a sharp gravel spit.

67 *Belleisle Bay Marina*, having a floating dock with depths of 1.2 to 2.7 m alongside, is located about 1 mile east of Anderson Point on the opposite shore. There are several floating finger piers and moorings at this site. Gasoline, water, marine hardware and repairs, public telephone and canteen services are available.

68 **Ghost Island**, very distinct, wooded and having rocky sides, lies 1.4 miles NE of Anderson Point. A detached rock on its north side resembles the head of a man.

69 **Jenkins Cove** and **Urquharts Cove**, 1.3 miles NE of Ghost Island, offer good **anchorage** in mud, sheltered from all winds. An open field, visible from both coves, is located above the densely wooded tongue of land that separates the two coves. At the head of Jenkins Cove,

BELLEISLE BAY MARINA (2006)

BELLEISLE BAY — JENKINS COVE (2006)

BELLEISLE BAY — URQUHARTS COVE (2006)

BELLEISLE BAY — HATFIELD POINT (2006)

there is a large open farm. There is a narrow gravel beach at the head of Urquharts Cove.

70 **Erbs Cove** *(45°35'N, 65°56'W)*, on the east shore opposite Urquharts Cove, is open and of little use except as an **anchorage** in SW winds.

71 **Long Point**, 1.5 miles above Erbs Cove, is a long sand and gravel spit that extends into the bay. A starboard hand **buoy** is moored at the end of the spit.

72 A prominent hill, 130 m in elevation, is located 0.75 mile south of Long Point.

73 A **cable ferry** crosses the bay 0.2 mile above Long Point. The **lights** on the ferry ramps are fitted to the top of unpainted poles and are privately maintained. *See* the caution on cable ferries in Chapter 1.

74 **Greys Point** *(45°38'N, 65°51'W)*, on the NE shore, marks the end of unrestricted navigation. Rapid shoaling occurs west and north of the point.

75 A narrow, buoyed channel leads from Greys Point to a Public wharf at **Hatfield Point**. The channel is straight and steep-to, and is clearly defined by **buoys**.

76 The concrete wharf at Hatfield Point extends 30 m from shore and is 25 m across the outer end. There is a depth of 2.7 m alongside the outer face shoaling to 1.2 m, 7.6 m along each side.

77 There is a grocery store 150 m north of the wharf.

78 **Saint John River**. — **Tennants Cove** *(45°35'N, 66°00'W)* is a shallow indentation penetrating NE into the mainland. Shoal water, extending south from Palmer Point and north from Pig Island, narrows the entrance channel. A gravel bar with only 0.9 m of water over it extends from shore to shore 0.6 mile inward from the mouth, blocking access to the upper end of the cove which is too shallow for any use.

79 **Palmer Point**, the north entrance point of Tennants Cove, is low, and shoal water extending south from it is overgrown with eel grass. Close north of the point are the ruins of a low water wharf that extend out to a depth of 3 m.

Another wharf, 0.2 mile north of Palmer Point, has collapsed into disrepair.

80 **Nutter Creek**, on the west side of the river 0.9 mile north of Palmer Point, is a small marshy lake connected to the river by a narrow stream. The highway passes just west of the lake, between it and the cliff which is quite **conspicuous**.

Evandale to Jemseg River
(including Washademoak Lake)

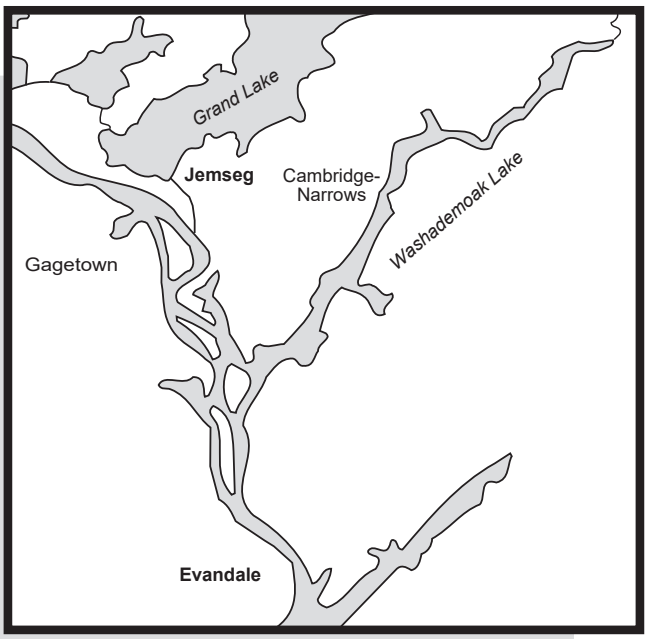


Chart 4142-1

1 There is a marked change in the topography bordering the river above Evandale. The riverbanks and the numerous islands that divide its course are low, and which flood at the time of spring freshet. Large deciduous trees fringe the shores almost hiding open grassland behind. There is a main channel along the river, but most of the secondary channels have sufficient depth for navigation.

2 When making passage, boats should keep close to mid-channel, as deadheads above and below the surface and sunken cribs, which are remnants of old log booms, may be encountered along the shores. Where these hazards are known to exist reference is made to their location.

3 **Evandale** *(45°36'N, 66°02'W)* lies on the west bank of the river. **Transmission lines**, with a vertical clearance of 32 m, cross the river 0.2 mile above Evandale. The towers have white strobe flashing **lights** that are very **conspicuous**. The top and base of each tower is also marked with fixed red **lights**. A **submarine cable** crosses the river at Evandale.

4 The wharf at Evandale has a face 20 m long and depths of 2.1 to 3.4 m alongside. A mooring platform with a depth of 3.4 m alongside extends 15 m above the wharf.

5 **Facility**. — A large inn with a licensed dining room and lounge is situated nearly on the approach road to the wharf.

6 A **cable ferry** crosses the river to **Kars** from a point close south of the wharf at Evandale. *See* the caution regarding cable ferries in Chapter 1.

7 **Spoon Island**, fringed by trees on the north and bushes on the south, is situated 1 mile above Evandale and divides the river into two channels. There is a lagoon in the interior of the island which is entered from the eastern channel opposite Gerow wharf. Shoal water extends off the NW end of the island, the rest of the island being comparatively steep-to.

8 The **Gerow** wharf is situated on the mainland shore abreast of the south part of Spoon Island. It is a low water wharf extending 20 m from shore. The outer face is 18 m long with a depth alongside of 3.7 m. There is no berth on the sides.

9 **Hampstead** *(45°38'N, 66°05'W)* is situated on the west bank of the river 3 miles above Evandale,

SAINT JOHN RIVER AT EVANDALE (2006)

abreast of the south end of Long Island. There is a concrete high and low water wharf extending 25 m from shore. The low water part, 15 m wide, has a depth of 2.4 m alongside.

SAINT JOHN RIVER — EVANDALE WHARF (2006)

The high water part, 13 m wide, is not useable; the concrete is in poor repair and crumbling.

10 The wharves at Gerow and Hampstead are maintained by the *St. John River Society*.

11 A **cable ferry** crosses the river from a point 0.1 mile south of the wharf at Hampstead. *See* the caution regarding cable ferries in Chapter 1. A **submarine cable** crosses the river at Hampstead.

12 **Doughnut Hill**, a **conspicuous** slope at an elevation of 120 m, is located 0.7 mile NW of Hampstead.

13 **Long Island**, low and fringed with trees along the NE shore, extends from Hampstead to Queenstown and divides the river into two channels. Two shallow lagoons on Long Island are entered from the west channel 2.2 and 3.1 miles above Hampstead. Large quantities of hay are grown on the island, which accounts for the number of barns.

14 **Little River** and **Palmer Creek** enter the west channel 0.4 mile north of Hampstead. Palmer Creek is overgrown, however, a channel about 15 m wide and 1.8 m deep runs 0.4 mile into Little River. The north side of the approach is overgrown with reeds while the south bank is lined with trees. The channel continues until the river bends north, away from the treed shore, at which point underwater obstructions block it.

15 **Queenstown**, 4 miles north of Hampstead and abreast the NW corner of Long Island, lies at the

WASHADEMOAK CREEK (2006)

entrance to Otnabog Lake. There is a concrete low water wharf that extends 27 m from the shore. The outer face is 15 m long, with a depth of 1.2 m, rock, mud and eel grass, alongside; there is no berth on the side. Sunken ruins of a high water wharf extend 3 m into the river at the north end of the wharf. The wharf is maintained by the *St. John River Society*.

16 **Otnabog Lake** is entered 0.1 mile above the wharf at Queenstown. A railroad bridge, with an opening 15 m wide and an overhead clearance of 6.5 m, spans the entrance. When entering the lake, boats should run parallel to the west shore to avoid shoal water that extends south of the east entrance point and then pass under the centre of the bridge. The channel inside the bridge is steep-to and lined with reeds. The two charted islets above the bridge are also covered with reeds and can only be distinguished because the reeds on them are taller and more dense. When abeam of the NW end of the inner islet, head towards **Picnic Point**, the western point on the north shore. The lake offers good **anchorage** in mud.

17 **Wickham** is situated on the east bank of the east channel, 1.2 miles above Hampstead. There is a concrete wharf that extends 40 m from the shore to an outer face 18 m long with depths of 1.8 to 3 m alongside. A launching ramp is situated on the south side of the wharf. The wharf is maintained by the *St. John River Society*.

18 **Facilities**. — There is a grocery store, with a gas pump, 300 m from the wharf.

19 **Lower Musquash Island** divides the east channel 2.4 miles above Wickham. **Washademoak Creek**, mostly fringed with trees, is the east arm of this division and leads to **Washademoak Lake**, 2 miles to the NE.

20 The shores of Lower Musquash Island are fringed with trees except for the southern tip which is covered with low bush. The greater part of the island is a shallow lagoon named **Musquash Lake**. The entrance channel, known locally as **The Hole In The Wall**, is situated on the west side of the island 0.3 mile from its south end. A small grassy islet is situated at the centre of the entrance. South of the islet the channel is shoal, but north of it the channel is well defined and has a least depth of 3 m. The entire channel east of the islet provides well sheltered **anchorage** with good holding ground. Along the south bank, trees and stumps allow for mooring, which give way to reeds as the lagoon is reached. Entering the lagoon is not recommended for any but the smallest of craft. A **current** of 1 to 1½ knot is said to run into Musquash Lake, and this will keep anchored vessels steady hence lowering the need for a large swinging area. It is recommended that all vessels be suitably lighted during overnight stays.

SAINT JOHN RIVER — CHANNEL INTO MUSQUASH LAKE (2006)

Washademoak Lake

21 **Washademoak Lake** is entered by way of a narrow, buoyed channel that leads between **Colwells Point** on the north and Hog Island on the south.

22 **Hog Island**, grassy and 2 m high, lies off the east end of Lower Musquash Island. A second narrow, unmarked channel bordered by eel grass enters Washademoak Lake south of Hog Island. Entering the lake by this channel is not recommended as two 90° turns at the north end, and steep-to sides combine to make passage difficult.

23 A discontinued light tower, a white square tower on piles, is situated on the east side of Lower Musquash Island. Another discontinued light, a white square tower, is on the north side of Washademoak Lake, almost 1.7 miles to the NNE.

24 The **buoyed** channel into Washademoak Lake runs through a heavy growth of eel grass. The shores of Washademoak Lake are of gravel and boulders. The surrounding countryside is mostly high and wooded. Summer cottages are not as abundant here as in other lakes that border the Saint John River.

25 In May and June **fish traps** are set around the shores and may extend out as far as 120 m. They may also have the shore end fastened to the Public wharves.

26 There is a concrete wharf at **MacDonalds Point** on the southern shore 0.7 mile NE of Hog Island. The wharf extends 30 m from shore and is 15 m across the outer end. There is a depth of 2.7 m alongside the outer end shoaling to 0.9 m, 7.5 m towards shore on the south side. The north side is foul.

Chart 4142-3

27 **Belyeas Cove** is situated 1.7 miles east of MacDonalds Point. It is one of the few areas of the lake where the surrounding hills are not heavily wooded; many scattered houses overlook the head of the cove. There is a concrete wharf *(Webster's Wharf)* that extends 40 m from the south shore. The outer end, 18 m across, has depths of 1.2 to 2.1 m alongside; there is no berth on the sides. East of the wharf, Belyeas Cove shoals rapidly. The wharf is maintained by the *St. John River Society*.

28 At **Central Cambridge** on the west shore opposite **Crafts Cove**, 1.3 miles north of Belyeas Cove, there is a concrete high and low water wharf *(Mott Wharf)*

WASHADEMOAK LAKE — CRAFTS COVE (2006)

that extends 35 m from shore to an outer end 21 m wide with depths of 1 to 2.1 m alongside. The sides of the wharf, near which lie concrete debris, are not suitable for a berth at low water.

29 A concrete wharf in ruins lies on the east shore, 1.1 miles NE of Central Cambridge wharf; a bollard remains as a useful landmark.

30 **Big Cove**, 3.5 miles NNE of Belyeas Cove, is a wide opening that is entered between **Appleby Point**, to the south, and **Barnes Point** to the east. Good **anchorage** in mud can be found in the NE side of the cove or close east of **The Bluff**, situated midway along the SW shore.

31 **Pine Island**, treed and distinct, lies in the centre of Big Cove 0.4 mile within the entrance. **Birch Island** lies in the centre of the cove SE of The Bluff, and it appears attached to the shore. When entering the cove, care must be taken to stay closer to the NE shore than to Pine Island in order to avoid shoal water west and NW of Pine Island. The water around Birch Island is overgrown with eel grass.

32 The settlement of **McDonald Corner** is situated on the west shore opposite Big Cove. A concrete high and low water wharf at McDonald Corner extends 70 m from shore and is 15 m wide. The outer end and both sides of the wharf are in disrepair and are not suitable for use.

33 **Loon Point**, separated from the mainland by a neck of drying gravel, is situated 0.5 mile NE of the wharf at McDonald Corner. The point is wooded and its sloping tree tops make a good landmark from both directions along the lake.

34 Off Loon Point and **Jones Point**, a sand spit 0.2 mile NE, the water inside the 1.8 m line is foul.

35 At **Cambridge-Narrows**, the lake is spanned by a bridge which has a vertical clearance of 13 m. Red and green **lights** are shown from the bridge to mark the navigable channel. There is good **anchorage** to the south of the bridge.

36 Cambridge-Narrows has a concrete Public wharf south of the bridge on the west bank. It extends 50 m from shore and is 23 m wide. There is a depth alongside the outer end of 1.5 m. There is no berth along the sides. Several floating piers are placed in the vicinity of the wharf during summer. A concrete launching ramp is situated close north of the wharf, while there is a mooring field in the cove to the west of the wharf. The village of Cambridge-Narrows had a population of 717 in 2006.

37 **Facilities**. — A public telephone, gasoline, groceries and a limited supply of hardware are available 300 m west of the wharf. This store is open until 1300 hours on Tuesdays. An inn, with licensed dining, is operated next to this store.

38 Gasoline, diesel, and provisions are available on the east side of Cambridge-Narrows, 0.5 mile from the bridge. This store also operates as a provincial government liquor outlet.

WASHADEMOAK LAKE — BIG COVE (2006)

39 Although the lake is much shoaler north of the bridge, it remains free of obstructions as far north as **Fowlers Cove** on the west bank, 2 miles north of the bridge. At this point, a narrow buoyed channel continues as far as Coles Island, 7.9 miles farther along the lake.

40 **Picketts Cove**, 1.3 miles NE of Fowlers Cove, is a good **anchorage** in mud for shallow draft boats.

41 The channel to Coles Island is **buoyed** and should be carefully followed from its entrance off Fowlers Cove. The sides of the channel are steep-to and are bordered by very shoal water.

WASHADEMOAK LAKE — VILLAGE OF CAMBRIDGE-NARROWS (2006)

42 The closest approach to the north shore is made 0.7 mile east of Picketts Cove, and as it returns to the south shore, the channel runs through a heavy growth of grass. **Fanjoys Point**, 2.9 miles above Picketts Cove, is a string of bush and tree-covered islets along the north side. **The Bluff**, opposite Fanjoys Point, rises precipitously in layered rock above a paved road. Between Fanjoys Point and **Richardsons Cove**, 2.1 miles NE, the channel is bordered by eel grass.

43 A bridge once spanned the channel close west of Richardsons Cove. The north side abutment is concrete and prominent. The south abutment has collapsed and is overgrown with trees; it dries at its outer end. In this area the mid-channel should be followed.

44 Eel grass borders the channel 1.5 miles farther to **Long Creek** on the south shore. Long Creek is entered north of a tree and bush covered islet. A narrow channel, with a least depth of 0.9 m, runs east between weed growth into Long Creek. A covered bridge, with a clearance of 4 m, crosses the mouth of the creek.

45 North of Long Creek, the main channel is bordered by trees and bushes, and continues 0.9 mile to **Coles Island**, where it divides into two arms.

46 The west arm is shoal at its north end and shoaling begins when the highway bridge becomes visible.

47 The east arm leads to the southern bridge which becomes visible when abreast of the south end of Coles Island. The bridge clearance is 6.4 m and the centre pier may be passed on either side.

48 The river beyond the bridge is not surveyed, but boats may proceed 0.9 mile further to where a shoal bar crosses the river.

49 **Facilities**. — A grocery store with gasoline, diesel and a telephone is located between the two bridges, on the north side of the highway running through Coles Island.

Chart 4142-1

50 **Colwells Creek**, lined with trees, is the channel between **Colwells Point** *(45°03'N, 66°04'W)* and Killaboy Island, 1.2 miles to the NW.

51 *Colwells Wharf* is situated on the east shore of the creek, 0.8 mile NW of Colwells Point. The wharf extends 46 m from shore and is 9 m long and 13 m wide at the outer end. There is a depth of 2.4 m along the outer end, and 1.5 m on the sides. A launching ramp is situated on the north side of the wharf. This wharf is maintained by the *St. John River Society*.

52 **Foshay Lake** is entered from Colwells Creek 0.95 mile NW of Colwells Point. The 2.2 mile channel leading to the lake is entered between grassy points. A tree-covered islet off the west entrance point is **conspicuous**. Shoal water runs from the islet to the west entrance point and extends south into Colwells Creek.

53 Inside the channel, the shores are fringed with trees for about 0.7 mile. Beyond the trees, the west side of the channel is bordered by weeds and shoal water which bar access to a lagoon that must be entered from Lawson Passage.

54 There is a sharp bend in the channel 1.6 miles from its entrance. A clump of trees, visible from the lake, is situated on the west shore at the point where the channel returns to a north direction. The lake is very shallow with a narrow channel running down its centre as far south as the above-mentioned trees. Good **anchorage** in mud will be found anywhere in this channel.

55 **Directions**. — Midway between the wharf in Colwells Creek and the islet off the west entrance point, the channel lies 30 m off the east shore. Remain this distance off until abreast of the south end of the trees on the west bank. North of this point the channel runs in midstream as far as the sharp bend in the channel. On the north half of the bend the channel lies closer to the east side, returning to midstream north of the bend.

56 **Killaboy Island** lies off the north tip of Lower Musquash Island where Colwells Creek meets Lawson Passage.

57 **Upper Musquash Island** is low grassland fringed by large deciduous trees and separates Lawson Passage from the main river channel. The channel north of Killaboy Island is marked by **buoys** for making a passage from the Saint John River main channel, between Upper Musquash and Lower Musquash Islands, and into Colwells Creek and Washademoak Lake. A charted **wreck** is located in the main river channel, on the SW side of Upper Musquash Island. **Caution** is advised.

58 Shallow water lies mid-stream in **Lawson Passage**, which passage should only be with local knowledge.

59 At **McAlpines**, abreast of the south end of Upper Musquash Island on the west bank of the main river channel, there is a concrete wharf in disrepair. The wharf extends 23 m from shore and is 17 m wide at the outer end. This wharf is not suitable for use.

60 At **Lower Gagetown**, abreast of the NW end of Upper Musquash Island, on the west bank of the main river channel, there is a concrete wharf. Known as *Fox Wharf*, it extends 25 m from shore and is 16 m wide at the outer end. There is a depth of 2.4 m alongside the outer end and no berth on the sides. The deck of the wharf is partially overgrown; there are no facilities nearby.

61 **Conspicuous object**. — A black chimney 27 m high, surmounted by a square spark arrester, is situated on the mainland about 1.2 miles north of Lower Gagetown.

GAGETOWN CREEK — ENTRANCE FROM THE SOUTH (2006)

VILLAGE OF GAGETOWN (2006)

Gagetown

62 **Gagetown Island** lies 1.2 miles north of Upper Musquash Island and divides the river into two channels. The main channel passes east of Gagetown Island. **Gagetown Creek** passes on the west side.

63 **Gagetown light** *(135)* is situated on the west bank of the river, 0.2 mile south of the island at the inshore end of a ramp from where a **cable ferry** crosses the river to **Scovil**. The light is shown at an elevation of 12 m from a white square tower. *See* the caution regarding cable ferries in Chapter 1. Ruins of a wharf, with large slabs of submerged concrete, lie close north of the ferry ramp at Scovil.

64 Two **submarine cables** cross the river close south of the ferry ramp.

65 The shores of Gagetown Creek are grassy, with weed growth in the shoal water along the banks. The village of **Gagetown**, Shiretown of Queen's County, population 719 in 2006, lies on the west bank of the creek.

66 The area, when under French control, had been granted in 1691 to Marie Soulanges, the widow of the Governor of Acadia. The small Acadian settlement, then known as Grimross (a Malecite word meaning place of settlement), became a prosperous farming, lumber and fur trading community. It had remained so until 1758, when British forces led by Colonel Robert Monckton brought Grimross under English jurisdiction.

67 This land under the name *Township of Gage* was granted in 1765 to a group called the St. John's River Society. One of its members, General Thomas Gage, later became commander in chief of British forces in North America. Although General Gage had never lived there and had sold out his interest in the settlement a few years later, it is from him that the village takes its name.

68 Gagetown flourished upon the arrival of the United Empire Loyalists in 1783, and quickly became the most important community between Fredericton and Saint John. The effects of early planning are evident as several original homes still exist. It is often said that time has by-passed the community. Gagetown is a quiet village and is the site of many

GAGETOWN CREEK — MOUNT CREEK (2006)

SAINT JOHN RIVER — GRIMROSS CANAL (2006)

well established craft studios, one of which is housed in the Saint John River valley's oldest surviving building. A county museum is located on the main street.

69 A concrete high and low water wharf extending 11 m from shore is located in the village 0.9 mile north of Gagetown light. The high water face, the north part, is 15 m long and the low water face is 19 m long. Both have a depth of 1.5 m alongside. There is no berth on the sides. This Public wharf is leased to Gagetown Marina.

70 **Facilities**. — *Gagetown Marina* has a floating dock with a reported depth of 3 m alongside. The following are available: overnight mooring, showers, laundry, gasoline, diesel, propane, fresh water, sewage pumpout, ice, groceries and hardware. Provisions are available at a grocery store near the marina; this store also operates as a provincial government liquor outlet. The marina monitors VHF channel 68.

71 Mooring buoys line both sides of Gagetown Creek in the vicinity of the marina.

72 The village has a post office, bank and numerous arts and crafts stores. A launching ramp is situated close to the Public wharf.

73 **Mount Creek**, on Gagetown Island, is entered 1.5 miles north of Gagetown light. It is navigable during high water levels; at all other times it is available only to the smallest of craft. The creek has been described as being so narrow that the branches from trees on each bank form a canopy over it. There is secure **anchorage** within the creek. The ruins of **Mount House** lie off the south bank of the creek. The creek is navigable to within 180 m of its head, to a spring located at the bottom of a slope leading down from Mount House. Mount House, believed to have been built between 1807 and 1811, is located on the hightest portion of Gagetown Island, which owing to spring flooding, remains a "mount" above higher water levels.

74 The part of Gagetown Island to the south of Mount Creek is a wildlife refuge operated under the provisions of the New Brunswick Fish and Wildlife Act. This area is known as the *Mount Ararat Wildlife Management Area*.

75 **Dingee Marsh**, **Deveber Point** and **Dingee Point** lie 0.3, 0.4 and 0.7 mile respectively north of Mount Creek. Between Deveber and Dingee Points the west half of Gagetown Creek is shoal.

76 **Harts Lake** lies at the north end of Gagetown Creek. A railway bridge with an overhead clearance of 6.4 m crosses the entrance. The bridge has two concrete piers, one close to each shore, and a distance of 26 m between them.

77 **Oak Island** is a wooded point, backed by marshland, in the centre of the north shore of Harts Lake. **McAllisters Island** lies at the south end of Harts Lake and is also backed by marshland.

78 The east and west shores of Harts Lake are wooded. A narrow twisting channel through shoal water overgrown with grass and weeds runs from the bridge to the lake. A least depth of 1.5 m can be carried through the channel and into the lake.

79 A strong **current** can be encountered under the bridge. When the current is running into the lake, care must be taken to avoid being set into shoal water extending across the entrance from the east bank.

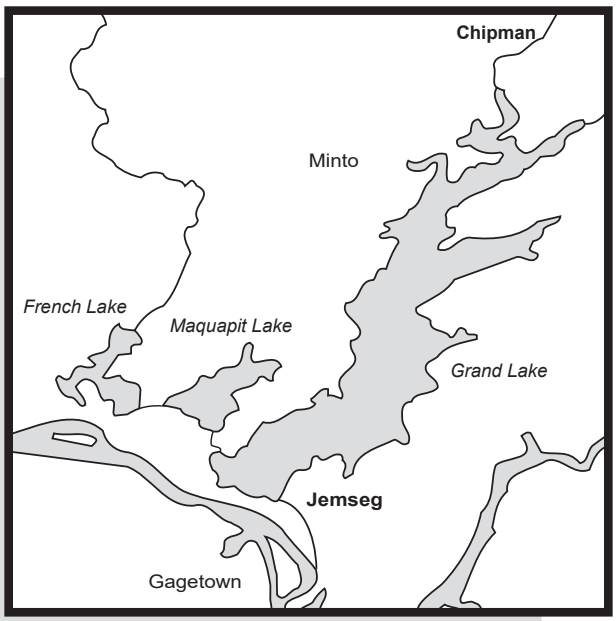
80 **Directions**. — After passing under the bridge, boats must turn hard to starboard when the south side of the railway embankment comes abeam to starboard. By heading for the centre of a treed area between Oak Island and the bridge, boats will remain in the channel and get clear of any current running under the bridge. The channel inside the lake may be staked by local boaters, if not, attempting to locate the twisting channel is not recommended.

81 **Grimross Canal** has been cut through **Grimross Neck**, the north part of Gagetown Island, to connect the upper end of Gagetown Creek to the main river. The channel parallels the west bank. Shoal water caused by erosion extends from the north end of Grimross Neck and forms the east side of the channel.

82 The canal was completed in 1864 to provide direct access to Gagetown from upstream, rather than having to navigate entirely around Gagetown Island, a saving in distance of a few miles.

Grand Lake, Maquapit Lake, French Lake and Indian Lake (Jemseg River and Salmon River)

Chart 4142-1



1 **Jemseg River** connects Grand Lake to the Saint John River, entering the Saint John through two channels east of Gagetown Island. Three islands separated by shoal water and marshland lie between these channels.

2 **Nevers Island**, the southernmost and largest of these islands, is fringed by deciduous trees, except for the southern tip which is low and grassy.

3 The channel between Nevers Island and Huestis Island is the main entrance into Jemseg River.

4 **Lower Jemseg light** *(136)* is situated SE of the south end of Nevers Island, on **Huestis Island**, and marks the entrance to the Jemseg River. It is shown at an elevation of 8.7 m from a tower with a red and white triangular daymarks. Ruins of a wharf lie 0.5 mile NE of Lower Jemseg light on the east bank.

5 **Raft Channel** is entered between an extensive patch of weed growth that runs NW from Nevers Island, and weed growth that extends from the shore of **Jemseg Flats**, the low marshland that separates the Saint John and Jemseg Rivers. A **wreck** is charted in the main river channel close south of Jemseg Flats, 0.5 mile WSW of the entrance to Raft Channel; **caution** is advised.

6 Silting has occurred in Raft Channel and also in the shoal area extending north from Nevers Island. Raft Channel should only be navigated by those having local knowledge. A wide clearance should be made if rounding the unnamed island north of Nevers Island.

7 **Dykeman Lake** lies close east of the river, it is shallow and empties into the river through a narrow channel east of Dykeman Shoals.

8 A **submarine cable** crosses Jemseg River 0.9 mile above Dykeman Shoals.

9 **Bridges**. — The Trans-Canada Highway crosses the Jemseg River at **Jemseg**. The south bridge has an overhead clearance of 24 m and the north bridge an overhead clearance of 23 m.

JEMSEG RIVER AT JEMSEG (2006)

Grand Lake

Chart 4142-4

10 **Grand Lake** is the largest lake in New Brunswick. The south end of the lake is shallow and the shore, particularly west of the entrance, is low and marshy. The shores of the lake are generally featureless, being wooded and rising to nearly equal elevations, except at the low south end. Many summer cottages and campgrounds are located along the shores of Grand Lake.

11 Grand Lake is subject to heavy squalls which can generate choppy waters with little warning. At times, the wind in the centre of the lake may be quite strong but not always apparent along the shores. The normal water flow is out of the lake by way of the Jemseg River. A SW wind blowing across the low marshland south of the lake builds up a steep chop as it opposes this flow. A north wind makes the lake very rough in the shoal water at the southern entrance. There are excellent anchorages available in most of the numerous bays which indent the shore. It is recommended that canoes and small boats follow the shoreline depending on wind direction.

12 **Conspicuous features**. — Aluminum-topped farm buildings on Cumberland Point *(45°58'N, 66°00'W)*, and a red and white horizontally banded chimney at Newcastle Creek *(46°03'N, 66°00'W)*, are visible over most of the lake.

13 Grand Lake is entered from the Jemseg River by way of a natural channel running through the shoal water at the south end of the lake. The shoreline south of this channel is low and marshy and offers no distinguishable features. The channel into the lake is well **buoyed** and leads to the centre of the lake well clear of shoal water. The central section of the channel is only **buoyed** on one side. These must be carefully followed as this part of the channel is very narrow.

14 **Grassy Point**, the north entrance point of the Jemseg River into Grand Lake, is low and marshy. **Purdy Shoals**, extending north from Grassy Point, border the entrance channel on the east. The shore from Grassy Point to Dykeman Cove, 1.8 miles NE, is low with a shingle beach.

15 **Robertson Point**, low and wooded, forms the north shore of **Dykeman Cove**. **Robertson Point light** *(137)* is shown at an elevation of 12.3 m from a white cylindrical tower on the outer end of the point. Only the top half of the tower shows above the trees around the light.

16 **Taylor Point**, the west entrance point of **Whites Cove**, lies 1 mile east of Robertson Point. Midway between these two points a sandstone cliff formation stands out from the surrounding shore because of its colour. Whites Cove lies between Taylor Point and **Ferris Point**, 0.7 mile east. The cove affords good **anchorage**, in mud, and

boats are moored off summer homes around the shores. In the centre of the eastern shore there is a wharf in ruins. The south end of the cove is nearly closed off by a point extending from the east shore which continues across the cove as a bar with a depth of 0.9 m over it. A depth of 1.5 m over mud will be found in the NW corner of the inner cove.

17 **Mill Cove** lies 1.8 miles east of Ferris Point. The shore of the cove is of sand and gravel. The settlement at Mill Cove is **conspicuous**.

18 **Fanjoys Point** *(45°59'N, 66°01'W)*, 1.5 miles north of Mill Cove, is a low gravel point, wooded to the beach. **Fanjoys Point light** *(140)* is shown at an elevation of 12.2 m from a cylindrical tower, 7 m high, the top third being red, the remainder white. The light is situated on the edge of the treeline and cannot be seen SE of a line joining it to Robertson Point.

19 An unnamed cove lies between Fanjoys Point and **Branscombe Point**, 0.4 mile east. A concrete wharf extends 55 m from the shore at **Waterborough** in the SE part of the cove. The outer end, 20 m wide, has a depth of 1.5 m alongside, however an obstruction at a depth of 0.9 m lies about 0.6 m off the middle of the face. The east face of the wharf is foul, but a depth of 1.5 m can be carried 6.5 m from the outer end on the west side. The outer end of this wharf is awash with strong north winds. The cove to the west of the wharf is a popular swimming area.

20 **Wiggins Point**, a long and narrow point that extends from red sandstone cliffs, is the north entrance point to **Wiggins Cove**, 1.3 miles NE of Fanjoys Point.

21 **Youngs Cove** lies 3 miles NE of Fanjoys Point and is entered between **Dickson Bluff** and **Redbank Point**. There is good **anchorage**, in mud, in the eastern half of the cove. A large white church is located on the south shore of the anchorage area. Redbank Point is a high red bank that stands out prominently.

22 **Holmes Lump** lies off Dickson Bluff abreast of a grassy field easily identifiable on the wooded shore.

23 A concrete wharf extends 50 m from the south shore of Youngs Cove. The outer end, 15 m wide, has collapsed. The entire wharf is not usable. A shingle beach extends along the shore west of the wharf.

24 **Cumberland Point** *(45°58'N, 66°00'W)* is the midpoint on the east shore of Grand Lake. **Conspicuous** aluminum-topped farm buildings, situated about 0.3 mile east of the point, makes it easily identifiable over most of the lake.

25 **Cumberland Bay** is entered north of Cumberland Point; two coves at the inner end of the bay afford good **anchorage** in mud. A small cove, 3.1 miles

GRAND LAKE AT COX POINT (2006)

GRAND LAKE AT DOUGLAS HARBOUR (2006)

NE of Cumberland Point, offers a good **anchorage** in 3 m midway along its length opposite a cottage on the east shore.

26 **Overhead power cables**, with a vertical clearance of 7.9 m, cross an inlet on the south side of Cumberland Bay about 3.6 miles NE of Cumberland Point.

27 **Cox Point** is the extremity of a neck of land that separates Cumberland Bay and Northeast Arm. The west end of the point is wooded while the south side is low and marshy. **Cox Point light** *(141)* is shown at an elevation of 9.4 m, from a mast on a concrete pier, with a red and white banded slatwork daymark. **Barton Cove** lies north of Cox Point on the east side.

28 **West shore Grand Lake**. — **Douglas Harbour** *(45°55'N, 66°06'W)*, 3.9 miles NE of the entrance to the Jemseg River, is the most important harbour on Grand Lake. It is entered between **Earles Meadows** to the east and an unnamed point to the west, off which port hand light **buoy** EN1 *(138)* is moored. The harbour divides into three arms: the western arm is blocked at the entrance by a bar with depths of 0.3 to 0.6 m, and the northern arm leads to an inner harbour. The eastern arm, known as **The Bedroom**, is regarded as the prime **anchorage** on the entire Saint John River system. The holding ground is excellent, brown mud and light gravel. A marker, placed by local boaters, is moored at the outer end of foul ground that extends from the SW point of the island on the north side of The Bedroom; it should be passed on its south side.

29 The concrete wharf at the head of Douglas Harbour is the private property of the *Fredericton Yacht Club*. The wharf extends 43 m from the NW part of the inner harbour. The outer end is L-shaped, 20 m long with a depth of 2.4 m at the outer face, and 18 m wide with depths of 2.7 m, shoaling to 1.5 m along the side. The NE side of the wharf is divided into a high and low water section, the high water section being closer to shore. There is a depth of 2.7 m along the low water face, shoaling rapidly along the high water part.

30 Launching, haul-out, or storage of boats is not permitted on the wharf. A short-term tie-up is permitted provided that boats be not be left unattended.

31 Several moorings are placed throughout the harbour, most of which are anchored in The Bedroom.

32 A sand bar, elevation 1.5 m, south of the wharf forms a small cove which is popular to boaters. Due to the lack of space in the cove, boats are usually grounded forward with an anchor embedded in the bar.

33 **Facilities**. — A public telephone, water, groceries and supplies are all available near the wharf. Gasoline, oil, propane, supplies and a laundromat are located on the main road 0.25 mile east of the wharf.

34 **Grand Point Bar** lies 0.9 mile east of Douglas Harbour. The outer extremity of the bar is marked by south cardinal light **buoy** EAB *(139)*. North of **Grand Point** as far as Stony Point, the shore is mostly taken up with summer cottages.

GRAND LAKE AT BARTON COVE (2006)

35 **Palmer Point** is a low gravel point 1.5 miles north of Grand Point. A concrete launching ramp that extends to a depth of 0.9 m is located 1.3 miles NW of Palmer Point. A swimming area lies to the south of this ramp.

36 **Pops Point** is a low sand and gravel point, 1.1 miles north of Palmer Point.

37 **Sypher Cove** lies 1.8 miles north of Pops Point.

38 **Stony Point**, 3.1 miles north of Pops Point, is a low rock and boulder point joined to the mainland by a narrow spit. A clump of trees stands out prominently near its centre.

39 **Goat Island** *(46°01'N, 66°01'W)*, with an elevation of 4 m, lies midway between Stony Point and Cox Point on the eastern shore. The island is composed of stones and shingle and has a growth of trees and low bush in its centre. A gravel bar strewn with boulders extends from the mainland shore to within 0.1 mile of the island's NW tip. A narrow, but unmarked channel between the bar and shoal water off the island has a least depth of 2 m. This channel is not recommended. Shoal water surrounds the island and an isolated boulder lies 0.15 mile SW of the island. Port hand light **buoy** E75 *(139.75)* is moored to the east of Goat Island.

40 **Barton Point**, 1.1 miles north of Cox Point, is the south entrance point to **Northeast Arm**, the northern portion of Grand Lake.

41 **Flowers Cove**, 1.5 miles NW of Cox Point, is divided into two arms. The north shore of the outer portion is backed by prominent brown slag hills from an open-face coal mining operation. The inner portions of both arms are lined with trees and provide excellent shelter. Many summer cottages are located on the shores of the south arm. An **overhead power cable** with a vertical clearance of 16 m crosses the entrance to the inner part of this arm.

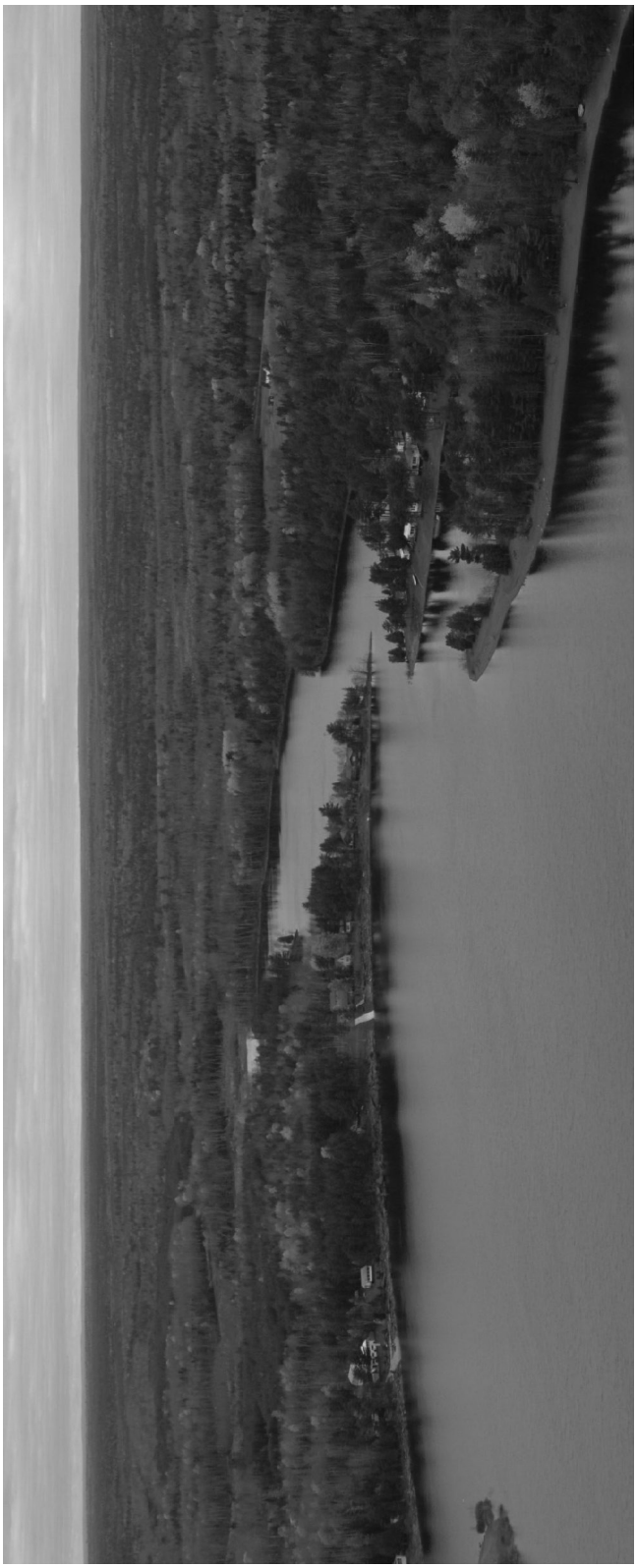
42 **Caution** should be exercised in the approach to the north arm of Flowers Cove. A spit of small boulders, the outer end marked by **buoys**, runs north from the south entrance point. A depth of 3 m lies at the outer end of this spit.

43 **Printz Cove**, which lies midway between Flowers Cove and Robinson Point, has two arms. The south arm is separated from Grand Lake by a low gravel spit. There is a depth of 2.4 m in the entrance, extending into the north arm until abreast of the west shore of the south arm, at which point rapid shoaling occurs. The south arm is shoal on the west side, however a depth of 1.8 m can be found for one third its width off the east shore. This depth can be carried until abreast of a pile of stones on the west shore. The cove is narrow but snug.

44 **Robinson Point** is situated 0.4 mile NW of Printz Cove. A low boulder spit extends out from the point; it is marked by a **buoy**.

45 The settlement of **Newcastle Creek**, along the west shore of **Newcastle Bay**, 0.7 mile north of Robinson Point, is the site of a power generating station on **McMann Point**.

GRAND LAKE — FLOWERS COVE (SOUTH PORTION) (2006)



GRAND LAKE — FLOWERS COVE (NORTH PORTION) (2006)

GRAND LAKE AT NEWCASTLE CREEK (2006)

46 The red and white banded chimney fitted with fixed red aircraft obstruction lights is the most **conspicuous** feature on Grand Lake. Two rock piers extend east of McMann Point, the southern one extending 120 m from shore, the northern one 46 m, both with an elevation of 0.3 m. A fixed red **light**, privately maintained, is shown from a pole on the outer end of the southern pier.

47 A concrete wharf which extends 40 m from shore, 18 m wide, is located in the centre of the small cove south of McMann Point. There is a depth of 3 m alongside the outer end, shoaling to 1.2 m halfway towards shore. The wharf is maintained by the *Grand Lake Boaters Club*. Several floating piers are laid in the cove from the concrete wharf. Visitors are welcome.

48 **Facilities**. — A public telephone is located on the approach road to the wharf. A hospital is located in the village of **Minto**, population 2,681 in 2006, 4 miles distant, along with, diesel, hardware, groceries, and a liquor store.

49 **Obstructions**. — Wooden posts cemented into anchor blocks lie in the cove north of a line running from the wharf to the above-mentioned private light. Boats approaching the wharf should use the north face of the wharf as a clearing line, staying to the south. An **overhead cable** crosses a small cove close north of the wharf; it is marked by a red sphere midway along its length.

50 A highway bridge and causeway crosses Newcastle Creek 1.3 miles north of the settlement. The bridge portion, with an overhead clearance of 5.2 m, is located on the north end of the crossing. Inside the bridge the water is shoal, and boats passing under the bridge must use the south span, as the north span is very shoal.

51 **Submarine cable**. — A telephone cable is laid across a small cove on the east side of the Newcastle Bay, 0.5 mile below the above-mentioned bridge.

52 **Bailey Point**, a low gravel and boulder point backed by bushes, separates Newcastle Bay from Northeast Arm.

53 **Northeast Arm**, the north part of Grand Lake, leads to the Salmon River and the village of Chipman.

54 **Barton Island**, with an elevation of 2 m, is a low gravel island on which a few bushes grow. It is connected to the SE shore of Northeast Arm by a shoal spit. There is good **anchorage** in mud in the NE half of Northeast Arm above Barton Island.

SALMON RIVER — ENTRANCE (2006)

55 **Salmon Bay and River**. — Salmon Bay is entered from Northeast Arm between **Indian Point** and **Hawkes Point** *(46°05'N, 65°55'W)*.

56 **Hawkes Point light** *(141.5)* is shown at an elevation of 7.6 m from a red and white banded cylindrical tower. The light structure is not conspicuous as it is situated among bushes and is backed by trees. When passing Barton Island the light structure is seen as a thin white line situated midway between a group of summer cottages NW of Hawkes Point and the point itself.

57 **Moray Point**, which lies 1.4 miles NW of Hawkes Point, is the south entrance point to the **Salmon River**. An extensive shoal area lies SW of the point.

58 Between Hawkes Point and Moray Point, slag heaps from open-face coal mining operations are **conspicuous**. Open-face coal mining is carried out along both banks of the Salmon River for 1.8 miles above its mouth.

59 The main body of Salmon Bay lies west of Moray Point. A small island with an elevation of 1 m lies near the centre of Salmon Bay. A narrow channel branches west off Moray Point to pass north and west of the island. Good **anchorage** in mud can be found in this channel.

60 Two **overhead power cables** cross Salmon River 1.1 miles above Moray Point, the minimum vertical clearance is 25 m.

61 A long, grassy shoal spit that separates **Long Creek** and Salmon River extends 0.1 mile south of the above-mentioned power lines.

62 Long Creek is crossed by a rock and gravel causeway, 0.6 m in elevation, 0.7 mile inside the entrance. The creek affords good **anchorage** in mud. Boats entering Long Creek should remain 90 m off the east bank of Salmon River until under the overhead power cables. North of the cables the channel leads midway between both shores. When the causeway is seen, follow the east shore.

63 An **overhead power cable** with a vertical clearance of 16 m crosses the river 1.8 miles above Long Creek. **Iron Bound Cove**, on the west bank, lies close north of the power line. The cove is shoal and for the most part overgrown with weeds.

64 **Camp Wegesegum**, on the east bank, lies 0.9 mile above Iron Bound Cove. A private pier has a depth of 3.7 m alongside.

65 **McLure Shoal** lies in midstream 0.9 mile above Camp Wegesegum. The shoal divides the river into two

SALMON RIVER AT CHIPMAN (2006)

channels. The north channel is buoyed. The south channel is deeper, but 150 m above McLure Shoal another shoal spot lies 75 m off the east bank.

66 **Curley Island** and a larger unnamed island narrow the river 0.7 mile above McLure Shoal. The channel passes west of the islands. The southern and larger of the two islands is grassy with an elevation of 2 m and a few trees lie on the north half of the island. Curley Island, with an elevation of 2 m, is grassy with a few bushes growing on it. Shoal water and weeds lie between these islands and the eastern shore.

67 North of Curley Island the channel follows the western shore at about the same distance off as when passing Curley Island.

68 The channel remains narrow at **Davis Turn**, 0.4 mile below **Chipman**. On the west bank grass and shoal water extend 60 m into the river; the channel leads close to the edge of this shoal water.

69 **Sunken cribs. — Bridge piers**. — Between Davis Turn and the five equally spaced bridge piers farther upstream, four sunken cribs with a maximum elevation of 0.3 m lie west of midstream. A fifth sunken crib lies off the east bank 260 m below the above piers. There is a single bridge pier in midstream 60 m down the river from the highway bridge. Navigation beyond the single bridge pier is not recommended as the river is shoal and strewn with underwater obstructions.

70 The village of **Chipman** had a population of 1,291 in 2006. Industries in the area include lumbering and coal mining. The village operates the **Chipman Marina**. There is a floating wharf that extends 35 m from the east bank, opposite the single bridge pier. The outer end is 30 m long, 2.4 m wide and has depths of 1.8 to 4.3 m alongside. There is a depth of 2.4 m along the south face. The wharf is available for public use; the deck floats less than 0.3 m above the water surface.

71 **Facilities**. — There are churches of various denominations in the village. Drug, grocery and general stores, gasoline and other provisions are located close to the marina. There is a bank and a restaurant. Some stores close at 13:00 on Wednesdays and noon Saturdays.

Maquapit Lake, French Lake and Indian Lake

72 **Entrance to Maquapit Lake**. — **Lower Thoroughfare** connects Grand Lake to **Maquapit Lake**, leaving the SW corner of Grand Lake between **Indian Point**

and **Marshalls Island**. Marshalls Island is a low gravel point. North of this point the shores are wooded, while between it and the Jemseg River the south end of the lake is marshland.

73 A narrow buoyed channel runs through the shoal water at the south end of Grand Lake as far as Indian Point.

74 Shoal water west and south of Marshalls Island is known as **Back Lake**. Lower Thoroughfare crosses north of this shoal area. West of Back Lake, the banks of Lower Thoroughfare are wooded and gives the impression of navigating a canal.

Chart 4142-2

75 **Maquapit Lake**. — Except for the shoal south end and Hunters Ferry Cove, Maquapit Lake is free of dangers. The shores of the lake are for the most part wooded and dotted with summer homes.

76 Two natural channels, one from Grand Lake by way of Lower Thoroughfare, the other to French Lake by way of Main Thoroughfare, lead through the southern shoal area. The narrow dog-legged channel out of Lower Thoroughfare is marked by stakes.

77 **Hunters Island** *(45°56'N, 66°10'W)*, 2.6 miles NE of Lower Thoroughfare and joined to the mainland by low marshland, is wooded.

78 **Hunters Ferry Cove** is entered between Hunters Island and a grassy point to the north on which numerous summer homes are located. **Anchorage** is available in the west side of the cove. A causeway crosses the cove 0.4 mile above Hunters Island. A culvert, where there is a depth of only 0.6 m, passes through the causeway; it is 5.8 m wide with a vertical clearance of 5.2 m. A canteen, with groceries and a public telephone, is located on the main road close west of the causeway.

79 **Fulton Island** lies between the west end of Maquapit Lake and **French Lake**, and separates Main Thoroughfare to the south and Blind Thoroughfare to the north.

80 **Blind Thoroughfare** is shoal and affords no passage into French Lake. **Main Thoroughfare** is free of obstructions. It is entered east of Fulton Island by way of a narrow buoyed channel out of Maquapit Lake. The shores on both sides of the entrance are wooded and the waterway through the trees is not easily identified from the north. Main Thoroughfare is wooded on both shores and gives the impression of navigating a canal.

81 **Loders Creek** runs into the south side of Main Thoroughfare 1.8 miles west of Maquapit Lake. Shoal water extends off both entrance points. The creek has a depth of 2.1 m in the centre as far as the east end of **The Oxbow**, 0.9 mile above the entrance where a gravel causeway blocks passage. Fallen trees abound in the creek making navigation hazardous. To avoid shoal water extending from the west entrance point, boats should pass 15 m off the east bank.

82 A highway bridge with a vertical clearance of 3.5 m and one central pier spans Main Thoroughfare close west of Loders Creek. The bridge also crosses Blind Thoroughfare, close north.

83 The channel west of Main Thoroughfare runs for 0.4 mile parallel to the low, marshy south shore before entering **Upper Thoroughfare**.

84 Upper Thoroughfare leads south and west of **Harrison Island** before returning to French Lake. The eastern half of Upper Thoroughfare is lined with trees and the shores of the western half are swampy. The staked channel leaving Upper Thoroughfare is narrow and runs through very shoal water.

85 **Directions**. — When entering French Lake from Upper Thoroughfare head towards the bridge which spans Blind Thoroughfare. When abreast of the east end of bushes on the north side of Harrison Island, head towards **Nash Point**, 0.3 mile north of Blind Thoroughfare.

86 **Apple Island**, situated near the centre of French Lake, is wooded. **Ram Island**, a small island with an elevation of 4 m, is covered with low bushes and lies 0.4 mile west of Apple Island. The channel through French Lake runs east and north of Apple Island, then north and west of Ram Island.

87 The settlements of **Randall Corner** and **Lakeville Corner** lie on the east shore of French Lake. The south shore is swampy and the west shore is wooded.

88 **The Narrows** leads out of the west end of French Lake towards **Portobello Stream** to the SW, and Indian Lake to the NE. The channel through The Narrows lies south of centre, and leads close to the west shore of the waterway joining Portobello Stream and Indian Lake.

89 **Sand Point**, the NE entrance point of The Narrows, is wooded. The SW entrance point is low marshland. **Indian Island**, the west entrance point to Indian Lake, is wooded and joined to the mainland by low marshland.

90 **Indian Lake** is surrounded by wooded terrain. Marshland lies between the trees and the lake at the north end. The lake is shallow with a deepest depth of only 2.1 m. Very shoal water lies NW of Gull Island, the bottom of the lake is mud.

91 **Gull Island**, near the centre of Indian Lake, is covered with bushes. **Princes Island**, joined to the mainland on the east by low marshland, is wooded and lies east of Gull Island. Both islands stand out prominently from the south.

92 **Little River** runs into the north end of Indian Lake. The entrance is shallow and not easy to locate in the surrounding marsh.

93 **Mill Cove**, which has a marshy shoreline, lies west of The Narrows. Good **anchorage** in mud will be found in the centre of the cove.

94 The waterway running from The Narrows to Portobello Stream, 1.1 miles to the SW, runs between marshy

banks. The channel lies on the west side of the waterway as far as **Stickney Point**. At Stickney Point the waterway branches into three arms. **Podnocker Cove** on the north and **The Blobs** to the SE are shoal. **Portobello Stream**, the central arm, leads west as far as **Walkers Island**, where a sharp turn to the south marks the end of navigation.

Jemseg to Fredericton
(including Oromocto River)

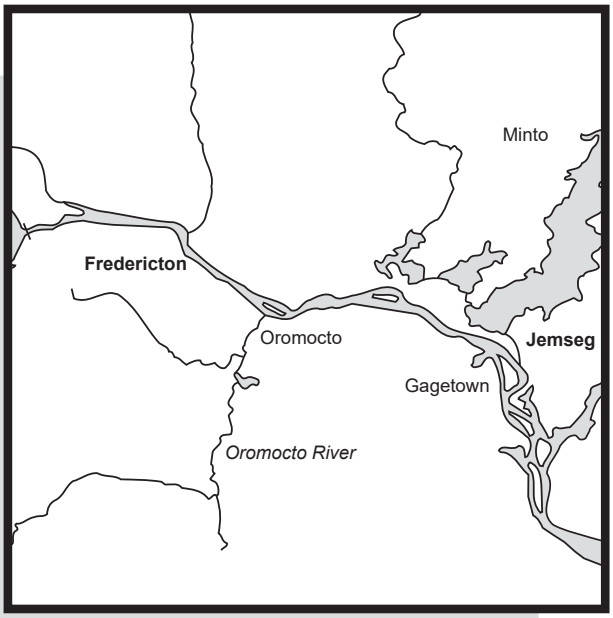


Chart 4142-1

1 North of the approaches to the Jemseg River, shoal areas exist in the main river requiring more attention to navigation. A shoal area 0.7 mile long lies between midstream and the east shore of **Gagetown Island**.

2 A **submarine cable** crosses the main river channel 0.8 mile NW of Raft Channel, near the south end of this shoal area.

3 **Grimross Island**, situated in midstream opposite from Grimross Canal *(45°49'N, 66°10'W)*, is low and grassy and except for the SE tip is fringed by deciduous trees. Shoal water extends from the SE and NW ends of the island.

4 The main channel leads south of Grimross Island after passing west of the shoal water off Gagetown Island.

5 The north channel, which is the shallower of the two, leads between Grimross and Thatch Islands.

6 **Thatch Island**, lying north of Grimross Island, is a peninsula. It is connected to the mainland by a causeway at its eastern end. The island is low and grassy and except for the shores of the cove on its SE end it is fringed by deciduous trees. The cove has a depth of 2.1 m for the outer third of its length where there is good **anchorage** in mud. A shoal spit extends east from the south entrance point of this cove. In order to avoid the spit, approach the north bank of the river when abreast of the SE end of the solid treeline on Grimross Island. When the cove is completely open, follow the north bank of the river.

7 **Bridge**. — A highway bridge, with a vertical clearance of 23 m, crosses the main river 0.4 mile NW of Grimross Island.

8 At **Coytown**, on the south bank 1.3 miles above Grimross Island, there is an L-shaped concrete wharf that extends 30 m from shore. The outer face is 15 m long and the L-end is 13 m wide. The SE corner of the wharf has collapsed, and the rest of the outer face has a depth of 1.2 m, foul bottom, alongside. There is no berth on either of the sides.

9 **Conspicuous hills**. — A number of brown peaked hills, from a former gravel pit operation, are located on the south shore about 1 mile west of Coytown.

10 At **Upper Gagetown**, 1.5 miles above Coytown on the south shore, there is a concrete high and low water wharf that extends 25 m from shore with a

SAINT JOHN RIVER — ABREAST OF GRIMROSS ISLAND (2006)

depth of 1.2 m alongside. The high water face is 11 m long, the low water face is 14 m long.

11 **Facilities**. — Gasoline is available 0.2 mile east of the wharf.

12 A concrete pier with an elevation of 0.6 m extends 30 m from shore 0.2 mile west of the wharf at Upper Gagetown. A concrete crib with an elevation of 1.2 m lies 15 m off the east side of the pier.

Chart 4142-2

13 **Ram Island** *(45°52'N, 66°16'W)* lies close to the south shore with its east end situated off the mouth of Swan Creek. The island is low and grassy and except for half of the south shore it is fringed by deciduous trees. Good **anchorage** in mud can be found behind Ram Island. West of Ram Island, grass and weeds grow in shoal water blocking access from the river.

14 **Directions**. — When entering the waterway behind Ram Island, give the east end of the island a wide berth by heading for the south bank of the river 120 m east of Swan Creek. When abeam of the east end of Ram Island the centre of the waterway can be used.

15 The entrance to **Swan Creek** is crossed by a bar over which there is a depth of 0.9 m. Inside the bar a depth of 2.1 m can be carried into **Swan Creek Lake**. Two bridges, with vertical clearances of 6.1 and 4.1 m, cross the creek midway to the lake. Swan Creek Lake is part of a Military Reserve.

16 **Gilbert Island** and **Ox Island** divide the river into three channels 2.4 miles NW of Upper Gagetown. **Sheffield Channel**, the deepest of the three, leads north of Gilbert Island, while **Ox Island Channel**, the preferred channel, leads south of Ox Island. The channel between the two islands is shoal at the west end and is not recommended for passage.

17 A concrete low water wharf that extends 18 m from the north shore lies north of **Lower Burton**. The outer face is 15 m long with a depth of 1.5 m alongside.

18 **Facilities**. — A restaurant, motel and public telephone are located 0.3 mile west of the wharf.

19 **Middle Island**, situated 2 miles west of Gilbert Island, divides the river into two channels. The island is of low grassland fringed with large deciduous trees. A sandy flat, covered with grass, extends from the line of trees on the NW side of the island.

20 **Bridge**. — A highway bridge with a vertical clearance of 23 m spans the river 1.2 miles above Middle Island. The two central piers are fitted with fixed red **lights**.

21 At **Burton**, on the south shore beneath the bridge, there is an L-shaped concrete wharf that extends 50 m from the shore. The outer face is 16 m long with a depth of 2.4 m alongside. The deck of the wharf is overgrown. There are no facilities nearby.

OROMOCTO — APPROACHES (2006)

22 An abandoned **submarine cable** crosses the river at Burton.

23 A concrete wharf is situated on the north shore of the river 0.2 mile below the bridge. The wharf extends 20 m to an outer end 22 m long with depths of 1.8 to 2.4 m alongside.

24 **Oromocto Island** divides the river into two channels 0.4 mile SW of the above-mentioned bridge. The island is low and grassy except for the east end which is partially fringed by large deciduous trees.

25 The north channel is crossed by a row of concrete cribs 0.5 mile within the entrance. Navigation beyond these cribs in not recommended as the channel is shoal and strewn with submerged logs and deadheads.

26 At **Maugerville**, on the north bank of the river abreast the east end of Oromocto Island, a concrete wharf extends 5 m from shore and has an outer face 20 m long with a depth of 0.6 m alongside. The top part of the wharf is in disrepair. A vehicle resting stop lies adjacent to the wharf.

27 A **conspicuous** red and white banded chimney, 73 m high, marked with red lights, lies about 0.1 mile SW of the bridge at Burton.

28 **Thatch Island** forms the west entrance point to the Oromocto River.

29 **Wharves**. — The *Town of Oromocto Low Water Wharf* is L-shaped, concrete and extends 70 m from the shore at the east entrance point to the Oromocto River. The only berth is on the outer face, which is 22 m long with a depth of 2.1 m alongside.

30 **Oromocto Boat Club** is situated within the entrance to the Oromocto River on the east side. A floating wharf 420 m long is placed 18 m off the shore. There is a least depth of 3 m along the outer face and 2.4 m along the inner side. Two stone piers that remain from a bridge lie on either side of the river's midstream. The west pier is circular and the east one oblong, both have an elevation of 5 m. The south end of the wharf is made fast to the east pier, shoal water lies between each pier and the shores. Gasoline, ice, water, electricity, washrooms, showers, sewage pumpout and a public telephone are available on the wharf; visiting craft are welcome and a berth is available on request.

31 **Sir Douglas Hazen Park** is the name of the public grounds along the shore adjacent to the above wharves.

32 **Cables**. — Overhead power cables, with a vertical clearance of 19 m, span the river over the boat club, 150 m from the bridge piers. An abandoned submarine cable crosses the river close south of the bridge piers.

33 The town of **Oromocto** had a population of 8,402 in 2006. Canadian Forces Base Gagetown, one of the largest military training areas in the British Commonwealth, is the major employer; it lies within and adjacent to the town boundaries. A shopping area, with grocery stores, banks, restaurants

OROMOCTO (2006)

and a liquor store, and a large hotel with a licensed dining room, lie opposite to the wharf area. There is a hospital and several churches.

34 Oromocto is 3.5 miles from **Fredericton Airport**, from where there are regular scheduled flights to Canadian destinations. Charter service is also available. Buses run daily to Saint John and Fredericton.

Oromocto River

35 **Oromocto River**. — The origin of the name Oromocto is Indian, meaning deep water. A minimum depth of 2.4 m is carried in the river for 11.4 miles above Oromocto, and 1.5 m a further 0.9 mile before obstructions from logging make navigation hazardous. These depths are found in midstream on straight stretches of the river, and between midstream and the outside bank on bends. The river is lined with deciduous trees for most of its navigable length, and there is only one building along this stretch.

36 In May and June numerous fish traps are placed in the river and mooring lines may cross the river and form a hazard to navigation. Log booms may be moored along the banks of the river creating an additional hazard. Knowledge of them should be acquired locally.

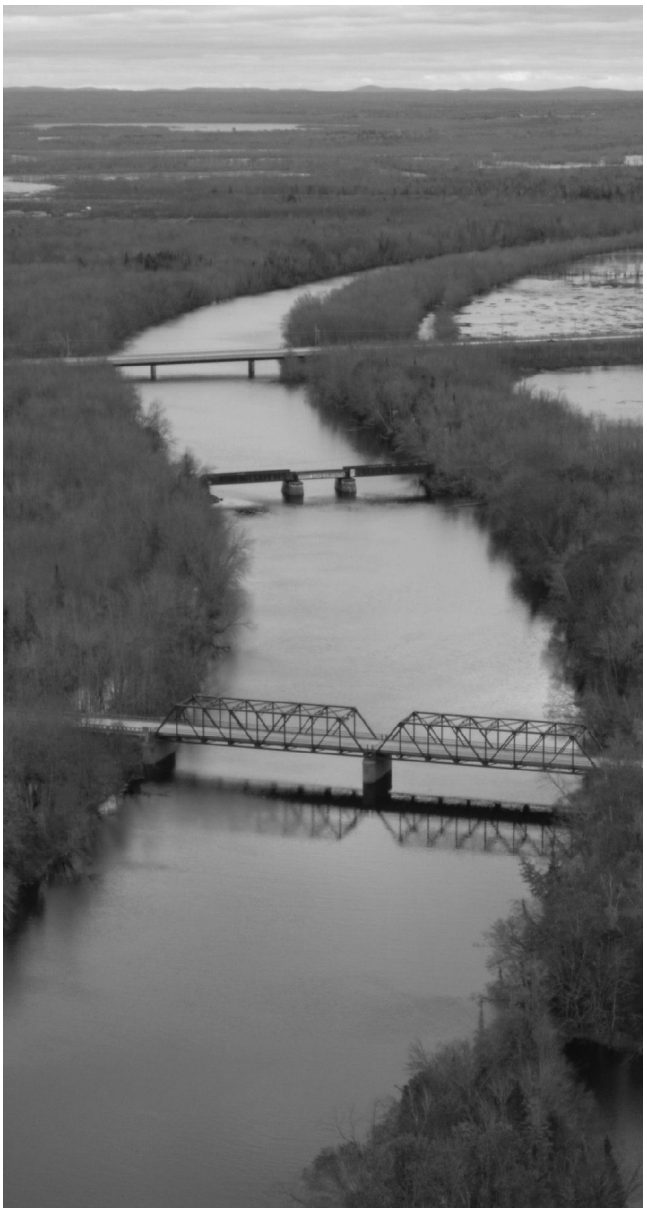
37 **Bridges**. — Three bridges span the river about 2 miles above Oromocto. The first bridge, a highway bridge, has one central pier and a vertical clearance of 6.6 m. There is a depth of 4.3 m midway between the pier and each shore.

38 The middle bridge, a railway bridge 0.2 mile above the highway bridge, has a vertical clearance of 6.4 m. It has two piers with a horizontal distance of 13 m and a depth of 4.3 m between them. Another highway bridge, with a vertical clearance of 7 m, is 0.2 mile above the railway bridge.

39 A highway bridge once crossed the river 0.9 mile above the railway bridge and three concrete piers with an elevation of 5 m remain. The centre pier is circular in shape, the others oblong. There is a horizontal distance of 14 m between the piers, and a depth of not less than 4 m in each of the passages between the piers. It was reported that submerged steel "I" beams protrude from each side of the central pier, and that one can pass safely midway between each pier. **Caution** should be exercised when doing so. A **submarine cable** crosses the river at the location of these piers.

40 **Kinney Creek** drains **Holden Pond** to the east, and flows into the Oromocto River at **The Oxbow (The Elbow)**,

BRIDGES OVER OROMOCTO RIVER (2006)



1.8 miles south of the above-mentioned bridge piers. A depth of 1.2 m can be carried for 0.4 mile into the creek, but there is no entrance into Holden Pond or the numerous smaller ponds that the creek drains.

41 **Rusagonis Stream** joins the Oromocto River 0.5 mile above Kinney Creek. A least depth of 1.5 m can be carried for 2.4 miles up the stream to a point 0.15 mile north of Bear Creek. At this point there is a depth of 0.9 m.

42 **Bear Creek** enters the south bank of Rusagonis Stream at the point where the stream turns to the NW. Rusagonis Stream turns sharply to the south 0.8 mile west of the Oromocto River. **Waasis Stream**, not navigable, enters the west bank at this point. The confluence of these two streams forms a deep and wide pool known as **Waasis Pond**. Rusagonis Stream is bordered by deciduous trees for its navigable length, and it is an excellent place to observe the wildlife of the area.

43 **French Lake Creek** enters the Oromocto River a little over 0.9 mile above Rusagonis Stream. A depth of 2.4 m can be carried 0.15 mile into the creek, beyond this point the creek and French Lake are shoal. A loose gravel boat launching **ramp** is situated on the east shore 0.2 mile within French Lake Creek. This ramp is on an extension of Smith Road, beyond **Waterville**.

44 **Sunpoke Creek** enters the west side of Oromocto River 0.6 mile above French Lake Creek. A depth of 1.2 m can be carried 0.25 mile up this narrow creek which is lined with trees. A southern entrance to French Lake, 0.25 mile above Sunpoke Creek, is shallow just inside the mouth.

45 **Morrow Dugway**, the entrance to **Sunpoke Lake**, 0.9 mile above the southern entrance to French Lake, is blocked by cribwork and sunken piles.

46 A bridge with a vertical clearance of 4.9 m spans the river 0.2 mile south of the entrance to Sunpoke Lake. Two concrete piers are situated at the west side of the bridge. There is a depth of 5.8 m in the centre of the wide eastern span and 1.8 m between the piers. A gravel launching **ramp** is located at the east end of the bridge.

47 **Morrow Pond** lies on the east side of the river south of the above bridge.

48 **Bear Brook** enters the east side of the river 2.4 miles above the same bridge. The entrance is shoal. A creek on the opposite bank to Bear Brook has a depth of 1.2 m for a distance of 0.15 mile.

49 **Bass Creek**, 1.1 miles above Bear Brook, is shoal.

50 **Three Tree Creek** enters the west side of the river 1.5 miles above Bass Creek and is shoal.

51 **Moon Pond Lodge**, the only buildings on the river above Oromocto, is situated on the east bank 0.2 mile above Three Tree Creek. A gravel launching **ramp**, marking the end of safe navigation, is situated on the west bank 1.5 miles south of the lodge. The ramp is in the centre of a 180 degree turn in the river and is easy to distinguish on the sloped grassy bank. Two rock cribs, each with an elevation of 0.6 m, lie in midstream 0.15 mile south of the launching ramp. A least depth of 1.5 m can be carried for a farther 2.4 miles to a point midway between the North Branch Oromocto River and the highway bridge across the south branch.

52 This section of the river has sunken logs which present a hazard to navigation as they cannot be seen through the discoloured water. The tributaries to the main river above the launching ramp are for the most part shoal.

FREDERICTON — APPROACH AT PRINCESS MARGARET BRIDGE (2006)

Saint John River

53 **Oromocto Shoals** is the passage south of Oromocto Island, and represents the limiting depth on the Saint John River from Saint John to Fredericton.

54 A protective pier is situated 120 m north of the NE end of Thatch Island. Close east of this pier is a small area of ruins which dries at chart datum. The channel is marked with **buoys**.

55 A concrete wharf near **Lower Lincoln**, 1.6 miles NW of Oromocto Island, is in disrepair and is unusable. A ramp, 6 m wide, lies adjacent to this wharf. A discontinued light tower is situated close south of the wharf.

56 Shoal water extends to mid-channel from the west end of Oromocto Island.

57 There are two wharves at **Upper Maugerville**, 1.3 miles NW of Oromocto Island. The east one is a high water wharf which dries at chart datum, and is in a state of disrepair. The west one is a low water wharf, 16 m wide at the face with a least depth of 1.2 m alongside; a ramp lies off the west side.

58 **Obstructions**. — Sunken rock-crib remains and sunken moored deadheads extend from the south shore of the river to midstream, from opposite the east wharf at Upper Maugerville to 1.2 miles further NW. Above this point to where the river widens at **Lower St. Marys**, sunken crib remains lie as far off both shores as far as 120 m.

59 On the north side of the river, a wharf belonging to *J.D. Irving Forest Products* is located 0.35 mile NW of a man-made boat harbour. The outer face is 35 m long with a least depth of 3.4 m alongside.

60 **Cables**. — Overhead transmission lines with a vertical clearance of 23 m span the river at Lower St. Marys. A submarine power cable crosses the river 0.2 mile SE of the overhead cables.

61 The river widens 0.3 mile above the transmission lines but the NE side of the river from the widening to **Princess Margaret Bridge**, 1.1 miles farther north, is shallow and bounded by a line of sunken cribs and crib remains. There is a vertical clearance of 25 m between the fourth and fifth piers of the bridge from the west shore.

62 **Fredericton Yacht Club** lies on the west bank 0.6 mile south of the Princess Margaret Bridge. The wharf face is made of two floating sections with depths of 1.8 to 3 m alongside, separated by a concrete launching ramp. Numerous boat moorings surround the wharf area. Visiting boaters are welcome and a mooring will be made available upon request. Water is available, gasoline and provisions can be purchased nearby. A restaurant and a public telephone are situated nearby.

FREDERICTON YACHT CLUB (2006)

63 **Obstruction**. — A sunken rock crib with a depth of 0.4 m over it lies 43 m off the centre of the eastern portion of the wharf.

64 A **submarine pipeline** crosses the river 0.4 mile north of the Princess Margaret Bridge.

65 **Bridges**. — A former railroad bridge with a vertical clearance of 9 m crosses the river 0.9 mile north of Princess Margaret Bridge. The bridge is used as part of a pedestrian trail system.

66 Ten piers from an old bridge, each at an elevation of 9 m, lie across the river 0.6 mile above the railroad bridge. A road bridge with a vertical clearance of 16 m crosses the river 0.9 mile above the railroad bridge. A **submarine pipeline** crosses the river 0.25 mile above this bridge.

67 **Nashwaak River** enters the east bank of the river close south of the railroad bridge. The Nashwaak River is shoal, and shoal water extends south of its entrance to midway between the railroad and Princess Margaret bridges, and west to midstream.

68 **Fredericton**, the provincial capital of New Brunswick, is situated on both sides of the Saint John River about 61 miles inland from where the river empties into the Bay of Fundy. Fredericton was incorporated as a city in 1848. It had a population of 50,535 in 2006.

69 Fredericton can trace its beginnings back about 300 years. The first inhabitants of the area were Maliseet and MicMac Indians. During the Acadian period, a military post was established near the mouth of the Nashwaak River in 1691. A settlement known as Ste. Anne's Point was established about 1732 on the site of the present city.

70 The area came under English control in 1759, but the modern city dates from the arrival of the United Empire Loyalists in 1783. In 1784, the county of Sunbury, Nova Scotia became the province of New Brunswick. A year later, Frederick Town, as named in honour of Frederick, the second son of King George III, became the capital of the province. The city is well known for its tree lined streets.

71 **Regent Street Wharf and Mooring Facility** is situated in Downtown Fredericton on the south bank of the river. Owned by the City of Fredericton, the facility is managed by *Downtown Fredericton Inc*.

72 The floating dock, a visitor facility, extends 20 m from the shore to an outer length of 76 m, and a depth of 3 m. Several mooring buoys, most of which are rented to

FREDERICTON — APPROACH AT OLD RAILWAY BRIDGE (2006)

FREDERICTON — BUSINESS DISTRICT (2006)

local boaters, are placed off the face of the wharf. All visitors must report to a **Port Warden**, who is on duty during July and August from 1000 to 2200 hours daily and on weekends during May, June and September. The Port Warden can be reached at **455-1445**, or VHF Ch 68. Garbage disposal is available and electricity and water are supplied on the dock.

A "no wake zone" with a speed of 5 km/hr is established for the river area adjacent to the facility.

73 Visitor moorings are available downstream of the former railroad bridge.

74 The public grounds adjacent to the river in this area are known as *The Green*. Many large Victorian homes line *Waterloo Row*, which backs *The Green*. There are many points of interest within a short walking distance:

75 *The New Brunswick Legislative Assembly Building* is the seat of the provincial government. The building was constructed in 1882 of sandstone and granite, and is easily recognized by its copper roof and Georgian dome 41 m high at its peak. It is open for tours daily from mid June to Labour Day.

76 Opposite to the Legislative Assembly, the *Beaverbrook Art Gallery* houses the largest collection of British and Canadian paintings in the province. The gallery was a gift to the Capital by industrialist Max Aitken, who was knighted by King George V. It is open daily.

77 *Christ Church Cathedral*, with a spire 60 m high, lies near the east end of *The Green*. Completed in 1853, this is the first new Anglican Cathedral to have been established since the Norman Conquest in 1066. It is open daily for tours between mid June and Labour Day.

78 *Officer's Square* is a military complex adjacent to the Regent Street Wharf. It includes a museum and is the site of a twice daily *Changing of the Guard* ceremony.

79 The *City Hall* is the oldest City Hall still in use in the Maritime provinces.

80 There are many hotels, motels and shopping areas in Fredericton. A large regional hospital is located within the city. A farmers' market operates on Saturday mornings and Fredericton is well known for handicrafts. More information is available at the tourist information centre in the Fredericton City Hall.

81 The Saint John River is navigable as far as **Mactaquac dam** but is only surveyed and charted as far as **Ross Island**.

82 **Water levels**. — Above Oromocto, the tidal influence on the level of the river is not measurable as the water level is affected by the random opening of Mactaquac dam. The water levels can vary by as much as 1.5 m immediately below the dam during any one day. At Fredericton, this change can be as high as 0.6 m and at Oromocto 0.3 m; below this the tidal cycle takes over. West of the charted limits, a strong current is created by opening the dam, and boats are **cautioned** that venturing farther upstream is hazardous.

Mactaquac
to Newburg Junction

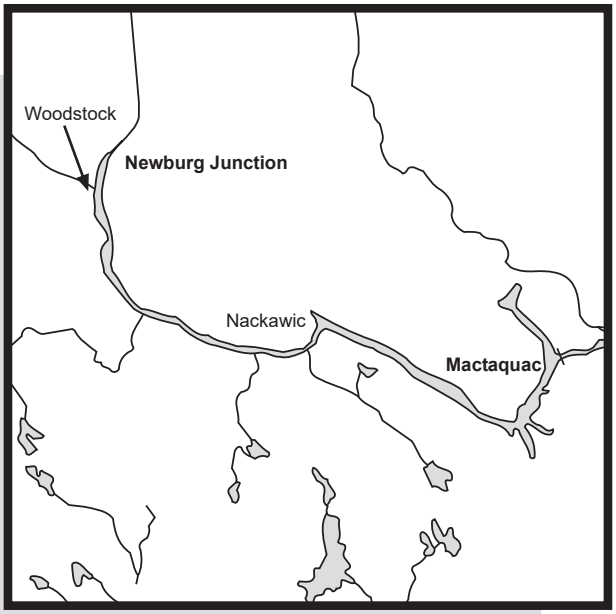


Chart 4145-1

1 The **Mactaquac dam** *(45°57'N, 66°52'W)*, initially thought of in 1943, was started in 1965 and completed 3½ years later. The dam is 180 feet (55 m) from top to bottom, 0.2 mile wide at the base and 1,700 feet (518 m) in length. It is a rock-fill structure with a watertight clay core. This structure has raised the river height over 100 feet (30 m) at the dam. The reservoir created covers 22,000 acres (8,800 ha) and extends 60 miles (96 km) upstream to a point between Woodstock and Hartland. This area is commonly known as the **Mactaquac Headpond**.

2 There are four generating units in operation, the water passing through a 600 foot (183 m) channel cut in the solid rock. Due to wide variations in water flow, and to allow for maximum flood conditions, ten sluice gates allow for a maximum discharge of 600,000 cubic feet (16,980 cubic metres) of water per second. The greatest flow of the Saint John River ever recorded at Mactaquac was 296,000 cubic feet (8,377 cubic metres) per second. These gates hold the water level behind the dam to between 128 and 133 feet (39 and 40.5 m) above Geodetic Survey of Canada Datum.

3 Boats can only reach Mactaquac Headpond by road as no facility to bypass the dam exists. Prior to flooding the area, all existing trees and buildings were removed. With few exceptions, the headpond is deep and free of obstructions. Most dangers are marked by buoys. The land bordering the headpond is a mixture of heavily wooded cliffs and open farms; houses are large and churches, where charted, are **conspicuous**.

4 **Water levels**. — Chart datum for the headpond is 125 feet (38.1 m) above Geodetic Datum. With higher water levels, depths are increased and vertical clearances decreased. A charted clearance of 9 feet (2.7 m) is reduced to 1 foot (0.3 m) when the water level is at a maximum of 133 feet (40.5 m). **For safe navigation, a height of 133 feet (40.5 m) should be assumed for the Mactaquac Headpond.**

5 **Mactaquac Park Arm** extends from the dam to a causeway 1.4 miles north.

6 **Mactaquac Powerboat Marina**, part of **Mactaquac Provincial Park**, is situated at the west end of the above causeway. There are 60 moorings for power boats in addition to berths alongside a floating dock that runs along the marina's NW and SW sides. The marina is entered

MACTAQUAC DAM — FROM THE EAST (2006)

MACTAQUAC DAM — FROM THE WEST (2006)

MACTAQUAC POWERBOAT MARINA (2006)

between two earth breakwaters. The eastern breakwater is built in two sections and joined by a footbridge beneath which there is a depth of only 2 feet (0.6 m).

7 **Facilities**. — Gasoline and oil are available from mid June to mid September. Water, toilets, garbage disposal, and a canteen are located at the dock, and groceries, camping supplies, ice and propane are available in the park. A concrete launching ramp is situated in the SW corner of the marina.

8 A beach is located adjacent to the marina on its SE side. Boaters should keep well clear of the area.

9 **Mactaquac Stream Basin** extends above the causeway at the Mactaquac Powerboat Marina. There are two sets of boat culverts on each end of the causeway, each set with two openings. The culverts are corrugated metal and have a width of 16 feet (4.9 m). The western two are not useable while the eastern two have a clearance of 15 feet (4.6 m) and a depth of 10 feet (3 m) with maximum water levels.

10 The shores of Mactaquac Stream Basin are wooded to the waterline. Except for the eastern half of the unnamed cove 0.9 mile NW of the causeway, sunken tree stumps border the SW shore. A natural **ramp** is situated 1.1 miles NW of the causeway on the northern shore. The basin turns to the northward 3.5 miles above the causeway. This northern extension abounds with above-water and sunken tree stumps. Two coves lie south of this extension. The east one is completely foul, while the west one is foul beyond the small island that lies midway between both shores.

11 A **sailboat marina** with 40 moorings is located in Mactaquac Provincial Park at **Walinaik Cove** directly opposite Mactaquac dam. A **boom** moored to the northern entrance point stretches halfway across the entrance to the cove. The boom is in position to prevent drift logs from entering the cove. A concrete launching **ramp** is located at the head of Walinaik Cove. An **overhead** power **cable** with a clearance of 11 m traverses the cove close NW of the marina.

12 **Glooscap Reach** extends from the dam at Mactaquac to **Scoodawabscook Bend**, 5.3 miles SW.

13 **Crib**. — On the eastern shore 0.7 mile south of the dam, a wooden crib extends from the northern entrance point to a small cove. A boom stretches from the crib across the mouth of the cove. The crib is used to release fish that are collected at a hatchery below the dam. A rock that dries 5 feet (1.5 m) lies 250 feet (76 m) off the face of the crib.

14 A small treed islet lies off the north entrance to **McNallys Cove**, on the west side at the south end of Glooscap Reach. Good **anchorage** is available along the south shore, but the north shore is foul for 700 feet (213 m) off. The inner end of the cove is divided into two arms by a

LONGS CREEK ARM (2006)

gravel spit. The head of the cove is occupied by a privately owned campground; fresh water is available.

15 **Kellys Creek Basin** is situated at the south end of Glooscap Reach on the east side. A causeway crosses the west end of the basin; a culvert at the north end allows for the entry of small boats.

16 **Longs Creek Arm** enters the centre of Scoodawabscook Bend from the SE. A highway bridge with a vertical clearance of 15 feet (4.6 m) lies inside the entrance. The main arm is deep and free of obstructions for most of its length, with only the last 1,000 feet (305 m) being foul. This arm affords excellent **anchorage**, and as the banks are steep-to, boats can moor to trees. The arm close inside the bridge provides excellent **anchorage**, but stumps lie close to the south shore and at the extreme end of the arm. Nearly 0.7 mile beyond the bridge a third arm leading in a SE direction provides excellent **anchorage**, however boaters should not go more than 1,500 feet (457 m), or two-thirds of its length as underwater obstructions exist beyond this point.

17 **Woolastook Park**, a campground, is mostly open field, and is situated on the peninsula separating Kellys Creek Basin and Longs Creek Arm. The park extends to inside the bridge and causeway.

18 **Ramps**. — Two launching ramps are located in this area. One is close inside the above-mentioned bridge on the north shore, the other at the head of a small cove at **Longs Creek**, 0.4 mile west of the bridge.

19 **Wheeler Cove**, lying 0.9 mile west of the bridge at Longs Creek Arm, and **Jewetts Cove**, a farther 0.9 mile west, afford good **anchorage** at their heads. Both coves have steep-to sides and boats can moor to trees.

20 **Kings Landing Historical Settlement**, 0.5 mile west of Jewetts Cove, is a re-creation of a 19th century New Brunswick Loyalist village. The settlement, open to visitors, is bordered on the east by **Burden Cove** and on the west by **Curser Cove**. A wharf is situated at the eastern entrance point of Curser Cove, but boats are requested not to enter either cove without prior arrangement.

21 **Coac Reach** extends from Kings Landing to **Nackawic Bend** 13 miles to the NW. The south shore of the reach is smooth having only a few very small coves that could be used as anchorages or berths. Strong NW winds make the reach very rough, but the coves provide snug shelter. The islets charted close to the north shore opposite Kings Landing are very low and the charted elevations are to the tops of trees.

22 The cove at **Pinder Creek**, on the north shore 0.9 mile NW of Kings Landing, is an excellent **anchorage** and affords shelter in all but SE winds. **Bear Island Cove**, 2.3 miles NW of Pinder Creek, is deep but an **anchorage** or berth can be found close inshore. The cove is

KINGS LANDING (2006)

easily identified as the evergreen trees on the SE entrance point are **conspicuous**. There are no facilities at either cove.

23 **Submarine cables** cross the headpond 2.4 miles east of Nackawic Bend. Boaters are cautioned not to anchor in the vicinity of the signs which are posted on both shores. A sand bar is reported to be building from a point on the north shore, 0.2 mile west of the cable crossing.

24 The town of **Nackawic**, population 977 in 2006, is situated on the south shore of **Culliton Cove**. Floating piers are placed in a small sandy cove fronting the hockey rink, a large white **conspicuous** building. **Anchorage** is available in a small cove opposite the town hall, 0.4 mile SE of the road bridge spanning Culliton Cove. A plaza, having groceries and a bank, lies opposite to these anchorages. Gasoline and diesel are available. There are churches of all major denominations in the area.

25 A highway bridge with a vertical clearance of 26 feet (7.9 m) spans the headpond near **Pokiok**, 1.8 miles south of Nackawic. The stretch of water from the bridge to **Shogomoc Cove**, 3.5 miles distant, is known as **Pokiok Reach**.

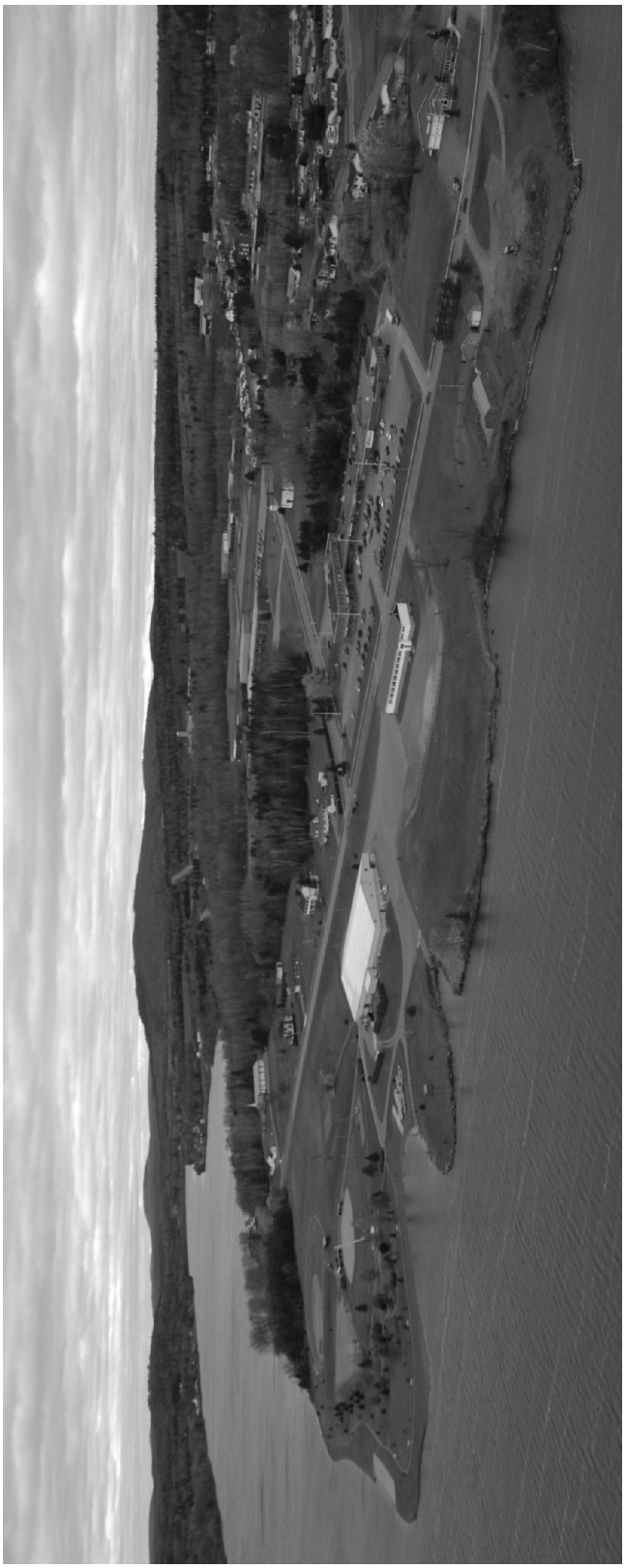
26 Overhead power cables with a vertical clearance of 59 feet (18 m) cross the headpond 0.6 mile NE and 0.3 mile west of the highway bridge.

27 Close west of the above-mentioned bridge, **Pokiok Stream** enters the south shore. At the entrance to the stream there is a submerged bridge, and by keeping to the centre of the stream a depth of 6 feet (1.8 m) can be carried over it. Care must be taken not to get too close to the east bank where the guard rails are awash at datum. Once across the bridge 10 feet (3 m) of water can be carried until alongside sheer rock face, where mooring can be made to trees above. A public telephone, service station and restaurant are situated adjacent to the west bank on the main highway above the stream.

Chart 4145-2

28 **Shogomoc Stream** enters the headpond through **Shogomoc Cove** at the west end of Pokiok Reach. A shoal with 5 feet (1.5 m) over it lies midway and in line with the two entrance points to the cove. A concrete road bridge, almost submerged when the headpond is high, crosses the stream at the head of the cove.

NACKAWIC (2006)



NACKAWIC STREAM (2006)

POKIOK REACH (2006)

SHOGOMOC COVE (2006)

29 On the south bank, three small inlets are located within 0.4 mile west of Shogomoc Cove. These provide good shelter from strong NW winds and mooring to trees is easily done.

30 On the north shore, east of Shogomoc Cove, the small cove that **Bulls Creek** empties into is spanned by a flooded highway bridge, the guard rails of which dry 1 foot (0.3 m) at datum.

31 **Temple**, a village on the south shore, lies at the west end of **Shogomoc Reach**. There is a small cove where 5 feet (1.5 m) of water can be carried all the way into a good **anchorage** or berth along the shore.

32 Across the river from Temple, **Little Patterson Brook** empties into a cove which affords good **anchorage**. An L-shaped cove, 1,500 feet (457 m) west of the above-mentioned cove, affords a berth alongside the high grassy bank. This cove is bordered on the east by a field and on the west by a gravel pit. The point situated a farther 900 feet (274 m) west should be avoided as many submerged stumps exist near the feature.

33 **Meductic Reach** extends from Temple to **Meductic**, 2.6 miles west.

34 An **overhead cable** with a vertical clearance of 50 feet (15.2 m) crosses the headpond 0.6 mile west of Temple.

35 **Eel River** discharges into the headpond close west of Meductic. The mouth of the river is spanned by a highway bridge with an overhead clearance of 38 feet (11.6 m). A rock with a depth of 5 feet (1.5 m) lies in the centre of the river mouth. The best channel around the rock is to the east. A small park, with a paved ramp, is situated close east of the bridge at the entrance to the river. The Village of Meductic had a population of 155 in 2006.

36 **Overhead cables**. — Close inside the bridge which crosses the Eel River there is a power line with an overhead clearance of 28 feet (8.5 m).

37 A power line with an overhead clearance of 70 feet (21 m) is situated 2,000 feet (610 m) east of Eel River.

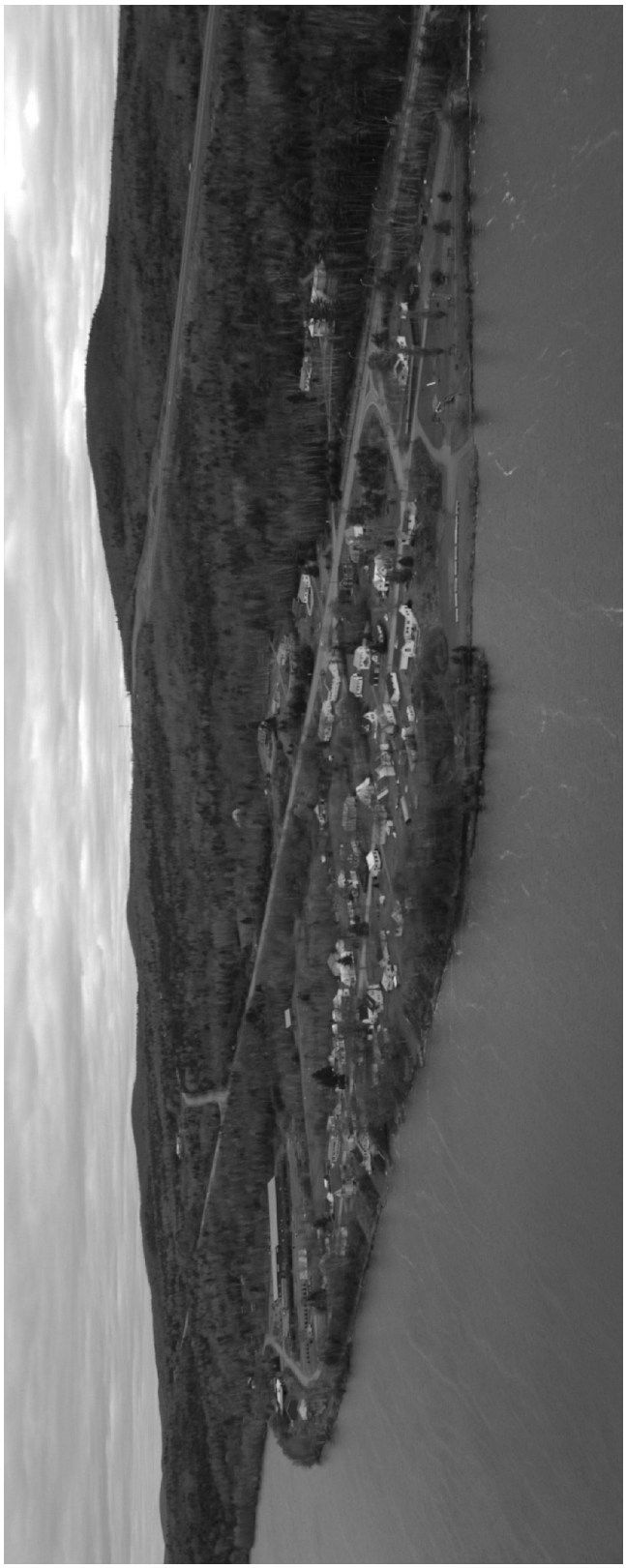
38 Situated 0.4 mile west of Eel River there is a power line with an overhead clearance of 41 feet (12.5 m).

39 **Shoals**. — Off the mouth of **Hays Brook**, 2.8 miles NW of Eel River, shoal patches with a least depth of 2 feet (0.6 m) exist as far as 1,100 feet (335 m) off the west shore.

40 **Old Kirk Point**, a low grassy spit 4 miles west of the Eel River, marks the southern entrance point to **Old Kirk Cove**. Good **anchorage** can be found in the cove but boaters should not approach the shore closer than 50 feet (15 m) as submerged boulders exist. In this area a church with an open belfry is **conspicuous**.

41 **Essepenack Cove** is entered through a gut with 5 feet (1.5 m) of water in it, 0.4 mile north of Old Kirk Point. Boaters are cautioned that the north end of the

VILLAGE OF MEDUCTIC (2006)



EEL RIVER (2006)

OLD KIRK COVE AND ESSEPENACK COVE (2006)

WOODSTOCK REACH (2006)

WOODSTOCK (2006)

SAINT JOHN RIVER ABOVE WOODSTOCK (2006)

cove is foul with stumps and islets. If an anchorage is sought in the cove, extreme care must be exercised in rounding the shoal spit extending from the south side at the entrance. The best water is found close to the east shore.

42 From the point of widening, 0.8 mile north of Essepenack Cove, to above the town of Woodstock, numerous foul and shoal areas exist in the central portion of **Woodstock Reach**, which extends from Old Kirk Point to 1 mile beyond the bridge at **Upper Woodstock**. **Riordan Islets**, grassy with a maximum elevation of 13 feet (4 m), can be passed on either side but the main channel is to the east. Numerous shoal areas exist around these islets especially to the west and north.

43 A low grassy island extends from the west shore halfway across the waterway 1.1 miles north of Riordan Islets. Shoal water extends from the south end of the island half the distance to Riordan Islets.

44 **Clowes Shoals**, situated 2 miles north of Riordan Islets, divide the headpond into two channels. The best channel is on the west side. A church and a cemetery at **Indian Village**, on the west shore, lie adjacent to the centre of these shoals.

45 **Woodstock Island** and the shoal water that extends 0.9 mile south divide the river into two channels. The east channel is the better of the two.

46 **Woodstock** *(46°07'N, 67°34'W)*, a town with a population of 5,113 in 2006, lies on the west bank. The town is the commercial centre of the upper Saint John River valley. Passenger service to Fredericton, Moncton, Miramichi, Saint John and Edmundston is by bus. Provisions and supplies of all kinds are available. The town is served by churches of many faiths, a hospital, doctors, and dentists.

47 *Woodstock Marina* is located in the NE corner of **Woodstock Cove**. There are 20 large berths – 30 feet (9.1 m) in length, and 28 small berths – 20 feet (6.1 m) in length. Visitors are welcome. Power, water, gas and ice are available.

48 The mouth of the **Meduxnekeag River** at Woodstock is spanned by two bridges. The eastern bridge is a railway bridge with five support piers. Boats should pass between the second and third piers from the north shore. At high water levels, there will be a vertical clearance of 12 feet (3.7 m) and a depth of 19 feet (5.8 m).

49 The second bridge is a road bridge with a vertical clearance of 14 feet (4.3 m) at high water levels. Currents beneath the bridges fluctuate with the height of the headpond, **caution** is necessary.

50 Between the bridges, a rocky ledge is reported to run parallel to the north shore; it may be a hazard to navigation when the headpond is low.

51 The river above the second bridge is not surveyed and abounds with numerous shoal spots.

52 **Berth**. — A concrete retaining wall near the road bridge on the south side of the river can be used as a berth. There is a depth of 5 feet (1.5 m) alongside.

53 **Anchorage** is available as convenient along the west bank of Woodstock Reach above the Meduxnekeag River. **Grafton Cove**, to the NE of Woodstock,

is mostly covered with weeds; anchorage is not recommended.

54 **Caution**. — The only remains of the open bridge, as charted close above Woodstock Island, is an angle iron that lies close off the east bank. It is reported to show 1 foot (0.3 m) when the water level is very low.

55 A highway bridge with a vertical clearance of 39 feet (11.9 m) at the east end and 58 feet (17.7 m) at the west end spans the headpond 1.1 miles north of the Meduxnekeag River.

56 **Overhead cables** with a vertical clearance of 56 feet (17.1 m) cross the headpond close north of the above-mentioned bridge.

57 **Sharps Island** divides the river into two channels 0.4 mile north of the above-mentioned bridge. An **overhead cable** crosses the south end of Sharps Island. The vertical clearance in the west channel is 41 feet (12.5 m) and in the east channel 53 feet (16.2 m).

58 Two highway bridges cross the headpond at Sharps Island. The one over the eastern channel has an overhead clearance of 21 feet (6.4 m), the one over the western channel of 24 feet (7.3 m).

59 The headpond is surveyed for a farther 0.9 mile to the head of flooding caused by the Mactaquac dam. Boats can make passage as far as the bridge at **Hartland** but local knowledge should be sought.

Sail Plan

Adapted from Transport Canada Publication TP 511E.

Fill out a sail plan for every boating trip you take and file it with a responsible person. Upon arrival at your destination, be sure to close (or deactivate) the sail plan. Forgetting to do so can result in an unwarranted search for you.

Sail Plan

Owner Information

Name: _____

Address: _____

Telephone Number:_____ Emergency Contact Number: _____

Boat Information

Boat Name:_____ Licence or
Registration Number:_____

Sail:_____ Power:_____ Length:_____ Type: _____

Colour Hull:_____ Deck: _____ Cabin: _____

Engine Type:_____ Distinguishing Features: _____

Communications

Radio Channels Monitored: HF: ☐ VHF: ☐ MF: ☐

MMSI (Maritime Mobile Service Identity) Number: _____

Satellite or Cellular Telephone Number: _____

Safety Equipment on Board

Lifejackets and PFD's *(include number)*: _____

Liferafts (include type and colour): _____ Dinghy or Small Boat
(include colour): _____

Flares (include number and type): _____

Other Safety Equipment:_____

Trip Details — Update These Details Every Trip

Date of Departure: _____ Time of Departure:_____

Leaving From:_____ Heading To: _____

Proposed Route:_____ Estimated Date and

Stopover Points (include date and time):___ Time of Arrival:_____

_____ Number of People on Board: _____

Search and Rescue Telephone Number: _____

The responsible person should contact the nearest Joint Rescue Coordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC) if the vessel becomes overdue.

Act smart and call early in case of emergency. The sooner you call, the sooner help will arrive.

JRCC Victoria (British Columbia and Yukon) 1-800-567-5111
+1-250-413-8933 (Satellite, Local or out of area)
727 (Cellular)
+1-250-413-8932 (fax)
jrccvictoria@sarnet.dnd.ca (Email)

JRCC Trenton (Great Lakes and Arctic) 1-800-267-7270
+1-613-965-3870 (Satellite, Local or Out of Area)
+1-613-965-7279 (fax)
jrcctrenton@sarnet.dnd.ca (Email)

MRSC Québec (Quebec Region) 1-800-463-4393
+1-418-648-3599 (Satellite, Local or out of area)
+1-418-648-3614 (fax)
mrscqbc@dfo-mpo.gc.ca (Email)

JRCC Halifax (Maritimes Region) 1-800-565-1582
+1-902-427-8200 (Satellite, Local or out of area)
+1-902-427-2114 (fax)
jrcchalifax@sarnet.dnd.ca (Email)

MRSC St. John's (Newfoundland and Labrador Region) 1-800-563-2444
+1-709-772-5151 (Satellite, Local or out of area)
+1-709-772-2224 (fax)
mrscsj@sarnet.dnd.ca (Email)

MCTS Sail Plan Service

Marine Communications and Traffic Services Centres provide a sail plan processing and alerting service. Mariners are encouraged to file Sail Plans with a responsible person. In circumstances where this is not possible, Sail Plans may be filed with any MCTS Centre by telephone or marine radio only. Should a vessel on a Sail Plan fail to arrive at its destination as expected, procedures will be initiated which may escalate to a full search and rescue effort. Participation in this program is voluntary. *See Canadian Radio Aids to Marine Navigation.*

Distance Table

	Cambridge Narrows	Chipman	Coles Island	Douglas Harbour	Evandale	Fredericton	Gagetown	Hampton	Hatfield Point	Indian Lake	Jemseg	Royal Kennebecasis Yacht Club	Oak Point	Oromocto	Oromocto River (Head of Navigation)	Renforth	Rothesay	Saint John
Chipman	49																	
Coles Island	10	59																
Douglas Harbour	26	23	36															
Evandale	17	45	28	23														
Fredericton	41	56	51	34	38													
Gagetown	17	33	27	11	13	25												
Hampton	59	86	70	64	42	80	55											
Hatfield Point	30	57	40	35	12	50	25	50										
Indian Lake	34	36	44	15	30	42	19	72	43									
Jemseg	20	29	30	6	17	30	5	58	29	14								
Royal Kennebecasis Yacht Club	40	68	50	45	23	61	36	19	30	53	39							
Oak Point	23	51	34	29	6	44	19	36	14	36	23	17						
Oromocto	33	48	43	25	30	9	17	71	42	33	19	57	36					
Oromocto River (Head of Navigation)	48	63	58	40	44	23	31	86	56	48	34	70	50	15				
Renforth	44	72	55	50	27	65	40	15	35	57	43	4	21	56	71			
Rothesay	47	75	57	52	30	68	43	12	37	60	46	7	23	59	74	3		
Saint John	43	70	53	48	25	63	38	24	33	56	42	5	19	55	70	10	12	

Distances are expressed to the nearest even nautical mile.

APPENDICES

Fredericton, New Brunswick, 45°52'N, 66°32'W

Canadian Climate Normals 1971 – 2000 (source: Environment Canada)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Temperature (°C)													
daily average	-9.8	-8.2	-2.4	4.3	11.1	16.2	19.3	18.4	13.1	7.0	1.1	-6.3	5.3
daily maximum	-4.0	-2.3	3.0	9.7	17.5	22.8	25.6	24.7	19.5	12.8	5.6	-1.1	11.2
daily minimum	-15.5	-14.1	-7.8	-1.1	4.7	9.6	13.0	12.1	6.7	1.2	-3.5	-11.4	0.5
extreme maximum	14.1	18.6	22.2	30.3	35.2	35.3	36.7	37.2	33.9	27.8	21.1	15.9	
extreme minimum	-35.6	-37.2	-28.9	-15.1	-6.7	-0.6	1.7	1.3	-3.9	-8.9	-20.2	-33.8	
extreme wind chill	-45.1	-46.4	-38.0	-26.1	-12.5	-4.3	-0.2	-1.2	-6.6	-13.1	-26.5	-42.2	
extreme humidex	16.8	17.3	21.1	33.3	38.1	43.5	44.5	43.3	39.6	32.0	25.0	19.5	
Precipitation													
rainfall (mm)	46.2	32.2	48.1	64.1	94.2	88.6	87.1	89.8	94.5	96.0	85.5	59.4	885.5
extreme daily rainfall	65.5	51.8	45.4	58.7	83.8	69.9	69.1	148.6	124	60.2	81.0	71.5	
snowfall (cm)	70.2	50.6	54.4	22.5	1.5	0.0	0.0	0.0	0.0	1.5	18.5	57.3	276.5
days with	15	12	14	13	14	13	13	11	11	12	13	15	156
mn sea lvl pres kPa	101.4	101.5	101.4	101.3	101.4	101.3	101.3	101.5	101.6	101.7	101.5	101.5	101.5
Average Relative Humidity													
0600 hrs. LST %	74.0	72.9	76	79.4	83.1	85.9	87.8	89.4	90.0	86.0	83.1	78.9	82.2
1500 hrs. LST %	62.2	56.6	56.3	53.4	52.0	54.1	55.5	55.9	58.0	58.6	64.7	66.8	57.8
Wind (km/hr)													
mean speed	12.7	13.0	14.6	14.3	13.6	12.0	10.8	10.0	10.9	11.8	12.4	12.6	12.4
prevailing direction	W	W	W	W	S	S	S	S	S	S	W	W	S
maximum gust	119	121	105	100	97	132	105	93	105	117	116	103	
direction of gust	W	S	W	W	W	N	NW	W	S	NE	S	SW	
Cloud Amount (hours with)													
0 to 2 tenths	240.4	217.3	212.6	162/1	143.1	126.4	136.8	175.9	192.4	201.2	161.5	209.4	
3 to 7 tenths	136.7	131.6	129.9	131.7	186.2	212.4	243.7	229.1	190.8	161.7	145.4	133.2	
8 to 10 tenths	366.9	328.9	401.5	426.3	414.7	381.2	363.5	339.1	336.8	381.1	413.1	401.4	

Saint John, New Brunswick, 45°19'N, 65°53'W

Canadian Climate Normals 1971 – 2000 (source: Environment Canada)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Temperature (°C)													
daily average	-8.1	-7.3	-2.5	3.6	9.4	14.0	17.1	16.9	12.8	7.3	2.0	-4.7	5.0
daily maximum	-2.7	-1.9	2.3	8.3	14.8	19.5	22.4	22.2	17.7	11.9	6.0	0.3	10.1
daily minimum	-13.6	-12.7	-7.3	-1.2	4.0	8.4	11.7	11.6	7.7	2.7	-2.1	-9.7	-0.1
extreme maximum	14.0	13.3	17.5	22.8	33.0	32.0	32.8	34.4	31.0	25.6	21.7	16.1	
extreme minimum	-31.7	-36.7	-30.0	-16.7	-7.8	-2.2	1.1	0.6	-6.7	-10.6	-16.9	-34.4	
extreme wind chill	-44.8	-44.4	-39.5	-26.1	-13.9	-3.0	2.8	0.2	-5.7	-12.9	-25.9	-41.9	
extreme humidex	15.9	13.3	17.7	23.8	35.4	37.4	40.3	40.3	36.5	28.3	23.8	18.0	19.5
Precipitation													
rainfall (mm)	78.2	48.8	71.7	81.7	115.9	100.9	101.5	89.6	117.4	122.6	121.6	98.2	1147.9
extreme daily rainfall	83.0	82.3	74.0	125.5	66.5	108.2	79.4	125.2	83.2	85.3	154.4	92.2	
snowfall (cm)	66.5	50.0	47.4	22.2	1.4	0.0	0.0	0.0	0.0	2.2	12.5	54.3	256.9
days with	29.5	22.2	26.0	24.6	25.3	22.9	21.2	19.1	22.5	24.4	26.8	31.0	302.0
mn sea lvl pres kPa	101.4	101.4	101.3	101.3	101.4	101.3	101.4	101.6	101.6	101.7	101.5	101.4	101.4
Average Relative Humidity													
0600 hrs. LST %	75.7	75.5	79.1	83.0	86.6.	89.6	91.5	92.5	91.6	87.2	82.8	79.9	84.6
1500 hrs. LST %	65.6	61.9	63.0	60.7	60.4	63.2	65.0	64.2	65.4	65.3	68.2	69.9	64.4
Wind (km/hr)													
mean speed	18.2	17.7	18.6	17.7	16.0	14.3	12.8	12.1	14.1	15.9	17.4	17.8	16.1
prevailing direction	NW	NW	NW	N	S	S	S	S	S	S	NW	NW	S
maximum gust	143	146	137	121	132	129	105	96	130	138	126	145	
direction of gust	S	S	E	E	E	N	W	S	S	N	S	E	
Cloud Amount (hours with)													
0 to 2 tenths	237.9	224.9	218.5	162.7	153.5	133.8	139.0	170.4	190.9	203.1	176.2	210.9	
3 to 7 tenths	122.4	108.8	115.7	122.5	156.1	168.9	183.8	180.0	166.9	142.4	121.7	118.8	
8 to 10 tenths	366.9	328.9	401.5	426.3	414.7	381.2	363.5	339.1	336.8	381.1	413.1	401.4	

C = Chapter/P = Paragraph

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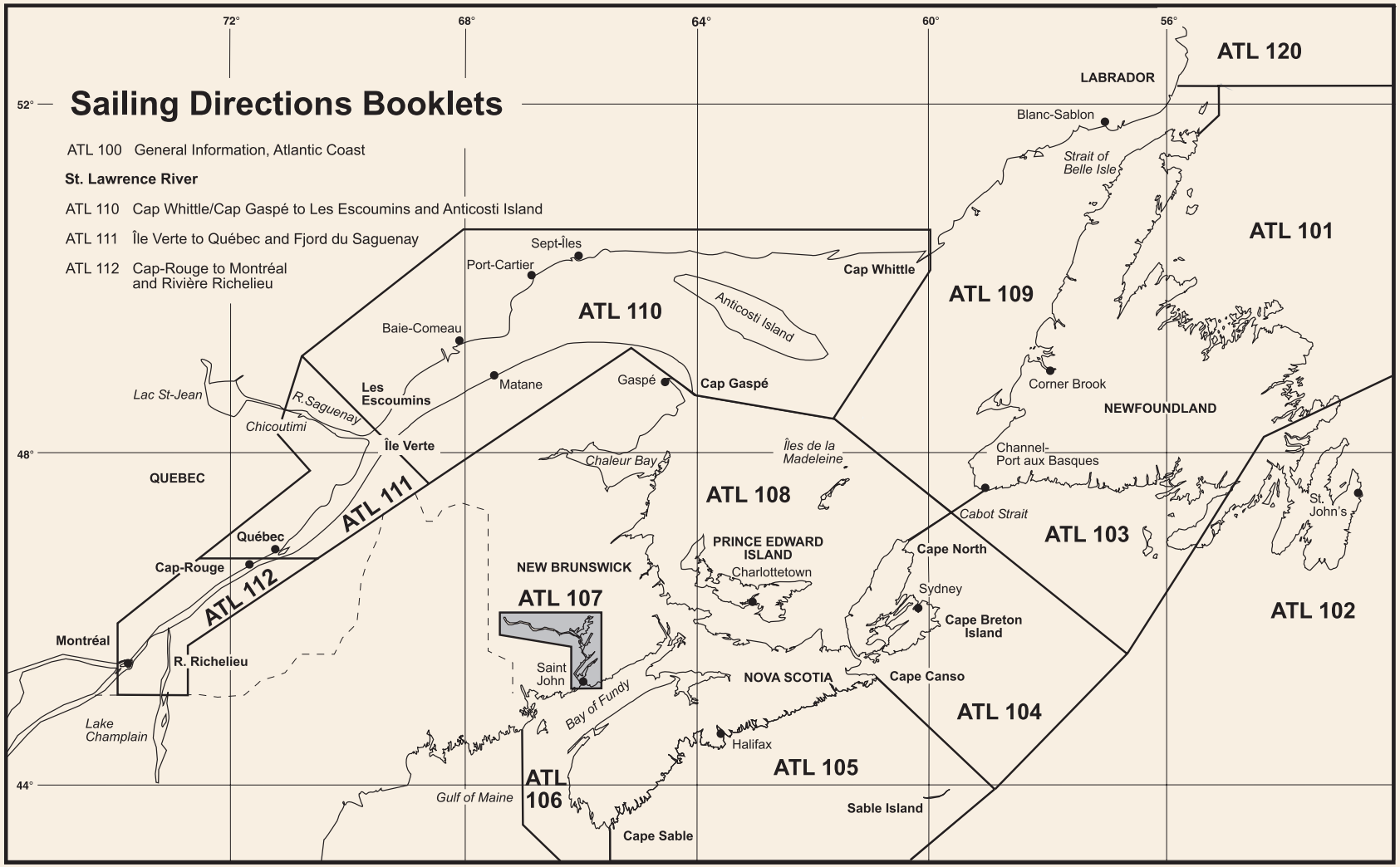

Newfoundland and Labrador

ATL 101 Northeast and East Coasts

ATL 102 East and South Coasts

ATL 103 Southwest Coast

ATL 120 Camp Islands to Hamilton Inlet (including Lake Melville)

Nova Scotia (Atlantic Coast) and Bay of Fundy

ATL 104 Cape North to Cape Canso (including Bras d'Or Lake)

ATL 105 Cape Canso to Cape Sable (including Sable Island)

ATL 106 Gulf of Maine and Bay of Fundy

ATL 107 Saint John River

Gulf of St. Lawrence

ATL 108 Gulf of St. Lawrence (Southwest Portion)

ATL 109 Gulf of St. Lawrence (Northeast Portion)

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